Can critical success factors of small businesses in emerging markets advance UN Sustainable Development Goals?

Ogechi Adeola
Lagos Business School, Pan-Atlantic University, Lagos, Nigeria
Prince Gyimah
Department of Accounting Studies Education, Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development, Kumasi, Ghana
Kingsley Opoku Appiah
Department of Accounting and Finance, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana, and
Robert N. Lussier
Department of Business Management, Springfield College, Springfield, Massachusetts, USA

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Abstract

Purpose – This study contributes to answering the question, can critical success factors of small businesses in emerging markets advance United Nation (UN) Sustainable Development Goals (SDGs)? Specifically, this study aims to explore the critical factors contributing to the success of small businesses and ultimately the UN SDGs in the emerging market of Nigeria.

Design/methodology/approach – The design is survey research testing the Lussier success vs failure prediction model for small businesses in Nigeria. The methodology includes a logistic regression model to better understand and predict the factors that contribute to success or failure using a data set of 201 small businesses in Nigeria.

Findings – The findings support the validity of the Lussier model ($p = 0.000$) in Nigeria as the model accurately predicted 84.4% of the small businesses as successful or failed with a high R-square value ($R = 0.540$). The most significant factors (t-values < 0.05) that predict the success or failure of businesses support the findings that business owners that start with adequate capital, keep records and financial controls, use professional advice, have better product/service timing, and have parents who own businesses can increase the probability of success.

Practical implications – The study provides a list of critical success factors contributing to the growth of small business in Nigeria, the largest economy in Africa. The findings can help entrepreneurs avoid failure and advance UN SDGs 1, 2, 8 and 10. Implications for current and future entrepreneurs, public agencies, consultants, educators, policymakers, suppliers and investors are discussed.

Originality/value – This is the first study to determine the factors that contribute to the success or failure of small businesses in Nigeria using the Lussier model. It also discusses how to advance four of the UN sustainability goals. Results support the Lussier model's global validity that can be used in both emerging and developed markets, and it contributes to the development of theory.

Keywords Nigeria, Small business, Success, Failure, Lussier model, United Nations SDGs

Paper type Research paper

Introduction

Small businesses do not only represent 92% of all businesses in developing countries but also contribute significantly to employment (60%) and gross domestic product (GDP) (40%) of most countries, within Asia and sub-Saharan Africa (Gyimah *et al.*, 2020; OECD, 2015;

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Page and Soderbom, 2015). These figures are not only significantly enhanced when informal small businesses are included but also highlight the important roles of small businesses including poverty, hunger and unemployment reduction (see EU, 2012; Hasan and Almubarak, 2016; OECD, 2015; Page and Soderbom, 2015; Sriram and Mersha, 2010). In short, the success of small businesses is related to United Nation (UN) Sustainable Development Goals (SDGs) 1 (no poverty), 2 (zero hunger), 8 (decent work and economic growth) and 10 (reduced inequality).

These significant roles notwithstanding, over 70% of small business in emerging markets lack access to credit and government services, among others. These constraints in part contribute to stagnation and ultimate demise within the first five years of commencement of business (Aremu and Adeyemi, 2011; Gyimah *et al.*, 2019, 2020; Okpara, 2011). From this point, the prediction of success or failure of small business continues to receive much attention in the research topic (Davidsson and Klofsten, 2003; Gyimah *et al.*, 2019, 2020; Lussier and Halabi, 2008), practice and policy debates (Baidoun *et al.*, 2018; Dennis and Fernald, 2001; Gyimah *et al.*, 2019, 2020).

In total, 24 years after Lussier's (1995) small business failure prediction model, research highlights inadequate capital (Barsley and Welner, 1990; Bruins *et al.*, 2000; Gyimah *et al.*, 2019, 2020; Marom and Lussier, 2014; Hyder and Lussier, 2016), record keeping and financial controls (Lussier *et al.*, 2016; Rauch *et al.*, 2005), lack of both prior industry and management experiences (Bosma *et al.*, 2000; Houben *et al.*, 2005; Rauch *et al.*, 2005) as significant factors contributing to the collapse of small business. Others find lack of planning and professional advice (Lussier and Corman, 1996), no education and higher-quality staff turnover (Lussier and Pfeifer, 2001), as well as both product/service and economic timing (Houben *et al.*, 2005) as key attributes in prediction the small business failure phenomena. In sum, there is inconsistency in prior study's findings of the factors that contribute to the success or failure of small businesses. From this point, Gyimah *et al.* (2019, 2020) and others are calling for more research to enhance our understanding on why small businesses fail. In theory, survival of small business is linked to UN SDGs 1, 2, 8 and 10. In practice, why small businesses survive or fail remains an empirical question (see Gyimah *et al.*, 2019, 2020; Hyder and Lussier, 2016).

This study attempts to fill this gap. Specifically, this study explores the critical factors contributing to the success of small businesses and ultimately the UN SDGs in the emerging market of Nigeria. Using a data set of 201 small businesses in Nigeria, consisting of 162 successful and 39 failed businesses, we find that the findings support the validity of the Lussier model in Nigeria, and the most significant factors that predict the success or failure of businesses support the findings that business owners that start with adequate capital, keep records and financial controls, use professional advice, have better product/service timing and have parents who own businesses can increase the probability of success.

