

Effect of Packaging and Innovativeness on the Performance of Herbal Medicine Businesses in Gombe State

Hashim Ilyasu*; Muhammad Umar Ganawaji

Department of Business Administration & Management, Gombe State Polytechnic, Bajoga.

**Corresponding Author's Email: hashimilyas68@gmail.com*

Abstract

This study examined the effects of packaging and innovativeness on the performance of herbal medicine businesses in Gombe State. A quantitative research approach was adopted, and primary data were collected through a structured questionnaire from owners and/or managers of herbal medicine businesses. The study employed purposive and snowball sampling techniques. The findings showed that packaging had a positive and insignificant effect on business performance ($\beta = 0.421$, $t = 2.417$, $p = 0.018$), while innovativeness had a positive and significant effect ($\beta = 0.630$, $t = 2.886$, $p = 0.000$). The model produced an R^2 value of .560, indicating that the predictors jointly explained 0.56 of the variance in business performance. The study concluded that strengthening modern packaging can improve the performance of herbal medicine businesses in Gombe State. The study recommended that herbal businesses owners should embrace continuous improvement in product packaging and hygienic handling in order to strengthen their competitiveness and customer patronage.

Keywords: Business performance; Effect; Gombe State; Herbal; Innovativeness.

How to Cite: Ilyasu, H. & Muhammad, U. G. (2026). Effect of Packaging and Innovativeness on the Performance of Herbal Medicine Businesses in Gombe State. *International Journal of Entrepreneurship and Business Innovation*, 9(2), 127–144. <https://doi.org/10.52589/IJEBI-XUJOMXPO>

INTRODUCTION

Business performance is an important indicator of the extent to which small and medium-sized businesses achieve their objectives in today's competitive business environment. This is clearly understood when assessing its contributions towards providing intense competition among marketers as well as exploring several innovative strategies for effective business growth and development, especially in herbal business practice. This supports the World Bank 2026) publication which revealed that effective business performance boosts the Gross Domestic Product (GDP) of the world by 50% which is roughly equivalent to 90% of all businesses worldwide. The same development is recorded when coming down to Africa as a continent it is explored that SMEs play a significant role in increasing the GDP by about 50% of the total index (World Bank, 2026). Similarly, in Nigeria, the contribution of SMEs to national GDP reached 48% to the growth and development of the country (World Bank, 2026). Therefore, this attests that SMEs are giant strides for complementing the effort of government in poverty reduction, job creation, as well as strong economic resilience that makes them possible to adapt to trends in the market forces, which compels them to compete in terms of unique differentiation strategies such as: proper packaging via innovative ways of standing a chance of attracting clients through building confidence and product image, thereby creating long term customer relationship with the business.

However, despite these developments and contributions achieved by performance of SMEs, there have been serious challenges related to poor performance due to lack of effective competitive strategies to compete with others. This happens mostly at the start-up period of their businesses which in fact resulted to decline of the business at the start-up level. However, while SMEs are of importance, a significant number of them-especially at a start-up- do not adapt to these, and as such must of them last no longer (Ilyasu et al., 2024). This statement is in concord with the statistics revealed by the United Nations Industrial Development Organization [UNIDO] (2017) that about 20% of SMEs survived beyond 5 years after starting a business in Nigeria.

On the other hand, even those herbal businesses that scaled through the start-up decline have failed their products in order to invite loyalty and retention. For instance, the way herbal medicines are handled and packaged by herbal business practitioners is worrisome. In some instances, herbs are prescribed and administered without any pack or container, which is in their bare or raw form. This could be an agent for widespread of other diseases because of bacterial transmission from one hand to another. This problem from lack of modern innovative strategies, effective managerial capabilities, and lack of adequate knowledge of handling herbs using protected safety equipment such as hand gloves and wrapping packs for safeguarding them from attacks bacteria and other microorganisms within the environment. Therefore, proper innovative ways are necessary in order to safeguard the lives of people who are consulting herbal practitioners for the sake of getting cured from several illnesses.

Similarly, packaging is another crucial element in herbal medicine industry is enhanced when some other factors are achieved. Firstly, proper packaging can lead to protection. Most of our herbal medicines are traditionally kept without proper packaging this makes some people herbal medicines for modern packaged drugs which are produced and well-sealed for life. Another thing is that proper packaging builds trust herbal medicine because the information being conveyed to the patient can easily attract attention and also place preference on drugs that are properly packed inside an attractive blister. Unlike herbs that are not properly packaged, perception, based on the information labeled, always those drugs as substandard or

