Determinant of Business Success or Failure Among SMEs in Cambodia

Muhammad M. Ma'aji[*], Casey Barnett[*] and Phouneta Sok[*]

ABSTRACT

This study investigates the causes or predictors of SMEs' failure in Cambodian. The study uses logistic regression to analyze 90 successful and 42 unhealthy small businesses. The results of the study find that five variables (working capital, owner's education level, owner's marketing skills, customer complaint and age of the business) were significant in predicting small businesses success or failure. The model also predicted 97% of the businesses accurately with a high R-square value of 66%. This study is the first to predict success versus failure factors of SMEs conducted in Cambodia that contributes to theory and practice. Implications for future and current entrepreneurs; government agencies that train, advice and assist small business owners; public policy makers; educators; suppliers; and lenders are presented.

Keywords: business failure; business success; logistic regression; small business; resource based theory

1. INTRODUCTION

In recent years, small and medium-sized enterprises (SMEs) are viewed as one of the leading contributors to national economic development in the area of creating employment opportunities, developing indigenous skills and technologies, building market competitiveness, and realizing a poverty-free society (Jahur and Quadir, 2012). More than 95 percent of the established enterprises across the globe are SMEs, contributing approximately 60 percent of the private sector manpower (Ayyagari, Demirgüç-Kunt and Maksimovic, 2011). More specifically, In the US, Germany, UK, and France, SMEs contribute approximately 51 to 56 percent of the countries' GDP (Association of Chartered Certified Accountants (ACCA), 2013). SMEs in the Association of Southeast Asian Nations (ASEAN) region make up 96 percent of all enterprises, with 50 to 95 and 30 to 53 percent of contribution to domestic employment and GDP, respectively (SME Corp Malaysia, 2013). For example, Indonesia and Malaysia, as some ASEAN members, SMEs' contribution to GDP is 58.7 and 35.9 percent respectively. Consequently, the contribution of SMEs to GDP has triggered state and regional initiatives to further strengthen the growth of small businesses around the globe (EU Annual Report, 2013). As such, most policymakers consider the health of the SME sector to be highly important to an economy.

Similarly, Cambodia is not an exception, small businesses play an important role in job creation, generating income for low-income individuals and fostering economic growth, social stability, and contributing to the growth of a dynamic private sector. Between 2000 and 2012, the number of SMEs has increased by 268 percent, accounting for more than 75 percent of all established enterprises and generating 50 to 98 percent of the total employment (Economic Census, 2011; Forsinetti, 2012). There are more than 156,890 small and medium-sized enterprises (SMEs) employing more than one million workers (Savi, 2019). Furthermore, with Cambodia's average annual GDP growth at around 7 percent for the past 10 years, it signifies how both the economy and SMEs are stable and growing healthily. The Cambodia government through its strategic Rectangular Strategy have come up and implemented a number of initiatives to further develop the SMEs sector and be more competitive. For example, in 2018, the government introduced a decentralized SME registrations platform, tax exemptions, technical training and financial assistance (Sokhorng, 2018). According to the policy, SMEs will receive an income tax exemption for three to five years from the date of tax registration for new enterprises, or from the date of tax registration update for enterprises that have been registered (Sokhorng, 2018).

Despite these initiatives, most of these SMEs fail (Neshamba, 2006), within the first five (Pena, 2004)

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JEL Codes: G30, G39

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Despite these initiatives, most of these SMEs fail (Neshamba, 2006), within the first five (Pena, 2004)

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or six years (Hayward, Shepherd, and Griffin, 2006). For example, in Malaysia, an approximately 60 percent failure rate among SMEs has been reported (Ahmad and Seet, 2009). In the UK, approximately 65 percent of the small businesses remain in business after the first three years of initial start-up, but after five years less than 45 percent of the businesses have actually survived (Gray, Saunders andGoregaokar, 2012). Australia also records a high failure rate with 62 percent of the SMEs failing after the third year of operations, while 74 percent fail after the fifth year of operations (Chancharat, 2011). In Nigeria, between 60 to 70 percent of Nigerian SMEs fail in the first three years of business operations (Akingbolu, 2010). Similarly, in South Africa, 63 percent of the small businesses fail to pass the second year of operations (Cant and Wiid, 2013). Likewise, in Cambodia, there are a number of SMEs that failed (at an early stage or otherwise) due to the challenges they faced in the cause of their business operation.

As such, there is a need to further investigate the causes of poor performance and failure of SMEs in Cambodia as their financial stability and going concern are important considerations for company's stakeholders, including the shareholders, financial institutions, suppliers, employees, government, customers, and society in general. This is because the consequences of business failure have a far-reaching impact on the stakeholders. Therefore, continuous tracking of SMEs' performance and potential failure would be a significant concern to the corporate sector and the economy. Therefore, the objective of this research is to investigate the causes or predictors of SMEs' failure in Cambodia. To the best of knowledge, this is the first study to predict success versus failure factors of SMEs conducted in Cambodia.