This study has four major contributions. First, the use of Lussier's model and the nonfinancial information, in particular, to predict failure, has shown that inadequate capital, wrong product/service timing and parents without business, as well as lack of both professional advice and financial controls are related to the small business failure event. Thus, we have evidence to support businesses that start undercapitalized and without financial controls and professional advice have a greater chance of failure. This contributes to the nonfinancial information indicators of failure prediction, a neglected gap in the extant corporate failure literature (Appiah *et al.*, 2015; Aziz and Dar, 2006). Second, this study contributes to our understanding of the critical success factors of businesses that can reduce the failure rate in Nigeria. Therefore, it has practical implications for start-up ventures and established small business owners and managers. Also, government agencies, public policymakers, investors, suppliers, educators and consultants can use the model to aid in their decision-making. Thirdly, this study has practical implications that can also strengthen the small businesses sector by contributing to a holistic approach in achieving four of the 17 United Nations SDGs (SDGs, 2015); including no poverty (SDG 1), zero hunger (SDG 2),

decent work and economic growth (SDG 8) and no inequality (SDG 10). Finally, since there is no universal theory or model for predicting small business success or failure, this study further validates the Lussier (1995) model as an international predictor of small business success or failure that can be used in other countries to contribute to SDGs.

The rest of the paper proceeds as follows. Section 2 reviews the literature. Sections 3 and 4 present the methods and results, respectively. Section 5 provides the implications, and Section 6 concludes the study.

Literature review

Motivation

The purpose of this study is to identify the critical success factors of small businesses in sub-Saharan Africa in general and Nigeria in particular. At this point, our critics may ask, why sub-Saharan Africa in general and Nigeria in particular? First, in September 25, 2014, the World Bank's Board of Executive Directors approved a US$500m International Bank for Reconstruction and Development (IBRD) credit to increase access to finance for Nigeria's small businesses over a period of seven years (Agare, 2018). In total, seven years after this joint effort between the World Bank, the African Development Bank (AfDB), Kreditanstalt für Wiederaufbau (KFW) and Agence française de développement (AFD) and the United Kingdom's Department for International Development (DFID) to provide stable funding to support growth of Nigeria's small business and thus stimulate economic growth and create jobs, majority of newly established small businesses fail within the first two to three years (Agare, 2018). In a sharp contrast, 87% of all enterprises in Nigeria are not only small business but also account for 40 and 70% of GDP and employment, respectively, implying small businesses contribute $150.52 bn of the total $376.3 bn GDP as at 2017. Specifically, the $150.52 bn is higher than the respective GDPs of 6th to 10th biggest economies in Africa, namely, Angola ($124.2 bn), Morocco ($109.8 bn), Ethopia ($80.9 bn), Kenya ($79.5 bn), Sudan ($58.2 bn) and Tanzania ($51.7 bn). These stylized facts suggest our findings on why Nigeria small businesses fail may inform policy direction for governments and small business managers in the Africa continent as a whole, thereby reducing corporate demise.

Second, despite the fact that 56 countries in four regions, namely Latin America, Central and Eastern Europe, the Middle East/Africa and Asia, have been identified by the International Monetary Fund (IMF) as developing economies in 2018, empirical evidence on small business failure in emerging economies has focused on Chile (Lussier and Halabi, 2010), Sri Lanka (Lussier *et al.*, 2016), Pakistan (Hyder and Lussier, 2016) and Ghana (Gyimah *et al.*, 2019, 2020). In order to advance the development of theory and practice, contemporary scholars (e.g. Appiah, 2011) state that the Middle East/Africa region, in particular, has received little research attention and thus call for widened research scope to document why small businesses fail in less developed countries. Also, five years, however, after Appiah's (2011) call, there is still a lack of attention being paid to small business failure research on Africa (see Gyimah *et al.*, 2019, 2020). For instance, recent systematic literature reviews by Appiah *et al.* (2015) that focus on methodological issues on corporate failure prediction and followed up Aziz and Dar's (2006) initial study distinctively ignored a single corporate failure prediction paper in the African context. In sum, additional corporate failure research focusing on the region of Africa is welcomed to enhance our understanding on not only why firms fail but also why competitors in the same less developed countries survive (Amankwah-Amoah and Debrah, 2010; Gyimah and Boachie, 2018a, b; Latham and Braun, 2009).

Small business and SDGs

The United Nations Development Program (UNDP) is a leading UN development agenda established in 2016 to help achieve SDGs, especially in emerging countries by 2030. These SDGs can be effectively implemented if small businesses continue to grow in every economy.

This is because most businesses in both advanced and emerging markets comprise small businesses, and they are the backbone of the economy (Aremu and Adeyemi, 2011). Thus, the roles small businesses play in an economy cannot be overemphasized (Abor and Quartey, 2010; Ahmad, 2012; Bilal and Al Mqbali, 2015; Gyimah and Boachie, 2018a, b; Okpukpara, 2009).

The growth of small businesses can help achieve the main purpose of SDGs. For instance, they can help eradicate poverty (Masakure *et al.*, 2009; Snodgrass and Winkler, 2004); create employment (Mendy and Hack-Polay, 2018; Snodgrass and Biggs, 1996); increase social cohesion and development; protect the world and ensure peace and stability (Abor and Quartey, 2010). Small businesses need to be assisted and guided to grow, multiply and replicate in attaining the UN SGDs such as no poverty (SDG 1); zero hunger (SDG 2); decent work and economic growth (SDG 8) and no inequality (SDG 10).

Despite the significant roles of small businesses in every economy, they face numerous external environmental challenges that hinder their development, such as lack of available finance to start and grow a business, legal issues, environmental conditions and lack of managerial training (Eyaa *et al.*, 2010; Davari *et al.*, 2012; Soomro *et al.*, 2019; Tumwine *et al.*, 2015). However, there are other major internal environmental factors, including owner and business characteristics that help and hinder the effectiveness and efficiency of the performance of small businesses, which is the focus of this study in Nigeria.