even fake ones. In the third place, packaging assists in identifying how medicine is seen and evaluated by health authorities like National Agency for Foods, Drugs Administration and Control (NAFDAC) and other agencies that are saddled with the responsibility of monitoring and supervising how medicines are administered in Nigeria. Therefore, proper packaging of herbal medicines can be attributed to communicating the essential features of the herbs to the general public because of interconnectedness between the above factors and clients' personal hygiene for safeguarding the lives of humanity. On one hand, innovativeness is another icon of great importance to the performance of herbal medicine business practices because it is used in formulating new blends of herbs through combining or converting some formulae for producing another new drug for curing many illnesses in a modern perspective. In today's rapidly changing business environment, organisations face both opportunities and challenges arising from technological developments, changing consumer preferences, and evolving market conditions (Porath, 2023). Another advantage is that it helps in improving the process of formulation in production line. Process improvement is very important because it helps in simplifying and modernizing the way by which drugs are made for clients' use. Mindset is also another factor that can assist herbal medicine business practices easier and being unique from other competitors in the value chain. Furthermore, effective combination of packaging and innovativeness can be of pivotal significance on the performance of herbal medicine businesses because herbal medicines can be differentiated and in order for patients to consume and experience a hygienic condition as well. Studies such as Aldy et al. (2025) have confirmed the relationship between packaging and innovativeness on the performance of Micro, Small and Medium Enterprises, and as such this study selected one sector to expand knowledge from.

However, the issue of lack of packaging and poor innovative strategies has seriously affected the well-being of herbal medicine businesses in Gombe State, which could result high number of switches from herbal medicine practices to other sources of health facilities for satisfaction. At this juncture, this paper is established in order to examine how proper packaging and innovativeness can improve the performance of herbal medicine businesses in Gombe State, and recommendations on how to curb the problems being identified.

Problem Statement

The decline performance of small businesses including herbal medicine practice in Gombe State has been a worrisome issue among practitioners in the supply and value chains. This is due lack of adequate innovation and packaging of herbs, which from lack of competitive strategies that can contribute towards promoting their products from traditional phase to a modern one. Therefore, among the most common causes of this performance is lack of innovative strategies, as well as inadequate packaging of herbs in the product mix. Innovation is a core element that triggers the growth and development of small and medium enterprises which comprises herbal businesses, especially in midst of intense competition and technological advancement. According to United Nations Industrial Development Organization [UNIDO] (2017) about 20% of SMEs survived beyond 5 years after starting a business in Nigeria, Gombe State. This could be as a result of many factors including lack of innovative strategies put in place to attract customers to participate and have the product or service at heart (Ilyasu et al., 2024). Even though some small and medium enterprises including herbal businesses have failed and from early years of inception because they could not innovativeness which has been necessary for firms to adopt in order to succeed in business. Similarly, poor or lack of packaging is also another menace that contributes to failure in the performance of many herbal businesses. These issues create and suggest a wide

gap that calls for the importance of proper packaging and innovation in the field of herbal business practice, and so it is imperative for such businesses to apply them as they are by forgoing them. In real practice today, it is clearly experienced that there is rapid growth in the area of herbal medicine industry as a result of beliefs and customs improve the performance herbal medicine practice among people have no full access or privilege to approach modern health facility centres for medication. However, lack of packaging and innovation only hinder the standardization of herbal medicine also tarnish patients' trust the product as well as other competitors, who can use this pitfall to build their unique brand proposition instead.

Furthermore, in places like Gombe State, where there is high number of small and medium enterprises within the domain of both formal and informal sectors, a slight reduction in terms of poor rate of modernized technology together with lack of packaging, as well as inadequacy in herbs innovative formulation strategies can consequently undermine the progress and development of herbal medicine business, and so loss of profit turnover can be recorded due to overall clients patronage decline. Despite the fact that prior studies have contributed to literature in various aspects of innovation and the performance of SMEs; however, there is limited number of empirical that specifically focused on pooling together the variables used in this study, especially the chosen context. Therefore, the researcher found a gap which is needed to be filled by further studies. In line with this, the study deemed it necessary to contribute towards extending the body of knowledge due to incessant under-performance of herbal medicine businesses in Gombe State, which is centered on lack of proper packaging and innovativeness by investigating the effect of packaging and innovativeness on the performance of herbal medicine businesses in Gombe State.

Furthermore, several studies were conducted using either of the variables in different geographical locations for instance, the studies of Obadia & Vida (2024) used marketing strategy and performance as their variables of the study. They found that there was strong and positive relationship between Export Marketing Strategy and Performance. Another study was by Wu & Botella-Carrubi (2024). They empirically studied digital marketing strategy and Performance in SMEs as variables. The result of their study found that there was strong and positive relationship between digital marketing strategy and performance in SMEs. Similarly, Gutierrez-Broncano & Linuesa-Langreo (2024) embraced hybrid strategy and performance using innovation and adaptive capacity as mediating and moderating variables. The outcome of the study found that there was strong and positive relationship between hybrid strategy performance through innovation and adaptive capacity. Moreover, Ilyasu et al. (2024) examined innovation as moderating variable on competitive strategy and the performance of SMEs in Nigeria. Their study concluded that there is strong effect of innovation on the relationship between competitive strategy and the performance of SMEs in Nigeria.

In line with the above, innovation and performance of SMEs have been studied as variables of the studies in various fields of marketing management; however, a wide gap because there is need for incorporating packaging, innovation and performance of SMEs, especially in the sector of herbal medicine business in Gombe State. Therefore, this study fills the gap by assessing the effect of packaging and innovativeness on the performance of herbal medicine in Gombe State.