This study will make practical contributions and the model can be used in Cambodia to increase the chances of success of SMEs. The Cambodian government is currently making efforts to enhance and develop the SME sector to be a more vibrant contributor to economic development. Also, the paper could provide more insight for entrepreneurs, policymakers, and other stakeholders to aid in their efforts through the reallocation of resources that may help reduce the rate of poor performance or failure among SMEs. The implications of the study can strengthen the SME sector in Cambodia, which can result in more job creation, greater social cohesion, better income distribution, and eventually lead to increased economic growth and development.

2. LITERATURE REVIEW

Resource-based Theory

The resource-based theory (RBT) was used in this study to explain factors that contribute to success or failure of small businesses. RBT was introduced by Wernerfelt (1984), and it indicates the internal resource capabilities that lead to survival of the firms and achievement of sustainable competitive advantage, especially the SMEs (Ong and Ismail, 2008). These resources can either be tangible such as assets, access to funds and location among others or intangible, specifically in the areas of human resource which constitute knowledge and awareness, skills and expertise, customer service, reputations and status, entrepreneurial orientation, networks dispositions and inspiration that allows developing specific capabilities (Pratono and Mahmood, 2015; Wernerfelt, 1984). The theory has been widely used as a theoretical base for understanding how firms' resources drive performance (Crook, Ketchen, Combs, and Todd, 2008). Many scholars have argued that it is firm's ability to deploy resources that explain their performance differentials (Newbert, 2007). The theory argues that entrepreneurs need to have specific resources that will help to recognize new opportunities and assemble other resources for their firms to succeed (Alvarez andBusenitz, 2001). Lussier (1995) used the RBT in his 15 success versus failure factors to find out the resource-based factors that contribute to success or failure of businesses in the US. Similarly, Thornhill and Amit (2003) used the RBT to differentiate between organizations that have experienced failure during their preliminary stages due to their lack of financial resources or knowledge management. O'Cass and Sok (2013) used the RBT to examine the extent to which combinations of intellectual resources, product innovation, and marketing knowledge influence the performance of small businesses.

Evolution of Business Failure Prediction Models

Over the last four decades, the incidence of bankruptcy cases has led to a growing interest in business failure prediction from researchers and has developed into a key research area in finance. Previous studies evolve around the search for the best business failure prediction model using financial data for both listed corporations and small businesses. Altman's (1968) work is the pioneering studies of bankruptcy prediction model using financial ratios among the US listed companies by using multivariate

discriminant analysis. Since Altman (1968) model, a number of bankruptcy prediction models for listed companies have been developed in the literature (Altman, 1968; Beaver, 1967; Blum, 1968).

Similarly, increasing business failure among small businesses in the US motivated Edmister (1972) to adopt Altman (1968), Beaver (1967) and Blum (1968) bankruptcy prediction models of listed companies based on financial data to seek evidence among small businesses in the same market. Using 19 selected financial ratios from their studies, Edmister (1972) employs the multiple discriminant analysis (MDA) statistical technique to discriminate among failed and non-failed SMEs. He finds that for one year prior to failure, seven financial ratios are found to be significant in predicting business failure among small businesses, which include annual fund flow to current liabilities, equity to sales ratio, working capital to sales ratio, current liabilities to equity, inventory to sales ratio, quick ratio to Robert Morris Associates (RMA) up-trend. The finding further implies that financial ratios are applicable to predict business failure of small firms.Following Edmister (1972), a number of studies have developed prediction models using financial data (see Abdullah, Ma'aji and Khaw, 2019 Altman and Sabato, 2007; Altman, Sabato and Wilson, 2010; Blum, 1974; Edmister, 1972; Keasey and Watson, 1987; Lussier, 1995; Ma'aji, 2019; Ma'aji, Abdullah and Khaw, 2019; Ohlson, 1983; Platt and Platt, 1990; Zmijewski, 1983) and among the most predictable variables in their models are profitability ratios, leverage ratios, liquidity ratios, efficiency ratios etc.

Moreover, the research field extends on developing prediction models using qualitative data as researchers claimed it also provide a comprehensive or unified explanation for small firm failure. Lussier (1995) utilises qualitative data to predict business failure among US SMEs which was consider among the first model that utilised such data. The model consists of fifteen major variables identified in twenty studies. The model is non-financial and it uses resource-based theory (RBT) as it helps to better understand the role of resources in new ventures by focusing on the identification and acquisition of resources that are crucial for the firms' long-term success (Lichtenstein and Brush, 2001). The finding show that successful firms had fewer difficulties in finding and retaining qualified personnel than the failed firms. Contrary to expectations, the finding show that owners of failed firms had more industry, work, management and life experience (AGE). Gimeno-Gascon and Woo (1991),

Flerackers (1998), and Reynolds and Miller (1989) find similar results regarding these variables. A possible explanation for these results is that there is needs for a young, fresh and flexible mentality in order to be a successful entrepreneur, and not a mentality that has been fixed too much by all the years of experience.