Theory and the Lussier model

Resource-based theory (RBT) is commonly used for success vs failure research (Gyimah *et al.*, 2019, 2020; Lussier, 1995; Olawale and Garwe, 2010). RBT helps to better understand how firms are able to identify and acquire resources, rather than how to deploy or allocate activities for the success of operations (Lichtenstein and Brush, 2001). Wernerfelt (1984) developed RBT to determine how firms explore resources to gain a sustainable competitive advantage over other competing firms in the industry (Mahoney and Pandian, 1992).

RBT has been a fundamental theory in small business research and serves as a benchmark for understanding how resources drive business performance (Barney, 1991). According to Newbert (2007), business performance is based on attainting and allocating resources. The theory states that access to adequate resources enhances the entrepreneur's ability to identify and capitalize on new opportunities (Davidsson and Honig, 2003). Due to the significant role RBT plays in research and in the context of small businesses in Nigeria, we selected the Lussier (1995) 15-success versus failure model to identify the critical factors for the survival, growth and sustainable development of small businesses.

Lussier's (1995) model is also the most extensive model for small business research that considers distinct factors identified from 20 prior studies that contribute to a firm's success or failure (Halabi and Lussier, 2014; Lussier and Halabi, 2010 and Teng *et al.*, 2011). Additionally, the Lussier model is selected for this study because it includes owner's characteristics, business characteristics and the economic cycle of businesses. The owner's characteristics include the owner's age, management and industry experiences, educational level, owner's marketing skills, whether the owner's parents own a business and ethnic origin (minority) of owners. Capital, planning, partnership, record keeping and financial control, product or services timing, staffing and the use of professional advice are the business characteristics. Moreover, economy cycle comprises the economic timing of the business operations. Table A1 in the Appendix includes the Lussier (1995) model variables.

Empirical review

There is no accepted theory or model of variables that predicts success or failure of small businesses. While others consider owner's characteristics such as age as a predictor of

business success (Kangasharju, 2000; Lussier and Pfeifer, 2001), others argue that specific managerial skills, experience, training and business environment predict business performance (Ali, 2018; Benzing *et al.*, 2009; Dess *et al.*, 1997. Hofer and Sandberg (1987) found that high-quality products and services are the main determinant of a firm's success and can be achieved through effective planning and proper management for making effective production decisions.

Although the 15-variable Lussier model has been significant in multiple countries, recent studies that have tested the Lussier model have different factors (*t*-values) that are the primary contributors of the success of businesses in emerging and advanced markets. In the advanced market, the original model was first conducted in the USA by Lussier (1995) and found quality staffing, educational level of owners, specific business plan and the use of professional advice as the main predictors of firm's success. Lussier and Pfeifer (2001) found staffing to be the main significant variable that increases the chance of business success in Croatia. Teng *et al.* (2011) tested the model in Singapore and found product/service timing and owner's marketing skills as the most significant factors that contribute to the success of businesses. In Israel, Marom and Lussier (2014) found capital, record keeping and financial control, planning, professional advice and owner's age as the most robust predictors of business success.

In emerging markets, Hyder and Lussier (2016) concluded that a business can be successful in Pakistan if entrepreneurs have adequate capital, have a specific plan, have quality staffing and business partners. Baidoun *et al.* (2018) also found capital, record keeping and financial control, planning and professional advice to be the key factors of business success. Recently, Gyimah *et al.* (2019, 2020) found capital, economic timing and owner's marketing skills as the most significant variables to contribute to the success or failure of firms in Ghana. The original Lussier 15-variable model (1995) was based on 20 prior articles. Table A2 in the Appendix provides an updated comparison of the factors identified as contributing or noncontributing success factors of small businesses from 42 studies. Note that although the number of articles compared has more than doubled, there are still great discrepancies in the findings, and thus, there is still no accepted theory or model to predict small business success or failure.

Methods

Study procedure and sample

This study used the validated Lussier model (1995) survey instrument to survey businesses owners in Nigeria. Trained professionals contacted business owners, provided them guidelines in completing the questionnaires and collected the complete response sheet. A total of 206 respondents were willing to participate in the survey; however, the analysis covers 201 responses. Incomplete and missing data affected the rejection of five responses. Out of 201 responses, 162 are categorized as successful businesses and 39 as failed businesses. Due to the small number of failed businesses, logistic regression was run using a random sample of 39 successful and all 39 failed businesses. The result is quantitatively and qualitatively similar to the results testing the model on the full sample. Thus, we conclude that although the failure sample size is small, it is not subject to selection bias. The result is not reported to conserve space but is available upon request. Table 1 shows summary statistics of the sample.

Econometric model

This study duplicates prior studies using logistic regression to test the Lussier (1995) model variables (e.g. Gyimah *et al.*, 2019, 2020; Hyder and Lussier, 2016; Lussier, 1995; 2005; Lussier and Halabi, 2010; Lussier *et al.*, 2016; Teng *et al.*, 2011). The model is

$$\begin{aligned}\text{Logit(Success)} = \log(\log(\text{success/failure})) = {} & \beta_0 + \beta_1\text{Capital} \\ & + \beta_2\text{Record keeping financial control} + \beta_3\text{Industry experience} \\ & + \beta_4\text{Management experience} + \beta_5\text{Planning} + \beta_6\text{Professioanl advice} \\ & + \beta_7\text{Educational level} + \beta_8\text{Staffing} + \beta_9\text{Product/service timing} \\ & + \beta_{10}\text{Economic timing} + \beta_{11}\text{Age of owner} + \beta_{12}\text{Partners} + \beta_{13}\text{Parents} \\ & + \beta_{14}\text{Minority} + \beta_{15}\text{Marketing skills} + \ddot{E} \end{aligned} \quad (1)$$

The study also tested the differences between the failed and successful businesses and measures the correlation between 15 variables. *T*-test is used to compare the mean differences between the ratio and scale measures, chi-square is used to test mean differences of the nominal measures and the Pearson correlation coefficient is run to measure the significant relationships between the variables.