Research Questions

This study identifies lack of competitive strategies as one of the serious issues or problems facing herbal medicine sector particularly in Gombe State, Nigeria. In line with the problem at hand, the following are the research questions which the study is set to proffer to:

- i. How does packaging affect the performance of herbal medicine businesses in Gombe State?
- ii. To what extent does innovativeness affect the performance of herbal medicine businesses in Gombe State?

Similarly, to find the solutions to the above research questions, this study seeks some objectives that are necessary to be achieved; and, are thus:

Objectives of the Study

The aim of this study was to examine the effect of packaging and innovativeness on the performance of herbal medicine businesses in Gombe State. However, the specific objectives of the study were:

- i. To find out the effect of packaging on the performance of herbal medicine businesses in Gombe State.
- ii. To highlight the effect of innovativeness on the performance of herbal medicine businesses in Gombe State.

Besides, the above general and specific objectives can be attained if the following hypotheses for the study are properly formulated:

Research Hypotheses

H₁: Packaging has positive and strong effect on the performance of herbal medicine businesses in Gombe State.

H₂: Innovativeness has positive and strong effect on the performance of herbal medicine businesses in Gombe State.

Consequently, to achieve the above goal, the following significance to various segments in the herbal medicine industry:

Significance of the Study

This study is of great significance from the perspective of theoretical stance; it used the theory of Diffusion of Innovation in order to explore the effect and interconnectivity between packaging and innovativeness on the performance of herbal medicine businesses in Gombe State. Another significance of this study is empirical contribution. Most of the prior studies have investigated different product and service sectors such as hotels telecommunications companies, hospitals, and the like, but this study paid utmost attention herbal medicine, especially in Gombe State where the need for such studies is seriously demanded.

In terms of practical significance, findings of this study will be important to the practitioners of herbal medicine; entrepreneurs, as well as stakeholders in herbal medicine industry to serve as a framework for improving and sanitizing the production and handling herbal medicine as a contributor safeguarding the lives society in general. This study is significant to

and regulatory bodies in the sense that it will assist in highlighting guidelines and policies for standardizing and improving herbal medicine business in terms of packaging, quality improvement and practice license for practice approvals. This study can be of great relevance to future studies in paving way for building further studies by incorporating mediating and/or moderating variables to the variables of present study for the generality of the work.

Scope of the Study

This study examines the effect of packaging and innovativeness on the performance of herbal medicine in Gombe State. The content of this study has focused on the two key independent variables comprising packaging and innovativeness, and their effect on the dependent variable, which is the performance of herbal medicine businesses in Gombe State. Packaging is measured based on three proxies of: product protection; information; and visual appeal. Innovativeness is also measured using product innovation; process improvement; and creativity. Similarly, the dependent variable is also measured by three dimensions comprising sales growth; customer satisfaction; and market share.

Apart from content scope, the study is bordered by geographical scope which is vested Gombe State, Jewel in the Savannah, which is located in the northeastern geopolitical zone of Nigeria. The justification for choosing this dear state is that it is a location within the geopolitical zone in addition to its track record of peace and commercial hub for businesses which herbal medicine businesses. Another scope is that of unit of analysis which this study targeted only owners and/or managers of the registered herbal medicine businesses that are given mandate to operate within the domain of Gombe State. In terms of methodology, the study on quantitative research approach through issuing structured questionnaire means of primary data collection. Upon this mandate, the study employed SPSS 23.0 as tool of analysis. Time boundary is also an important in the study scope the work covered the period from 2025 to 2026.

LITERATURE REVIEW

Concept of Business Performance

Business Performance is an essential concept is viewed by different scholastic views for example; it is defined by Danjuma (2024) as a complex concept that takes into account several factors that indicate the viability, expansion, and success. Business performance has been defined as ability to survive, grow, provide employment and reduce poverty among Nigerians (Aminu, 2021). It is also defined as the improvement of production and products which is the point where the average cost curve is at minimal level for that particular product, given the optimal size of the firm (Ilyasu et al, 2024; Penrose, 1959). However, Ilyasu et al. (2024) argued that performance of Small and Medium Enterprises (SMEs) can be categorized as one of the major drivers of global economy today. Therefore, a paradigm shift from analogue to a digital world of technological phases has become mandatory achieve business success. In line with this, the company performance is often seen from three perspectives: (1) the company's financial performance which includes market performance such as profitability, growth, and customer satisfaction; (2) the process performance which refers to the quality and efficiency of the company; (3) the company's internal performance which refers to the individual capabilities of the company such as employee qualifications, employee satisfaction and creativity (Bismo et al., 2021). In this regard, this paper has

defined performance as an act of combining human effort and machinery by herbalists in order to achieve a stated objective.

