CORPORATE FAILURE: ARE LISTED FIRMS IN NIGERIA ON THE VERGE OF DEMISE? ANALYSING SELECTED FOOD AND BEVERAGES FIRMS USING AND GROVER'S MODEL SPRINGATE'S MODEL

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ABSTRACT

This study is "corporate failure: are listed firms in Nigeria on the verge of demise? Analyzing selected food and beverages firms using Springate's model and Grover's models". The study adopted a quantitative research design in which Twenty (20) listed Food and Beverage (Consumer Goods) firms on the Nigeria Stock Exchange as of December 2021 serve as the population. Using the purposive sampling technique, eight (8) firms will be selected. The secondary data was used and were extracted from the annual reports on NGX, the website, and publications reflecting the financial statements of the chosen firms for ten years period (2011-2020). The finding shows that the Springate model (Z score) shows that three out of eight Food and Beverage listed firms in Nigeria were financially healthy while the remaining five were financially distressed. Grover's model (S score) revealed that seven out of eight Food and Beverage listed firms in Nigeria were financially sound and healthy. Therefore, it was concluded that the Grover model is more efficient and accurate in proving the financial soundness of firms. In addition, Food and Beverage listed firms in Nigeria are not on the verge of demise using the Springate Model, while Food and Beverage listed firms in Nigeria are on the verge of demise using the Grover Model. It was recommended that the management of Food and Beverage listed firms in Nigeria should adopt the Grover model to avoid or minimize the risk of being de-listed from Nigeria Exchange Group, among others.

Keywords: Corporate Failure, Financial Distress, Food and Beverages, Springate Model, Grover Model.

INTRODUCTION

The sustainability and viability of countries in the world majorly depend on the activities of firms, (Uchenna & Okelue, 2012). Many firms are set up to marshal resources toward providing goods and services to people for improvement in the domestic economy (Gross Domestic Product) and other macro-economic objectives. It is a gainsay thatfirms have been contributing immensely to the economic growth and development of countries over the world especially in this 21st century (Bamidele et al., 2019). Theeerefore, the survival and perpetual existence of firms are important not only to the owners but to the economy at large. A firm is an entity which is formed and administered as per corporate law to engage in business activities, charitable work, or other activities allowable. According to (Uchenna & Okelue, 2012) it is

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imperative to control the number of firms that fail in other to guarantee sustainable economic growth. Therefore, the roles of firms in any economy cannot be overemphasized.

One of the many objectives of most firms, irrespective of their size or nature of operation in this 21st-century dynamic business environment, it is growth and survival (Bamidele et al., 2019). Recently, significant problems for both practitioners and management relate to the principles which determine corporate successes and failures; that is why some firms grow, and others fail, (Abe, 2012). According to Beaver (1966), operationally, a firm has failed if any of the followings are present; bond default, bankruptcy, an overdrawn bank account, or non-payment of the preferred stock dividend. Corporate failure is the inability of the firm to align itself with the path of growth and development to achieve financial and economic objectives as well as its legal obligations, (Mbat & Eyo, 2013). The failures of firms in any economy harm the economic activities in the country. Taking example in the financial sector, Abdulraheem (2020) opined that failures in the banking sector could trigger a systemic problem in the financial system and add to the prevailing crisis in the Nigerian economy. Therefore it is appalling that financial institutions failure is more prominent. However, the truth is that manufacturing firms have failed more than banking institutions (Uchenna & Okelue, 2012). From the foregoing, Food and Beverage firms as manufacturing firms, continuous failure is not a good omen in any economy; it stifles the availability of goods and services through production, unemployment, and other macroeconomic objectives in the country.

The failure of Food and Beverage firms in Nigeria can be attributed to various factors. The volatility of the Nigerian economy over the years has not helped matters when it comes to the growth and survival of firms. According to Aliyu (2019) it was opined that Niigerian economy is volatile and plugged into recession in 2016, given the negative Gross Domestic Product (-1.6%). This result from many economic indicators, notably the fall in oil prices and production in the country. There was a significant fall in crude oil production in the third quarter of 2016 from 2.05million barrels in 2015 to 1.61million barrels (Nigeria Bureau of Statistics [NBS], 2020). As a monolithic economy, the crisis in the oil sector dampens the economy. It harms non-oil sectors in the economy through foreign exchange channels (Abdulraheem, 2020), high cost of doing business, high degree of financial, operating and credit risks, infrastructural decay, and market failure as a result of the uncoordinated microeconomic system. In addtion, Covid-19 padenmic that broke out recently caused many businesses into reduced working capacity, and some have vacated the market. Nwokocha et al. (2021) stated that the outbreak of the Covid-19 pandemic had caused stagnation in various sectors of the economy, the threat of economic recession, loss of jobs and unemployment, and above all, annihilated industries around the world. The spread of covid-19 is causing distribution in businesses and society in Nigeria and globally (KPMG, 2020). The impact of this virus on the economy has forced many firms to either scale down their operations or cease (Aydin & Ari, 2020).