Demographics Variables	Failed		Success			
	Freq	Percent	Freq	Percent	Total	Percent
Gender						
Male	32	82.05	122	75.31	154	76.62
Female	7	17.95	40	24.69	47	23.39
Education						
None	0	0.00	12	7.41	12	5.97
Basic	1	2.56	1	0.62	2	0.99
High school	4	10.26	16	9.87	20	9.95
Diploma	8	20.51	29	17.90	37	18.41
Bachelor's degree	22	56.41	75	46.30	97	48.26
Master's degree	4	10.26	28	17.28	32	15.92
Doctorate	0	0.00	1	0.62	1	0.50
Industry						
Manufacturing	20	51.28	82	50.62	102	50.75
Service	10	25.64	44	27.16	54	26.87
Agriculture	4	10.26	7	4.32	11	5.47
Retailing	2	5.13	4	2.47	6	2.99
Wholesale	2	5.13	9	5.56	11	5.47
Construction	1	2.56	5	3.09	6	2.99
Transport and communication	0	0.00	6	3.70	9	4.48
Finance	0	0.00	5	3.09	2	1.00
Location						
Lagos	15	38.46	102	62.96	117	58.21
Bauchi	2	5.13	20	12.35	22	10.95
Ibadan	9	23.08	16	9.88	25	12.44
Kaduna	11	28.21	7	4.32	18	8.96
Abuja	2	5.13	17	10.49	19	9.45
Size						
Mean (the number of workers)	6		6			
Business Age						
Number of years (mean age)	4.6		6.8			

Table 1.
Sample demographic statistics ($N = 201$)

Variable measures

Dependent variable. As in the original Lussier's (1995) study, a dichotomous variable, success or failure is the dependent variable. Lussier categorized failure through bankruptcy court. However, due to the lack of bankruptcy records in Nigeria, this study follows the methodology used by later studies in countries without bankruptcy courts including Gyimah *et al.* (2019, 2020), Hyder and Lussier (2016), Lussier and Halabi (2010), Lussier *et al.* (2016) and Teng *et al.* (2011). Thus, the profitability level is used to measure success or failure of businesses.

A business is categorized as failure if the profit level is less than average profits or the business is currently not making profit; a business is categorized as a success if the profit level is average or above industry average profit. On a four-point scale, entrepreneurs were asked to select the appropriate profits level, 1: profit is above the industry profit, 2: industry average profit, 3: profit is below industry average and 4: currently not making profit. Business owners that chose 1 and 2 are coded as 1 to denote success, and those that chose 3 and 4 are coded as 0 to denote failure.

Independent variables. In terms of the 15 independent variables, a seven-point scale is used to measure capital, record keeping and financial records, planning, professional advice, educational level, staffing, product/service timing, economic timing and marketing skills. Other variables including partners, parents and minority are nominal measures coded as 1 or 2. The remaining variables industrial experience, managerial experience and age of owner are ratio numbers of years. The first column of Table 2 shows the measures for the 15 independent variables.

Control variables. Firm's characteristics including business size (the number of workers), business age (the number of years in operations) and the industry are used as control variables (Gyimah *et al.*, 2019, 2020; Lussier and Halabi, 2010). Small businesses are more prone to failure than large businesses (Shane, 1996). The mean of six workers for both failed and successful businesses indicates that business size should not bias the results.

Reynolds (1987) controlled for the number of years in business because age affects the success or failure of businesses since established firms have less chance of failure than new firms. The mean years in business of 4.6 (for successful) and 6.8 (for failed) is not significantly different (t-values > 0.05). The difference may be due to sampling variance. This implies that business age should not bias the results.

Lussier (1995) found that retail and service firms fail more frequently than other industries. However, the chi-square test result indicates that there is no significant difference between the failed and successful firms by industry (X^2 > 0.05) and thus should not bias the results.

Results and discussion

Descriptive statistics and test of difference

Table 2 reports the mean, standard deviation and test of significant difference between the model variables for successful and failed small businesses in Nigeria. Table 2 reports that successful businesses have 12 greater levels of resources than failed businesses; however, only six are significant. Thus, based on lower level statistical test of differences, entrepreneurs that start business with adequate capital (p = 0.008), keep records and control finances (p = 0.000), have a specific plan (p = 0.005), seek professional advice (p = 0.012), have better products/services timing (p = 0.000) and have parents who own firms (p = 0.018) increase their chances of success. Though the failed businesses had three greater levels of resources (educational level, age of owners and partners) than the successful businesses, the differences are not significant.