Concept of Innovation

Innovation can be defined as the act of commercializing an invention. It is changing the norm and putting new ideas into practice (Julius & Daha, 2021). According to United Nations Industrial Development Organization [UNIDO] (2017) about 20% of SMEs survived beyond 5 years after starting a business in Nigeria. This could be as a result of many factors including lack of innovative strategies put in place to attract customers to participate and have the product or service at heart (Ilyasu et al., 2024). This is documented in such as (Gunta & Alias, 2014; Aminu, 2021). Besides, studies like that of (Aminu, 2021; Putra et al., 2020) have supported proposition that SMEs that engage in innovation activities perform better than those who do not. Therefore, innovation in SMEs is usually in form of product modifications and relies on how creative and innovative the owners and employees are (Harwiki & Malet, 2020). Based on the above definitions, innovation is seen by this paper as an ability to stand out competition through mounting additional entrepreneurial abilities and other unique strategies by herbal business practitioners.

Concept of Packaging

Packaging is also an essential concept in marketing management. It is therefore conceptualized as other variables which were discussed and documented by various scholars, it is conceptualized as a coordinated system of materials designed to prepare goods for transport, protection, storage, distribution, and presentation (Onyeaka & Nwabor, 2022). It is also postulated by Anorue & Eze (2022) that packaging has become central to the overall product concept. Saha (2022) stressed that packaging plays an important role enhancement of products. It provides many functions like protection, preservation, presentation, safety aspects, storage, distribution, logistics and supply chain, and information through proper labelling, branding and market promotion (Saha, 2022). Packaging is defined by this study as beautifying and improving the features of herbal medicine by designing an attractive and hygienic blister for the lives of the patients.

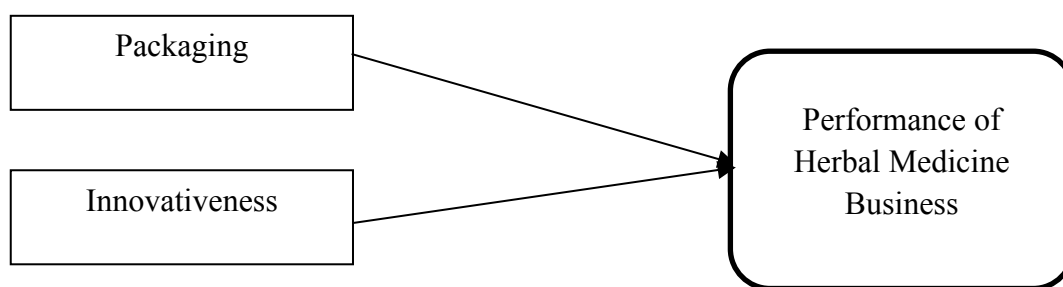


Figure 1: Conceptual Framework

Empirical Review

Authors have immensely contributed towards developing literature by documenting many studies relating to performance. Some of those studies are, for example, the work of Gryko et al. (2024) examined performance in corporate structure of Poland. The study revealed the significance of corporate structure of Poland. In another development, Wu & Botella-Carrubi (2024) studied performance in digital marketing strategy in Europe. The study found the

contribution of performance in SMEs in European countries. Thus, Gutierrez-Broncano & Linuesa-Langreo (2024) investigated hybrid strategy's SMEs performance in Brazil. The study disclosed the significance of hybrid strategy performance in Brazil. Similarly, Habtoor (2022) investigated bank performance in light of Saudi corporate governance regulations. The study revealed the contribution of bank performance to the economy of Saudi Arabia. In the context Africa, Adekunle et al. (2024) studied corporate performance in the Nigerian Oil and Gas Companies. Their study proved that corporate performance plays an important role in understanding board characteristics. Another study conducted by Ilyasu et al. (2024) investigated performance of SMEs in Nigeria. Their study concluded that performance is one of the significant drivers of SMEs in Nigeria.

From the above empirical studies, scholars have shown the importance of business performance in different areas of human endeavours. Even though the studies of (Gryko et al., 2024; Wu & Botella-Carrubi, 2024; Gutierrez-Broncano & Linuesa-Langreo, 2024; & Habtoor, 2022) were on performance, they focused attention on countries like Poland, Brazil, Saudi Arabia and other European countries but not in Nigeria. Despite the importance of business performance in Nigeria, there is utmost need for such studies to be conducted in Nigeria. Although there are some studies that were conducted such as that of Adekunle et al. (2024) that studied and confirmed the relevance of corporate performance in Nigerian Oil and Gas Companies. Additionally, Ilyasu et al. (2024) investigated and concluded the contributions of performance of SMEs in Nigeria's online business sector.

However, all these studies established the importance of performance, but there are few studies on the concepts of packaging and innovation in herbal medicine. Moreover, there is still need to incorporate herbal medicine businesses in terms of packaging and innovativeness especially in Gombe State; therefore, this study filled this gap by examining the effect of packaging and innovativeness on the performance of herbal medicine in Gombe State.