More so, there are other factors which corporate failure may be attributed to such as; the absence of managerial wisdom, knowledge, creativity, and innovation that could spur or lead to the continued survival of firms, the inability of the firm's management to meet market demand, and competitors' pace, poor coordination of business activities, misalignment of corporate strategy, poor working capital management (Muhammad et al., 2015), among others.

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From the preceding, it expeident that firms do fail. Different studies on corporate failure have been carried out in Nigeria using various corporate failure Multivariate Discriminant Analysis (MDA) models such as; Altman Model developed in 1968, Springate model in 1978, Grover model in 2001, Zmijewski model in 1983 and Bankometer model, etc. in the literature, only few or no study has been carried out to ascertain the imminent corporate failure among Food and Beverage listed firms in Nigeria using Springate and Grover Model (Aliyu, 2022).

Thus, the objective of this study is, therefore

I. To critically analyze Food and Beverages listed firms in Nigeria's corporate failure position to show whether the firms are on the verge of demise.

II. To identify the best corporate failure prediction model between the Springate and Grover model for Food and Beverages listed firms in Nigeria.

The Null Hypotheses of the Study are

H_{01}: Food and Beverage listed firms in Nigeria are not on the verge of demise using the Springate Model.

The Food and Beverage listed firms in Nigeria are not on the verge of demise using Grover Model.

LITERATURE REVIEW

Concept of Corporate Failure

Corporate failure is a phenomenon where the firm cannot continue to operate or uphold its going concern prospect. Liu & Wilson (2000) stated that corporate fails when a well-functional and competitive economy forces out inefficient enterprises. Thus, in a robust economic situation, many firms cannot marshal the positivity in the economy to build on their financial stability.

Brabazon described corporate failure as an essential part of the economy that allows the recycling of capital and human resources to firms capable of making products of the resources. Firms that are not productive and efficient lose their human resources and other resources to more efficient firms that can make effective use of them. Corporate failure is the inability of the firm to align itself with a path of growth and development to achieve financial and economic objectives as well as its legal obligations (Mba & Eyo, 2013).

Abe (2012) sees corporate failure as a situation where the firm is so poor thereby sooner or later, shut down operations, voluntarily liquidate or has already stopped operations. When firms cannot perform their primary objectives any longer, or the prospect indicates that the firm could no longer be able to deliver to meet expectations, such firms are termed failed. Therefore, corporate failure has significant effects on stakeholders, shareholders, management, employees, customers, creditors, and other beneficiaries. Thus corporate failure is a catastrophe it challenges the social, and economic activities of a country.

Empirical Studies

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Kiyak & Labanauskaite (2012) examined the relationship between financial ratios and bankruptcy prediction models: Altman (1968); Springate (1978); Zavgren (1985), and Chesser (1974). Data for the study were collected from companies in Lithuania from 2006 to 2010 and were analyzed using ratios and models. There were imminent bankruptcy among the selected companies, and the Altman model a higher bankruptcy prediction ability.

(Talebnia et al., 2016) in their study, evaluated and compared the ability to predict the bankruptcy prediction models of Zavren and Springate in companies accepted on the Tehran stock exchange. Data were gathered from 2009 to 2013 using statistical techniques of logit and Multiple Discriminant Analysis (MDA). The result shows imminent failure among the selected companies, and Springate model is more efficient in predicting bankruptcy than the Zavren model. They recommended that decision can be made from the outcome of bankruptcy prediction.

Indriyanti (2019) investigated the accuracy of financial distress prediction models of the world's 25 biggest Tech companies in 2015-2016 Forbes's version. The sample was 30 tech companies, and a seven predictors model was used. The study found that the Grover model was the most accurate of all models and predicted bankruptcy of the selected companies with 96.6% accuracy.

Uchenna & Okelue (2012), in their study concerning predicting corporate business failure in the Nigerian manufacturing industry, where employed ratio analysis and Multivariate Discriminant Analysis Model in predicting and detecting a corporate collapse in the manufacturing industry and other sectors in Nigeria using (11) sample, comprises of manufacturing, oil marketing and conglomerates sectors for five (5) years, (2000-2004). They found that MDA is a viable tool for assessing financial stability of Nigerian firms because it has higher prediction power than the set of ratios. MDA also shows the impending failure of corporates within two years before actual loss.