Model Variables	Failed Mean	Failed SD	Success Mean	Success SD	Sig Testing
1. Capital (1 adequate – 7 inadequate)[a]	4.72	1.65	4.79	1.51	3.39 *(0.008)*
2. Record keeping and financial control (1 poor – 7 good)	4.23	1.77	5.24	1.18	−4.30 *(0.000)*
3. Industry experience (the number of years)	6.92	5.28	7.85	6.09	−0.88 (0.382)
4. Management experience (the number of years)	5.71	6.19	5.82	4.45	−0.12 (0.902)
5. Planning (1 specific – 7 no plan)[a]	3.71	1.81	3.89	1.59	2.82 *(0.005)*
6. Professional advice (1 used – 7 not used)[a]	4.56	1.62	4.79	1.73	2.53 *(0.012)*
7. Education (1 none – 7 doctorate)	4.62	0.91	4.49	1.33	0.54 (0.589)
8. Staffing (1 difficult – 7 easy)	4.03	1.37	4.23	1.37	−0.85 (0.394)
9. Product/service timing (1 introduction – 7 decline)[a]	2.35	1.22	3.14	1.23	−3.58 *(0.000)*
10. Economic timing (1 expansion – 7 recession)[a]	3.85	1.44	3.50	1.12	1.64 (0.103)
11. Age of owner (the number of years)	34.44	7.01	34.12	7.54	−0.24 (0.814)
12. Partners (1 owner 49.5% – 2 partners 50.5%)	1.79	0.41	1.78	0.41	0.02 (0.881)
13. Parents (1 yes parent-owned business 45.7% – 2 no 54.3%)	1.31	0.47	1.52	0.50	5.59 *(0.018)*
14. Minority (foreigners) (1 yes 15.9% –2 no 84.1%)	1.44	0.50	1.36	0.48	0.82 (0.367)
15. Marketing (1 unskilled – 7 skilled)	5.38	1.39	5.48	1.22	−0.46 (0.645)

Note(s): [a]Note that these are reverse scale items. Therefore, a lower number is preferred/expected

Table 2.
Nigeria descriptive statistics and test of difference

Test of collinearity and multicollinearity

The correlations among the variables report 37 significant values ($p < 0.050$) in Table 3. The issue of collinearity is problematic if the r-values are above 50% ($r > 0.500$). Statistical textbooks, including Lussier (2005) state that when the r-values are above 70% ($r = 0.700$), then there is high collinearity. The study reports one correlation greater than 0.500; (3) industry experience and (4) management experience ($r = 0.65$). As expected, industry and management experience are collinear since it is unlikely to have several years of managerial experience without several years of industry experience.

Also, returning to Table 3, the key reason why some of the variables are not significant is due to just, near or faced multicollinearity. This occurs when one independent variable is linearly dependent on one or more other independent variables and without them, the estimate would not occur. For example, management experience, industry and owner's age are likely to be highly correlated. Therefore, the issue of collinearity and multicollinearity should not be problem for the study, and unlike simple test of differences, running logistic regression addresses this problem.

Model validity and predictive power

The model result supports the Lussier model validity in Nigeria. The logistic regression results in Table 4 indicate that the model is a good predictor of failure or success due to large

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1.00														
2	−0.27**	1.00													
3	0.01	0.07	1.00												
4	−0.02	0.10	0.65**	1.00											
5	0.39**	−0.28**	−0.06	−0.00	1.00										
6	0.28**	−0.16*	−0.07	−0.07	0.38**	1.00									
7	−0.08	0.03	0.21*	0.18*	0.00	−0.47**	1.00								
8	−0.11	0.15*	0.08	−0.03	−0.11	0.09	−0.13	1.00							
9	−0.09	0.20**	−0.04	−0.04	−0.09	0.07	−0.29**	0.09	1.00						
10	0.06	−0.15*	−0.15*	−0.03	0.13	0.16*	−0.01	−0.10	−0.21*	1.00					
11	−0.18*	0.12	0.22**	0.23*	−0.12	−0.16*	0.16*	−0.12	0.00	0.03	1.00				
12	−0.14*	−0.16*	−0.05	0.00	0.17*	0.21*	−0.16*	−0.15*	0.12	0.04	0.03	1.00			
13	0.09	0.02	−0.00	−0.06	0.09	0.17*	−0.11	0.10	0.04	−0.11	−0.08	0.21*	1.00		
14	−0.02	−0.01	−0.01	0.04	0.22*	−0.00	0.09	0.02	−0.22*	−0.01	−0.17*	−0.15*	−0.06	1.00	
15	−0.10	0.16*	0.13	0.10	−0.19*	−0.10	0.05	0.27**	0.89	−0.11	0.01	−0.01	0.00	−0.01	1.00

Note(s): Significance level **$p < 0.01$; *$p < 0.05$

Table 3.
Correlation matrix

Model parameter estimates		Model B	Model *t*-sig
Variables name			
1. Capital		−0.332	*0.031*
2. Record keeping and financial control		0.390	*0.010*
3. Industry experience		0.077	0.146
4. Management experience		−0.472	0.406
5. Planning		−0.018	0.897
6. Professional advice		−0.363	*0.022*
7. Education		−0.161	0.500
8. Staffing		−0.061	0.736
9. Product/service timing		0.507	*0.011*
10. Economic timing		0.054	0.763
11. Age of owner		−0.038	0.238
12. Partners		0.132	0.810
13. Parents owned a business		1.302	*0.006*
14. Minority		−0.270	0.556
15. Marketing		−0.136	0.434
Constant		2.027	0.476
Model test results			
N	201		
−2 log likelihood	−150.313		
Model chi-square	57.480		
Model significance	*0.000*		
R-square	*0.540*		
Classification results			
Correctly classified cases			
Success	96.30%		
Failed	66.67%		
Overall	*84.08%*		

Table 4.
Nigeria logistic results

−2 likelihood log statistics (−2LL = 150.313). The chi-square is like the *F*-test in standard regression that is used to determine the model's significant level in binary logistic regression. The study reports a chi-square (57.480) with a significant level of less than 1% (model significance = 0.000). Thus, the model result reports that Lussier's (1995) model is valid in Nigeria and can correctly classify a group of firms as failed and successful more accurately than random guessing 99% of the time. The model also reports a high R^2 value ($R = 0.540$), confirming the validity of the Lussier model. The high overall logistic regression accuracy classification (84.08%) of firms also confirms that the model is valid in Nigeria.