Theoretical Review

This study is anchored on the Diffusion of Innovation (DOI) theory to explain how packaging and innovativeness may influence the performance of herbal medicine businesses in Gombe State. Diffusion of Innovation Theory was by Rogers (2003) Diffusion of Innovation Theory explains how new ideas and technologies spread within a social system over time. Applying this theory as underpinning theory of this study can be of great significance because it would shape the mindset of herbal business owners to transform from traditional mode to a modern and technological phase. It highlights factors such as relative advantage, compatibility, complexity, trainability, and observable ideas that influence the acceptance and effective utilization of technological innovations. This theoretical lens informs the design and deployment strategy, ensuring that technological solutions are not only technically sound but also institutionally viable. However, it might be argued that in the theory of diffusion of innovation viewpoint and the technological adoption model are not explicitly interconnected, although they do exhibit certain fundamental characteristics in common (Oluwafemi & Bello, 2024), this study finds it necessary to employ it as an underpinning theory because most of the herbal medicine practitioners within Gombe State do not modernize their products as a means of achieving differentiation strategy among their competitors; thus by adopting this theory, it can be a tool for motivating them to acquire and adopt modern innovative strategies differentiate themselves among others.

METHODOLOGY

The objective of this study is to investigate the effect of packaging and innovativeness on the performance of herbal medicine businesses in Gombe State. The chapter explains the design of the study, population of the study, sample size, sampling procedure, method of data collection instrument used for data collection, as well as ethical considerations.

Research Design

This study adopted survey research design was used to examine the effect of packaging and innovativeness on the performance of herbal medicine businesses in Gombe State. Doing this can give the researcher room for answering the research questions as well as achieving the general and specific objectives stated earlier in the research. Therefore, the correlation research design was used to investigate the link and relationship between variables of interest without any intervention from the researcher (Williams et al., 2022). Typically, a correlation reveals the strength and/or direction of the relationship between two or more variables, which could be either positive or negative (Walker, 2005). Viewing and understanding this idea thoroughly, present study initiated a conceptual framework model for the effect of packaging and innovativeness on the performance of herbal medicine businesses in Gombe State.

Population of the Study

The population of this study contained the entire registered owners and managers of herbal businesses within Gombe State of Nigeria in order to serve as the unit of analysis in this research study. The number of registered owners of herbal businesses within Gombe State is exactly 100 (Gombe State Ministry of Health, 2024).

Sample Size

The sample size was based on Yamane's formula for sample size determination. The formula is thus:

$$n = N / [1 + N (e^2)]$$

n = Sample size

N = Population of the study

1 = Mathematical constant

e = Error limit (5% or 0.05)

Using Yamane's formula, $n = N / [1 + N (e^2)]$, where $N = 100$ and $e = .05$, the sample size is $n = 100 / [1 + 100(.05^2)] = 100 / 1.25 = 80$ respondents. Therefore, the calculated sample size for the study is 80 respondents.

Sampling Techniques

In an attempt to obtain proper and available responses, the study employed different sampling techniques. This is however, apparent in obtaining responses from available customers based on online basis. The reasons why snowballing and purposive techniques were chosen are as follows: snowballing method was applied because accessing those respondents due to their nature and variability could be a very difficult task, but by referral means of locating them,

this served as easy linkage and identification. Besides, purposive sampling was also chosen as the technique for data collection because the study has focused on only one aspect that has commonest feature as its units of analysis.

Method of Data Collection

This study used primary of data. Primary data was used in order to obtain the responses of the owners and/or managers of herbal businesses within Gombe State using a structured questionnaire. In this study, primary data was used in testing hypotheses and achieving research objectives. However, the study used 5 likert scales ranging from 1-5 score rating, which was designed to test the attitudes of the respondents on the variables that indicate the sharpness of their tendency to agree or disagree with the statement using 1= strongly disagree, 2= disagree, 3= moderately agree, 4= agree, and 5= strongly agree.

Instrument of Data Collection

The primary purpose of this research has been to examine the effect of packaging and innovativeness dimensions and the performance of herbal medicine businesses in Gombe State. Since the purpose is descriptive, the best possible strategy for collecting the study data is a questionnaire; instruments were picked directly from existing models and studies in order to assess the effect of the independent variables on the dependent variable. Packaging and innovativeness were operationalized by adapting a representative approach of items related to three variables of the study.

Table1: Variable Identification and Measurement

S/No.	Variable	Measure	Item
1.	Packaging	Durability	Packaging is durable during transportation.
2.		Instructive usage	Packaging provides clear usage instructions.
3.		Attractiveness	Our packaging design is visually attractive.
4.		Attractiveness	Packaging color influences purchase decisions.
5.		Aesthetics	Packaging differentiates our product from competitors.
6.	Innovativeness	Uniqueness	We frequently introduce new herbal products.
7.		Improvement	We improve existing herbal formulations regularly.
8.		Creativity	Our products incorporate new ingredients or techniques.
9.		Responsiveness	We respond quickly to changes in customer needs.
10.		Differentiation	We use improved production methods.

11.	Performance	Return on investment	Our return on investment is strong.
12.		Market share	Our market share has increased.
13.		Customer patronage	Customer patronage has improved.
14.		Long term relationship	We attract new customers consistently.