METHODOLOGY

This study adopted a quantitative research design as the analysis depends on historical information. The population of this study comprises twenty (20) listed Food and Beverages (Consumer Goods) firms on the Nigeria Exchange Group as of December 2021. Adpoting purposive sampling technique, eight (8) firms will be selected as sample of the study. These firms were chosen as sample because of the availability of data. This study uses secondary data. Thus, data were collected from annual reports on NGX, websites, and publication reflecting the financial statements of the selected firms for ten years (2011-2020).

1. Cadbury Nigeria Plc
2. Champion Brewery Plc
3. Dangote Sugar Refinery Plc
4. Flour Mills Nigeria Plc
5. Nestle Nigeria Plc
6. Unilever Nigeria Plc
7. Honeywell Flour Plc
8. Nigerian Brewery Plc

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Springate's Model

Z = 1.3A + 3.07B + 0.66C + 0.4D
Where:
Z = Corporate Failure
A = Working Capital / Total Assets
B = Earnings Before Interests and Taxes / Total Assets
C = Earnings Before Taxes /Current Liabilities
D = Sales/ Total Assets
Z- score < 0.862, the firm is bankrupt

Grover's Model

G-score = 1.650X1 + 3.404 X3 + 0.016ROA + 0.057
Where:
G-Score = Corporate Failure
X1 = Working Capital / Total Assets
X3= Earnings Before Interests and Taxes / Total Assets
ROA = Net income / Total Assets
G- score < -0.02, the firm is bankrupt

FINDINGS AND DISCUSSION

The study use Eight (8) food and beverages firms in Nigeria. Below are the findings after computing the corporate failure models of both Springate and Grover.

Table 1
SPRINGATE MODEL COMPUTATION

Years	CHB	CAD	FLM	DGT	NST	HNW	UNL	NGB
	Z.Score	Z.Score	Z.Score	Z.Score	Z.Score	Z.Score	Z.Score	Z Score
2011	-2.32	1.213	1.242	1.766	1.653	1.638	0.879	1.477
2012	-2.675	1.437	1.036	1.954	2.05	0.563	0.74	1.338
2013	-2.656	1.317	0.761	2.83	1.7	0.482	0.912	1.315
2014	-0.335	0.579	0.936	3.697	1.581	0.251	0.355	0.979
2015	0.14	0.699	0.638	1.72	1.248	0.122	0.277	0.545
2016	0.531	0.358	0.648	1.232	0.733	0.06	0.4	0.572
2017	0.681	0.628	0.317	1.966	1.971	0.324	1.32	0.703
2018	0.34	1.002	0.817	2.579	2.112	0.398	1.26	0.562
2019	0.524	1.041	0.207	1.737	2.001	0.119	1.148	0.457
2020	0.444	1.044	0.874	1.214	1.395	0.116	1.058	0.1

Author's Computation, 2022.

From the above computation of Springate's corporate failure prediction model, the formality is that if the Z- score < 0.862, the firm is bankrupt, and if the Z- score > 0.862, the firm is healthy and financially sound to carry on with its businesses. The Z-scores for Champion

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Brewery Plc from 2011 to 2020 were all less than 0.862, and thus Champion Brewery Plc has been financially distressed over the years. Cadbury Nigeria Plc was healthy from 2011 to 2013, and from 2014 to 2017 was financially distressed. However from 2018 to 2020, Cadbury Nigeria Plc was healthy and financially sound. Flour Mills Nigeria Plc was healthy in 2011, 2012, 2014, 2018, and 2020 as the Z-score was more outstanding than 0.862. Dangote Sugar Refinery Plc was financially sound and healthy from 2011 to 2020.

In addition, Nestle Nigeria Plc was only not financially healthy in 2016. Honeywell Flour Plc was only financially sound in 2011 and financially distressed from 2012 to 2020. Unilever Nigeria Plc was financially troubled in 2012, 2014, 2015, and 2016 only. Finally, Nigerian Brewery Plc was financially troubled from 2015 to 2020 within the years under study.