Therefore, an entrepreneur that starts a business operation with adequate capital, keeps records and financial control, has industry and management experience, has specific plans, makes use of professional advice, is literate, has few difficulties in recruiting and retaining quality staff, has better product/service and economic timing, has partners, has parents who own businesses and has marketing skills before starting business can increase the chances of success.

Significant variables

Although the 15-variable model is valid, from Table 4, five variables are significant (0.95 CI, *t*-values $p < 0.05$) and therefore are more relevant to success in Nigeria. They are (1) capital ($\beta = -0.332$, $p = 0.031$), (2) record keeping and financial control ($\beta = 0.390$, $p = 0.010$), (5) professional advice ($\beta = -0.363$, $p = 0.022$), (9) product/service timing ($\beta = 0.507$, $p = 0.011$) and (13) parents ($\beta = 1.302$ $p = 0.006$).

Discussion of results

The study's findings support the model's validity in Nigeria and support prior studies in other countries by Baidoun *et al.* (2018), Gyimah *et al.* (2019, 2020), Guzman and Lussier (2015), Hyder and Lussier (2016), Lussier (1995), Lussier *et al.* (2016), Lussier and Halabi (2010) and Marom and Lussier (2014). The significant *t*-value variables in Nigeria do support prior studies in other countries.

Capital is one of the most significant variables that contribute to the success of small businesses in Nigeria. Capital was also significant in recent studies including Baidoun *et al.* (2018), Gyimah *et al.* (2019, 2020), Hyder and Lussier (2016), as well as earlier studies by Cooper *et al.* (1990), Cooper *et al.* (1991), Reynolds (1987) and Reynolds and Miller (1989).

This study also finds that record keeping and financial control can increase the chances of small businesses success in Nigeria. Recent studies by Marom and Lussier (2014), Baidoun *et al.* (2018) and Lussier *et al.* (2016) also support that firms that are able to keep records and control finances increase their chances of success.

In terms of professional advice, studies by Houben *et al.* (2005), Lussier (1995), Lussier (1996a, b), Marom and Lussier (2014) and Baidoun *et al.* (2018), as well as earlier studies including Barsley and Welner (1990), Copper *et al.* (1990, 1991), Crawford (1974), Flahyin (1985), Hoad and Rosco (1964), Vesper (1990) and Wight (1985) also found that advice from professionals can increase the success of businesses.

Product and service timing, which is also a predictor of business success in Nigeria, was also significant in studies conducted by Carrelo-Morales (2015), Houben *et al.* (2005) and Lussier *et al.* (2016) that tested the Lussier (1995) model. The results also support the findings of Lussier (1996b) and Lussier and Corman (1996) that entrepreneurs whose parents own businesses have a greater chance of success than owners whose parents did not own a business.

Implications

Implications for practice

Based on the empirical results supporting the Lussier model's validity in helping to decrease small business failure and increase success rates, the study supports the following practical implications. First and foremost, the federal government of Nigeria should pay critical attention to the most significant variables that contribute to business success and provide policies that can strengthen small businesses. The government can use the Lussier model as a tool to aid in the allocation of limited resources, such as aid and financial credits toward higher potential small businesses. Government should also provide adequate funds to business owners if they have good specific business plans geared toward economic development that can provide the UN SDG number 8 – decent work and economic growth for Nigeria. Providing aid to create jobs and economic grow directly contributes to less poverty (SDG 1) and hunger (SDG 2) and more equality (SDG 8).

Moreover, government institutions such as the Small and Medium Enterprise Development Agency of Nigeria (SMEDAN) and financial support institutions such as the Bank of Industry and National Economic Reconstruction Fund (NERFUND) should consider strategies that will provide low interest loans to business owners that can assist them in starting businesses with adequate levels of capital that can provide decent work and economic growth for Nigeria (SDG 8), contributing to less poverty (SDG 1) and hunger (SDG 2) and more equality (SDG 8).

Also, the UNDP should support small businesses financially and also provide guidance geared toward the critical factors using the Lussier model. This strengthens small business grow, multiply and replicate in attaining the SDGs including no poverty (SDG 1); zero hunger (SDG 2); decent work and economic growth (SDG 8) and no inequality (SDG 10).

Furthermore, educational institutions in Nigeria can use the model to train and educate students as well as prospective entrepreneurs of the most significant factors that contribute to the success or failure of businesses. Thus, training institutions should include the Lussier

model in their entrepreneurship curricula. For instance, the Enterprise Development Centre of Pan-African University in Lagos can use the center to train, educate and advise aspiring entrepreneurs based on the variables of the model. Consultants can also use the model with business clients to help them establish and grow their ventures.

Potential lenders or investors, suppliers and other stakeholders can also use the Lussier model in addition to other recognized methods to assess the probability of success or failure of start-up and nascent businesses. Using the model, lender, investors and suppliers will have fewer losses due to businesses that have failed. Thus, there will be less of a negative impact on jobs and growth (SDG 8), as well as poverty, hunger and inequities (SDGs 1, 2, 10).