RESULT AND DISCUSSION

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error	F	Sig.
1	0.749 ^a	0.560	0.488	0.747	7.740	0.000

a. Predictors: (Constant), BPF7, INN1, PKG5, INN2, INN4, BPF6, INN5, PKG3, PKG6, INN3, BPF5, PKG7, BPF4, PKG4.

b. Dependent Variable: Business Performance

The model summary of packaging and innovativeness explained that the R^2 value was achieved at 56% in the performance of herbal medicine businesses. The overall model is statistically significant because $p = 0.000$ which is less than the threshold value significance at 0.005. This simply means that the performance of herbal medicine businesses can be explained by variations in independent variables by 44% in order to achieve the effect of the variables under study.

Table 3: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	60.522	14	4.323	7.740	.000
Residual	47.478	85	.559		
Total	108.000	99			

a. Dependent Variable: Business Performance

b. Predictors: (Constant), BPF7, INN1, PKG5, INN2, INN4, BPF6, INN5, PKG3, PKG6, INN3, BPF5, PKG7, BPF4, PKG4.

The ANOVA table above explained the simultaneous effect of the entire independent variables on their corresponding dependent variable as 7.740 and a significance level at 0.000, which means that the independent variables (packaging and innovativeness) have positively affected the dependent variable (Business Performance) simultaneously.

Table 4: Reliability Statistics

Variable	No. of Items	Cronbach's Alpha	Evaluation
Packaging	5	0.917	Excellent

Innovativeness	5	0.867	Excellent
Business Performance	4	0.892	Excellent

Table 4 above has revealed that the alpha of 14 items in the model, with which it achieved a good reliability level as recommended by Awang et al. (2023). Therefore, the model is suitable for analysis.

Normality Test

This study has conducted multicollinearity test using Mahalanobis Distance Assessment, and the result was shown in table 4 as indicated below:

Table 5: Normality Test Table

S/No.	Constructs	Tolerance	VIF
1.	PKG3	0.367	2.724
2.	PKG4	0.177	5.655
3.	PKG5	0.266	3.757
4.	PKG6	0.205	4.867
5.	PKG7	0.208	4.812
6.	INN1	0.346	2.887
7.	INN2	0.302	3.307
8.	INN3	0.303	3.295
9.	INN4	0.366	2.736
10.	INN5	0.255	3.929
11.	BPF4	0.199	5.036
12.	BPF5	0.259	3.867
13.	BPF6	0.344	2.909
14.	BPF7	0.235	4.263

Source: (SPSS, 23.0)

From the result presented in table 4 above, it indicated that all the items in this study have achieved threshold values for both Tolerance and Variance Inflation Factor (VIF) as recommended by Awang (2023). Therefore, all the constructs are free from multicollinearity issues.

Hypotheses Testing

Hypothesis 1: Packaging has a positive and significant effect on the performance of herbal medicine businesses in Gombe State

Table 6: Packaging Coefficients Table

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.018	.421		2.417	.018
PKG3	-.023	.120	-.020	-.190	.850
PKG4	.107	.154	.090	.693	.490
PKG5	1.121	.153	.906	7.351	.000
PKG6	-.231	.180	-.159	-1.281	.203
PKG7	-.300	.189	-.197	-1.586	.116

a. Dependent Variable: Performance

From the result above, it is clearly shown that packaging (PKG) has a t-value of 2.417 and a significant value of 0.018. This concluded that the above hypothesis is rejected, and has gone contrary to the findings of Wu & Botella-Carrubi (2024), who confirmed the existence of this relationship in their study. However, there might be causative factors such as: belief and cultural practices which could affect patients in choosing drugs without considering how those drugs are well packaged because of their belief on traditional medication system especially in rural areas of Gombe State.

Hypothesis 2: Innovativeness has a positive and significant effect on the performance of herbal medicine businesses in Gombe State

Table 7: Innovativeness Coefficients Table

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.706	.630		5.886	.000
INN1	-.119	.214	-.084	-.555	.580
INN2	-.057	.210	-.040	-.270	.788
INN3	.083	.206	.067	.404	.687
INN4	.185	.214	.115	.866	.389
INN5	-.190	.213	-.138	-.890	.376

a. Dependent Variable: Performance

From the result above, it is clearly shown that innovativeness (INN) has a t-value of 5.886 and a significant value of 0.000. This concluded that the above hypothesis is accepted as it is line with the findings of Ilyasu et al. (2024), who concluded that there is a positive and significant relationship between innovativeness and business performance. This explains that herbal medicine businesses have paid attention to exploring innovative ways of handling and making patients loyal always.

Table 8: Hypotheses Summary

IV	DV	Beta Value	T-Statistics	P-Value	Decision
Packaging	Performance	1.018	2.417	0.018	Rejected
Innovativeness	Performance	3.706	5.886	0.000	Accepted

CONCLUSION

This study was conducted in order to examine the effect of packaging and innovativeness on the performance of herbal medicine businesses in Gombe State. The methodology used was quantitative research design. It was found that packaging has positive and insignificant effect on the performance of herbal medicine businesses in Gombe State. On one hand, innovativeness has positive and significant effect on the performance of herbal medicine businesses in Gombe State. The study concluded that the performance of herbal medicine would be improved in Gombe State if proper packaging and innovative strategies are put in place for business growth and expansion.