Table 2
GROVER'S MODEL COMPUTATION

Years	CHB	CAD	FLM	DGT	NST	HNW	UNL	NGB
	S.Score	S.Score	S.Score	S.Score	S.Score	S.Score	S.Score	S Score
2011	-2.693	0.797	0.514	1.147	0.794	0.729	0.32	0.715
2012	-3.176	1.032	0.611	1.367	1.031	0.038	0.016	0.61
2013	1.165	1.083	0.46	1.44	0.993	0.147	0.24	0.614
2014	-0.076	0.13	0.512	3.448	0.975	0.28	-0.216	0.054
2015	-0.007	0.252	0.341	1.249	0.457	-0.205	-0.252	0.085
2016	0.262	0.021	0.291	0.896	0.269	-0.285	-0.019	0.234
2017	0.345	0.217	0.397	1.421	1.068	0.03	1.09	0.17
2018	-0.044	0.493	0.396	1.466	1.188	0.113	1.057	0.042
2019	0.297	0.525	0.245	1.379	1.155	-0.074	0.942	0.031
2020	0.127	0.082	0.36	0.787	0.812	-0.107	0.888	-0.253

Author's Computation, 2022

Table 2 above shows the computation of Grover's corporate failure on listed Food and Beverage firms in Nigeria. If the G- score < -0.02, the firm is bankrupt and if greater than -0.02, the firm is healthy. From the table above, Champion Brewery Plc was distressed in 2011, 2012, 2014, and 2018 from the study periods. Cadbury Nigeria Plc, Flour Mills Nigeria Plc, Dangote Sugar Refinery Plc, and Nestle Nigeria Plc were all financially healthy from 2011 to 2020.

In addition, Honeywell Flour Plc was not financially sound and healthy in 2015, 2016, 2019, and 2020. Unilever Nigeria Plc was financially distressed in 2014 and 2015 only. Finally, Nigerian Brewery Plc was financially distressed only in 2020 within the years under study (Springate, 1978).

Table 3
RANKING OF FIRMS BASED ON FINANCIAL SOUNDNESS (SPRINGATE MODEL)

Firms	Z-score	Remarks	Ranking
Champion Brewery Plc	-0.5452	Financially Distress	8th

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Cadbury Nigeria Plc	1.0318	Healthy	3rd
Flour Mill Nigeria Plc	0.7476	Financially Distress	6th
Dangote Sugar Refinery Plc	1.9453	Healthy	1st
Nestle Nigeria Plc	1.644	Healthy	2nd
Honeywell Flour Plc	0.4073	Financially Distress	7th
Unilever Nigeria Plc	0.8349	Financial Distress	4th
Nigerian Brewery Plc	0.8048	Financial Distress	5th

Author's Computation, 2022.

From table 3 above, the overall corporate prediction using the Springate model shows that Dangote Sugar Refinery Plc has more substantial financial soundness and is financially healthy. Nestle Nigeria Plc and Cadbury Nigeria Plc are also financially healthy and sound for the years under study. However, other firms over the years, such as Champion Brewery Plc, Flour Mill Nigeria Plc, Honeywell Flour Plc, Unilever Nigeria Plc, and Nigerian Brewery Plc, were all financially distressed using the Springate model. It suggests that the firms are on the verge of failure.

Table 4
RANKING OF FIRMS BASED ON FINANCIAL SOUNDNESS (GROVER MODEL)

Firms	**Z-score**	**Remarks**	**Ranking**
Champion Brewery Plc	-0.38	Financially Distress	8th
Cadbury Nigeria Plc	0.4632	Healthy	3rd
Flour Mill Nigeria Plc	0.4127	Healthy	4th
Dangote Sugar Refinery Plc	1.46	Healthy	1st
Nestle Nigeria Plc	0.8742	Healthy	2nd
Honeywell Flour Plc	0.0666	Healthy	7th
Unilever Nigeria Plc	0.4066	Healthy	5th
Nigerian Brewery Plc	0.2302	Healthy	6th

Author's Computation, 2022.

From table 4 above, Grover's model revealed that all firms under study except for Champion Brewery Plc were financially healthy and sound, thus not on the verge of demise or failure. However, Champion Brewery Plc has the potential to fail, as shown using the Grover model of corporate failure.

Table 5
ACCURACY AND ERROR LEVEL FOR SPRINGATE AND GROVER MODEL

	Springate		**Grover**		**Total**

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	Prediction		Prediction		
	Healthy	Distress	Healthy	Distress	
Total of Firms used	3	5	7	1	8
Accuracy Level	37.50%		87.50%		
Error Level	62.50%		12.50%		

Author's Computation, 2022.

From the above table 5, Springate model shows an accuracy rate of 37.5%, meaning the three firms were healthy and financially sound. 62.5% error level shows that five firms were not financially fit and thus distressed. However, the Grover model revealed an accuracy rate of 87.5% , indicating that seven firms were financially healthy and sound, thus not facing corporate failure issues. While Grover's model shows that only one firm is financially distressed with an error level of 12.5%.