Implications for theory

Returning to Table 2, in 42 prior articles, there are wide discrepancies in the variables or researchers have failed to clearly identify a list of the most significant variables that contribute to the failure or success of small businesses. There is no globally accepted success versus prediction model for small business. Currently, there is no empirical framework to develop a theory (Gyimah *et al.*, 2019, 2020). This study contributes to research and adds to the body of knowledge to better understand and predict why businesses fail or succeed. Without a theory, the contributions of this study can help to develop a theoretical framework that can be used to predict failure or success of small businesses. This study can serve as a benchmark for future research.

Also, this study is the first of its kind to test the Lussier model in Nigeria, and it reinforces the model global acceptance that can be used as in both emerging and advance markets and moving toward a theory. Thus, an entrepreneur that starts a business with adequate capital; keeps good record and financial control; has managerial, industrial and marketing experience; has specific business plan; seeks professional advice; is more educated with proper staffing; has good product and economic timing; has partners and parents who owned a business and is not a minority has a greater chance of business success.

Limitations and future research

As with all research, this study has some limitations. First, the generalizability of the finding to all emerging markets. This study only uses a sample from Nigeria to represent emerging markets; however, the model has been tested in other emerging markets by Teng *et al.* (2011) in Singapore, Guzman and Lussier (2015) in Mexico, Hyder and Lussier (2016) in Pakistan, Baidoun *et al.* (2018) in Palestine and Gyimah *et al.* (2019, 2020) in Ghana. Future studies can consider samples from other emerging markets to generalize the findings of the critical factors that contribute to the success or failure of small businesses.

Second, eight of the independent variables were subjectively measured using a seven-point scale. This can result in self-perception bias responses from business owners. Further research can include more objective measures for the model variables and integrate more objective probability variables for measuring business success or failure.

Third, the use of profitability levels to categorized successful and failed businesses is another limitation. The model does not provide numerical guidelines to differentiate between the dichotomous dependent variable (success or failure). At the time of conducting the research, Nigeria did not have a record of bankrupt businesses to select failed businesses to match against successful businesses. Even though trained professionals conducted the survey research, they find it extremely difficult to locate small businesses that have failed. Thus, the number of unprofitable businesses was lower, so future studies should include a larger sample size for failed businesses. Future researchers can also collect data from businesses that have actually failed and match them against successful businesses to make the results more robust.

Judgment is needed in assessing the 15 independent variables, such as subjectively assigning a value of high, moderate or low to each variable and then making an overall

judgment of the probability of success or failure. Thus, when entrepreneurs, public agencies, consultants, educators, policymakers, suppliers and investors use the Lussier model to evaluate the success or failure of new ventures, they should note that the model can be used to provide additional information to other bankruptcy or default assessment tools. However, bankruptcy and default assessment tools are usually based on prior performance. Proposed and nascent business ventures have no prior history, thus increasing the value of the Lussier model for these small businesses.

Fourth, there are cultural factors that were not discussed or controlled. For instance, there are so many differences between countries cultures such as economies, attitudes toward business, legal systems, governance and other factors. Future research can develop and test cultural control factors and also investigate how culture, economics and regulatory environments can affect the failure or success of businesses.

Although the study reported a high R-square ($R = 0.540$) and a strong predictive power of 84.4%, there are other variables that can contribute to business success or failure. Thus, future research can include additional variables to the Lussier (1995) model to increase its statistical predictive power.

Conclusion

The study concludes that the Lussier (1995) model is valid in Nigeria and predicted an overall accuracy rate of 84.4% of the sample with a high R-square. Thus, the Lussier (1995) model is robust for use as a global model that can be used to predict small business success or failure. The study's findings indicate five critical variables (t-values < 0.05) are the most significant success variables of small businesses in Nigeria. Thus, if entrepreneurs want to succeed in an emerging market (Nigeria), they should start with adequate capital, keep records and control finances, use professional advice, have better product/service timing, and although it cannot be controlled, it does help to have parents who own businesses. Overall, the result supports that using the Lussier model will increase the number of successful small businesses in Nigeria that in turn can contribute to the UN SDG (SDG 8) and create decent work and economic growth for Nigeria. Providing support to create jobs and economic growth directly contributes to less poverty (SDG 1) and hunger (SDG 2) and more equality (SDG 8).

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Corresponding author
Prince Gyimah can be contacted at: pgyimah@uew.edu.gh; princegyima@yahoo.co.uk

Appendix

Table A1. Lussier model (1995) variables

Success versus failure variables
Capital (capt): Businesses that start undercapitalized have a greater chance of failure than firms that start with adequate capital
Record Keeping and Financial Control (rkfc): Businesses that do not keep updated and accurate records and do not use adequate financial controls have a greater chance of failure than firms that do
Industry Experience (inex): Businesses managed by people without prior industry experience have a greater chance of failure than firms managed by people with prior industry experience
Management Experience (maex): Businesses managed by people without prior management experience have a greater chance of failure than firms managed by people with prior management experience
Planning (plan): Businesses that do not develop specific business plans have a greater chance of failure than firms that do
Professional Advisors (prad): Businesses that do not use professional advisors have a greater chance of failure than firms using professional advisors. A more recent source of professional advisors is venture capitalists
Education (educ): People without any college education who start a business have a greater chance of failing than people with one or more years of college education
Staffing (staff): Businesses that cannot attract and retain quality employees have a greater chance of failure than firms that can
Product/Service Timing (psti): Businesses that select products/services that are too new or too old have a greater chance of failure than firms that select products/services that are in the growth stage
Economic Timing (ecti): Businesses that start during a recession have a greater chance of failing than firms that start during expansion periods
Age (age): Younger people who start a business have a greater chance of failing than older people starting a business
Partners (part): A business started by one person has a greater chance of failure than a firm started by more than one person
Parents (pent): Business owners whose parents did not own a business have a greater chance of failure than owners whose parents did own a business
Marketing (mrkt): Business owners without marketing skills have a greater chance of failure than owners with marketing skills