Recommendations

This study was established curb the menace of poor packaging and innovativeness among herbal medicine the following points are recommended:

- i. Herbal medicine practitioners should participate in relevant training and workshops on hygienic production, product handling, packaging, labelling, and quality improvement.
- ii. Herbal medicine practitioners should adopt and improve timely and market-oriented innovative strategies that can differentiate their products as well as improving customer patronage.

However, this study achieved 56% as joint contributions of independent variables to the dependent variable; therefore, further studies should use the remaining 44% to test the relationship between packaging and innovativeness on the performance of herbal medicine business using other variables such as competitive strategy.

Managerial Implication

The findings have practical implications for herbal medicine practitioners and other stakeholders in Gombe State. First, practitioners should treat packaging as part of product quality and customer assurance rather than merely as an aesthetic activity. Appropriate packaging can protect products, communicate relevant information, improve hygiene, and strengthen customers' confidence. Second, practitioners should improve innovative approaches to product presentation, formulation, processing, and customer engagement so that their businesses can differentiate themselves in a competitive market. Finally, regulatory and professional stakeholders can use these findings to encourage better packaging and innovation practices within the herbal medicine sector.

Similarly, maintaining adequate packaging and innovativeness can stimulate the effectiveness of the herbal medicine business which can assist in protecting the lives of people. Besides, most of the patients quit herbal medicines because of improper packaging as they are always kept without being put in packs. However, using the recommendations proffered by this study

could serve as a tool for transforming the business to a modern practice through which patients would patronize and retain as loyal clients.

Theoretical Implication

This study has contributed immensely in enlarging the theoretical underpinnings through embracing the theory of Diffusion of Innovation upon combined concepts of packaging and innovativeness on the performance of herbal medicine as a theoretical novelty that can boost extant body of knowledge.

Acknowledgments

The author has heartily acknowledged the Tertiary Education Trust Fund (TETFund) for the golden opportunity given in funding this research as constituted in the 2026 IBR Award Letter with Reference No. TETF/DR&D/CE/POLY/BAJOGA/IBR/2026/VOL. 1. Special regards and appreciation are also extended to the Rector, the Management, and the Directorate of Research and Development of Gombe State Polytechnic for their invaluable institutional support, guidance, and unwavering commitment to the promotion of academic research. Their support was really in the successful completion of this study.

REFERENCES

- Adekunle, S. A., et al. (2024). Board Characteristics and Corporate Performance: Evidence from the Nigerian Oil and Gas Companies. *Oradea Journal of Business & Economics*, 9(1).
- Aldy, et al. (2025). The Effect of Product Packaging Innovation, Branding, and Technological Capability on MSMEs Performance: A Case Study of Fresh Noodle Producers in the Residency. *Indonesian Journal of Business & Entrepreneurship*, 11(1).
- Aminu, M (2021). Mediating Role of Innovation on the Relationship between Social Capital and SMEs Performance in Nigeria: A Proposed Framework. *Creative Business Review Journal*, 1(1).
- Anorue, I., & Eze, C.O. (2022). Packaging as an Index of Quality. *International Journal of Research in Arts & Social Sciences*, 1(135).
- Awang, Z. (2023). SEM Made Simple 2.0. A Gentle Approach of Structural Equation Modelling. Penerbit Universiti Sultan Zainal Abidin Kuala Nerus. www.penerbit.unisza.edu.my.
- Bazazo, I.K., & Alananzeh, O.A. (2022). Applications of Digital Models in integrated management in smart tourist cities: Aaba city of Jordan as a case study. *Geo Journal of Tourism & Geosites*, 40(1).
- Bismo, A., et al. (2021). Knowledge Management Strategy, Innovation, and Performance in Small Business Enterprise in Indonesia. *The Winners*, 22(1).
- Danjuma, A. M., Musa, B. M. & Bala, A. (2024). Government Funding Programs, Entrepreneurial Capability, and the Performance of Micro, Small, and Medium Enterprises (MSMEs): A Conceptual Framework. *Creative Business Research Journal* 4(1).
- Ghozali, I. (2018). Aplikasi Analisis Multivariate dengan Program IBM SPSS 25. Semarang: Badan Penerbit Universitas Diponegoro.
- Gryko, A., et al. (2024). Ownership Structure and Firm Performance. A Panel Regression Study from Poland. *Central European Journal of Economic Modelling and Econometrics*, 25-60.