The hypotheses tested using the table above reveal that null hypotheses (Ho1): Food and Beverage listed firms in Nigeria are not on the verge of demise using the Springate Model is accepted. Therefore, however, null hypotheses (Ho2): Food and Beverage listed firms in Nigeria are not on the verge of demise using Grover Model is rejected and alternative hypotheses is accepted. Therefore, Food and Beverage listed firms in Nigeria are not on the verge of demise using the Springate Model, while Food and Beverage listed firms in Nigeria are on the verge of demise using the Grover Model.

Table 5 above, comparing the results of Grover and Springate's corporate failure prediction model, shows that Grover has the highest accuracy test rate and thus predicted that 87.5% of Food and Beverage listed firms in Nigeria are financially healthy and sound compared to 37.5% accuracy level of Springate model. This result is inconsistent with the findings of Rahnamai-Roodposhti, Indriyanti (2019), and Imanzadeh, Maran-Jouri. The above studies show that the Grover model has the highest accusation grades compared to the Springate model. Therefore, Springate model is more conservative than the Grover model because this will help firms to be aware of imminent dangers that may befall them and is in line with the study of (Talebnia et al., 2016).

Table 6
COMPARISON BETWEEN SPRINGATE AND GROVER MODEL PREDICTIONS

Firms	**Springate Model Predictions**		**Grover Model Predictions**	
CHB	-0.5452	Financially Distress	-0.38	Financially Distress
CAD	1.0318	Healthy	0.4632	Healthy
FLM	0.7476	Financially Distress	0.4127	Healthy
DGT	1.9453	Healthy	1.46	Healthy

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NST	1.644	Healthy	0.8742	Healthy
HNW	0.4073	Financially Distress	0.0666	Healthy
UNL	0.8349	Financial Distress	0.4066	Healthy
NGB	0.8048	Financial Distress	0.2302	Healthy
Overall	0.8588 <0.86	Financially distress	0.4417> -0.02	Healthy

Author's Computation, 2022.

From the table 6 above, it shows that there is an imminent corporate failure among Food and Beverage listed firms in Nigeria using the Springate Model as five out of sampled eight firms were deemed financially distressed. This result is in line with studies by Kiyak & Labanauskaite (2012), and Uchenna & Okelue (2012), concluded that manufacturing firms are on the verge of failure. However, there is no imminent failure using the Grover model, where seven out eight sampled firms are financially healthy and sound. This outcome suggests that by adopting the Grover model, Food and Beverage listed firms in Nigeria are not in danger of failure.

CONCLUSION AND RECOMMENDATIONS

This study was carried out to ascertain the imminent corporate failure among Food and Beverages listed firms in Nigeria using Springate and Grover Model. Based on the findings, the Springate model (Z score) shows that 3 out of 8 among Food and Beverages listed firms in Nigeria were financially healthy while the remaining five were financially distressed. Grover model (S score), on the other hand, revealed that 7 out eight among Food and Beverage listed firms in Nigeria were financially sound and healthy. Therefore, it is conclude that Grover's model shows that Food and Beverages listed firms in Nigeria are neither on the verge of demise nor corporate failure. In addition, it is conclude that Food and Beverages listed firms in Nigeria are on the verge of corporate failure or demise as Springate model predicted. Lastly, it is conclude that Grover model is more efficient and more accurate in proving the financial soundness of firms while Springate model predicts imminent corporate failure.

Given those mentioned above, it is recommended that the management of Food and Beverage listed firms in Nigeria should adopt the Grover model to avoid or minimize the risk of being delisted from Nigeria Exchange Group and not to chase away potential investors. However, for proper evaluation of corporate failure potentiality of Food and Beverages listed firms in Nigeria, the regulators should encourage the use of the Springate model to predict corporate failure of firms in other to guide investors in making an informed decision about their investment and provide the shareholders adequate information about their stake in the firms.

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Received: 09-Nov-2022, Manuscript No.JMIDS-22-12836; **Editor assigned:** 12-Nov-2022, Pre QC No. JMIDS-22-12836 (PQ); **Reviewed:** 10-Jan-2023, QC No. JMIDS-22-12836; Revised: 17-Jan-2023, Manuscript No. JMIDS-22-12836(R); **Published:** 23-Jan-2023

Citation Information: Alhaji, A.A. (2023). Corporate failure: are listed firms in nigeria on the verge of demise? Analysing selected food and beverages firms using and grover's model springate's model. *Journal of Management Information and Decision Sciences, 26* (2), 1-10.