Table A2.
Comparison variables identified in 42 articles as contributing factors to success

Scholars	Capt	rkfc	inex	maex	plan	prad	educ	staff	psti	ecti	age	part	pent	minor	mrkt
Baidoun *et al.* (2018)	F	F	N	N	F	F	N	N	N	N	N	N	N	N	N
Barsley and Welner (1990)	F	–	F	F	F	F	–	–	–	–	–	–	–	–	–
Bosma *et al.* (2000)	–	–	F	–	–	–	–	–	–	–	F	–	–	–	–
Bruins *et al.* (2000)	F	–	F	N	–	–	N	–	–	–	F	–	–	–	–
Bruno *et al.* (1987)	F	F	–	F	F	–	–	F	F	F	–	–	–	–	F
Carrero-Morales (2015)	N	N	N	N	N	N	N	F	F	N	N	N	N	F	N
Cooper *et al.* (1990)	F	–	N	N	F	F	N	–	F	F	F	F	–	F	–
Cooper *et al.* (1991)	F	–	F	N	–	F	F	–	N	N	N	N	F	F	–
Crawford (1974)	–	–	F	–	–	F	F	–	–	N	N	–	–	–	–
Cressy (1996)	F	–	–	F	–	–	–	–	–	–	–	–	–	–	–
Dun and Bradstreet (1995)	F	F	F	F	–	–	–	–	–	F	–	–	–	–	–
Flahvin (1985)	F	F	F	F	–	F	–	F	–	–	–	–	–	–	–
Gaskhill *et al.*, (1993)	N	F	F	F	F	F	N	–	–	N	–	–	–	–	F
Gyimah *et al.* (2019, 2020)	F	N	N	N	N	N	N	N	N	F	N	N	N	N	F
Guzman and Lussier (2015)	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Hoad and Rosko (1964)	–	–	F	N	N	F	F	–	–	–	–	–	–	–	–
Houben *et al.* (2005)	N	N	N	F	F	F	N	N	F	F	N	F	N	N	F
Hyder and Lussier (2016)	F	N	N	N	F	N	N	F	N	N	N	F	N	N	N
Kennedy (1985)	F	–	–	F	F	–	–	–	–	F	–	–	–	–	–
Lauzen (1985)	F	F	–	F	F	–	–	F	–	–	–	–	–	–	–
Lussier and Corman (1996)	F	F	F	N	F	F	F	F	N	F	N	N	F	F	N
Lussier and Halabi (2010)	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Lussier and Pfeifer (2001)	N	N	N	N	F	F	F	F	N	N	N	N	N	N	N
Lussier (1995)	N	N	N	N	F	F	F	N	N	N	N	F	N	N	N
Lussier (1996a)	N	F	N	F	F	F	N	F	N	F	N	F	F	N	F
Lussier (1996b)	N	F	N	N	F	F	N	N	F	F	F	N	N	N	N
Lussier *et al.* (2016)	N	F	N	N	F	–	N	F	F	–	–	N	–	–	F
Marom and Lussier (2014)	F	F	N	N	F	F	N	N	N	N	F	N	N	N	N
McQueen (1989)	F	–	F	F	–	–	–	–	–	–	–	–	–	–	F
Rauch *et al.* (2005)	–	–	F	F	–	–	F	–	–	–	–	–	–	–	–
Reynolds and Miller (1989)	F	F	–	–	F	–	N	N	F	–	N	F	–	–	–
Reynolds (1987)	F	F	–	–	F	–	–	N	F	–	–	–	–	–	N

(*continued*)

Scholars	Capt	rkfc	inex	maex	plan	prad	educ	staff	psti	ecti	age	part	pent	minor	mrkt
Sage (1993)	F	–	–	F	–	–	F	–	–	–	–	–	–	–	–
Santarelli (1998)	–	–	–	–	–	–	F	–	–	F	–	–	–	–	–
Schutjens and Weaver (2000)	–	–	–	–	F	–	–	–	–	–	–	F	–	–	–
Sommers and Koc (1987)	–	–	–	F	F	–	–	F	–	–	–	–	–	–	–
Teng *et al.* (2011)	N	N	N	N	N	N	N	N	F	N	N	N	N	N	F
Thompson (1988)	N	–	–	F	F	–	–	F	F	–	–	–	–	–	–
Vesper (1990)	F	F	F	F	N	F	F	–	F	F	–	F	–	–	F
Wight (1985)	F	F	–	F	–	F	–	–	–	–	–	–	–	–	–
Wiklund and Shepherd (2003)	F	–	–	F	–	–	–	–	–	–	–	–	–	–	–
Wood (1989)	–	F	F	F	F	–	F	–	–	–	F	–	–	–	–
Total F	22	16	14	19	22	17	11	11	11	11	6	8	3	4	9
Total N	12	9	15	17	7	6	16	11	11	12	15	12	12	12	11
Total –	8	17	13	6	13	19	15	20	20	19	21	22	27	26	22

Note(s): F supports variable as a contributing factor
N does not support variable as a contributing factor
– does not mention variable as a contributing factor

Table A2.