- Gunto, M., & Alias, M.H. (2014). The Impact of Networking on the Ability to Access Financial Government Support in Malaysia. *South-east Asia Journal of Contemporary Business, Economics & Law*, 5(3).
- Gupta, A., Raman, K., & Shang, C. (2019). Do Informal Contracts Matter for Corporate Innovation? Evidence from Social Capital. *Journal of Financial and Quantitative Analysis*, 2019.
- Gutierrez-Broncano, S., & Linuesa-Langreo, J. (2024). Can Hybrid Strategy Improve Performance? The Role of Innovation and Adaptive Capacity. *European Journal of Innovation*, 2024.
- Habtoor, O.S. (2022). Board Attributes and Bank Performance in Light of Saudi Corporate Governance Regulations. *Journal of Risk Financial Management*, 15(10).
- Harwiki, W., & Malet, C. (2020). Quintuple Helix and Innovation on Performance of SMEs as a Mediator Variable: A Comparative Study of Creative Industry in Indonesia and Spain. *Management Science Letters*, 10(1).
- Ilyasu, H., Idriss, Y., Mohammed, A., & Hussaini, H.B. (2024). Mediating Effect of Innovation on the Relationship between Competitive Strategy and the Performance of Small and Medium Enterprises in Nigeria: A Review. *Creative Business Review Journal*, 4(2).
- Julius, P. E., & Daha, T. A. (2021). Effect of Innovative Leadership on Salesmen Performance in the Fast-Moving Consumer Goods in Lagos State, Nigeria. *Creative Business Research Journal*, 1(2).
- Obadia, C., & Vida, I. (2024). Export Marketing Strategy and Performance: A Focus on SMEs Promotion. *International Business Review*, 2024.
- Oliver, R. L. (1980). A Cognitive Model of the Antecedents & Consequences of Satisfaction Decisions. *Journal of Marketing Research*, 17(4).
- Oluwafemi, T., & Bello, A. (2024). Effect of Technology Innovation on New Product Development in Selected Marketing Companies in Abuja. *Creative Business Research Journal*, 4(1).
- Onyeaka, H.N., & Nwabor, O.F. (2022). Natural Active Components in Smart Packaging System. *Food Preservation and Safety of Natural Products*, 2022.
- Porath, U. (2023). Advancing Managerial Evolution and Resource Management in Contemporary Business. *Modern Economy*, 14(10).
- Saha, N.C. (2022). Food Packaging: Concepts and its Significance. In: *Food Packaging. Lecture Notes in Management and Industrial Engineering*. Springer, Singapore. https://doi.org/10.1007/978-981-16-4233-3_1
- UNIDO. (2017). 20% of SMEs Manage to Survive in Nigeria. United Nations Industrial Development Organization.
- Vargo, S. L. & Lusch, R. F. (2004). 'Evolving to a New Dominant Logic for Marketing', *Journal of Marketing*, 68(1).
- Venkatesh, V. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 425-478.
- World Bank (2026). Report for Global and Regional Economic Development. <https://worldbank.org/ext/en>
- Wu, C.W., & Botella-Carrubi, D. (2024). The Empirical Study of Digital Marketing Strategy and Performance in SMEs. *Forecasting & Social Management Journal*, 2024.
- Yuvaraj, et al. (2021). Advances in Bio Food Packaging- An Overview. *Heliyon Research Journal*, 7(9).

APPENDIX

Appendix A: Model Summary

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.749 ^a	.560	.488	.747	.560	7.740	14	85	.000

a. Predictors: (Constant), BPF7, INN1, PKG5, INN2, INN4, BPF6, INN5, PKG3, PKG6, INN3, BPF5, PKG7, BPF4, PKG4

b. Dependent Variable: Performance

Appendix B: ANOVA

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	60.522	14	4.323	7.740	.000 ^b
	Residual	47.478	85	.559		
	Total	108.000	99			

a. Dependent Variable: Performance

b. Predictors: (Constant), BPF7, INN1, PKG5, INN2, INN4, BPF6, INN5, PKG3, PKG6, INN3, BPF5, PKG7, BPF4, PKG4

Appendix C: Reliability Statistics

Reliability Statistics

Cronbach's Alpha	N of Items
.917	5

Reliability Statistics

Cronbach's Alpha	N of Items
.876	5

Reliability Statistics

Cronbach's Alpha	N of Items
.892	4

Appendix D: Normality Test

Coefficients ^a								
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics		
	B	Std. Error	Beta			Tolerance	VIF	
1	(Constant)	.454	.939	.483	.630			
	PKG3	-.031	.138	-.027	.228	.367	2.724	
	PKG4	.298	.203	.251	1.467	.177	5.655	
	PKG5	1.066	.173	.862	6.181	.266	3.757	
	PKG6	-.412	.230	-.284	-1.789	.205	4.867	
	PKG7	-.225	.240	-.148	-.936	.208	4.812	
	INN1	-.039	.172	-.028	-.227	.346	2.887	
	INN2	-.119	.188	-.083	-.635	.302	3.307	
	INN3	.116	.161	.094	.717	.303	3.295	
	INN4	-.190	.192	-.117	-.987	.366	2.736	
	INN5	.224	.196	.163	1.142	.255	3.929	
	BPF4	.234	.222	.170	1.054	.199	5.036	
	BPF5	-.093	.135	-.098	-.694	.259	3.867	
	BPF6	.128	.153	.103	.837	.344	2.909	
	BPF7	-.109	.200	-.081	-.547	.235	4.263	

a. Dependent Variable: Performance