Furthermore, the studies reveal that failed firms prepared more detailed financial, personnel and overall plans than successful firms (Gimeno-Gascon and Woo, 1991; Flerackers, 1998; Reynolds and Miller, 1989). This can be explained by the fact that "out-of-the-box-thinking" is required in order to successfully run a business. Houben (2000) and Braunschweig (2003) also mention the risk of exaggerating planning. Contrary to expectations, it appears that having a business partner does not increase the chances of success. This can be explained because one cannot have two captains on a ship; this will ultimately go wrong and cause problems. Cooper et al. (1991) also finds that having a partner is not a predictor for survival. The model correctly predicts 81 percent of the successes and failures in the sample, which is consistent with the Lussier (1995) model. Consistent with the studies of Lussier and Pfeifer (2001) and Teng et al. (2011) find that staffing is a significant predictor among the non-financial factors while Lussier and Pfeifer (2001) find education to be a significant factor among the non-financial factors. Furthermore, managerial expertise is also found to be significant in explaining distress among SMEs. Lussier's (1995) model is tested and replicated by other researchers outside the US market such as by Houben, Bakker and Vergauwen (2005).

Majority of researchers have been putting a lot more effort into building business failure prediction models in developed countries with little evidence from developing countries. Furthermore, fewer studies have use non-financial variables in their prediction model as a result of difficulty in accessing small businesses financial and non-financial data (Ma'aji, Abdullah andKhaw, 2019; Lussier and Corman, 1995) and many small entrepreneurial businesses are not even in theformal sector in many developing countries such as Cambodia. Non-financial indicators rests on the basis that the use of financial measures as sole indicators of organisational performance is not enough (Behr and Guttler, 2007). Financial ratios use in business failure prediction studies have received a lot of debate within the corporate finance literature as they are determined based on past performance, and thus the prediction models may not be suitable for future failure prediction (Foster, 1986; Keasey

and Watson, 1987). The use of historical cost in accounting principles may affect the significance of the prediction models since there is a tendency of manipulations of information especially in the case of SMEs where there is lack of sound and effective internal control mechanism (Agarwal and Taffler, 2007).
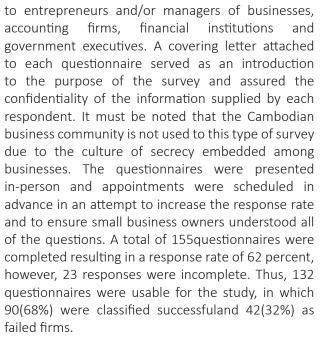
The limited evidence available would seem to suggest that the underlying causes of business failure among small business in Cambodia are numerous, and any stakeholder concerned in attempting to forecast which companies are vulnerable will have to depend on a broad information set on which to base his/her predictions. This will consist of governance, industry specific information, macroeconomic lead indicators and quality of management, as well as financial ratios relating to a particular company which are expected to enrich understanding of small business failure.

3. METHODOLOGY

Financial and non-financial information on small businesses in developing countries are difficult to access (LussierandCorman, 1995; Ma'aji et al., 2019) and many small entrepreneurial businesses are not even in theformal sector.Therefore, data were collected as part of a comprehensive survey questionnaire that has been previously validated in different countries on the financial and non-financial information (Lussier, 1995; Lussier, 2005; Lussierand Pfeifer, 2001; LussierandHalabi, 2010; Lussier, Bandara, andMarom 2016).The population of businesses used in this research follows the definition provided by the Royal Government of Cambodia (RGC) Sub-committee on SME Secretariat as shown in table 1.The RGC's Sub-committee on SME Secretariat defines Cambodian SMEs into four categories (refer table 1), namely micro, small, medium and large enterprises. These SMEs are defined based on the number of employees and total assets, excluding land and building.The study used random sampling techniques in the selection of sampleof small businesses. This method is commonly used in firm-level studies (Carrero-Morales, 2015).

Table 1: Definition of SMEs

Categories	No of Employees	Assets excluding land (USD)
Micro	Less than 10	Less than 50,000
Small	11 – 50	50,000 – 250,000
Medium	51 – 100	250,000 – 500,000
Large	Over 100	Over 500,000

Source: RGC's Sub-committee on SME Secretariat, 2005 and 2007.

A total of 250 questionnaires were administered to entrepreneurs and/or managers of businesses, accounting firms, financial institutions and government executives. A covering letter attached to each questionnaire served as an introduction to the purpose of the survey and assured the confidentiality of the information supplied by each respondent. It must be noted that the Cambodian business community is not used to this type of survey due to the culture of secrecy embedded among businesses. The questionnaires were presented in-person and appointments were scheduled in advance in an attempt to increase the response rate and to ensure small business owners understood all of the questions. A total of 155questionnaires were completed resulting in a response rate of 62 percent, however, 23 responses were incomplete. Thus, 132 questionnaires were usable for the study, in which 90(68%) were classified successfuland 42(32%) as failed firms.

Model

Logistic regression was used to test the model based on a dichotomous dependent variable. Logistic regression deals with situations in which the observed outcome for a dependent variable can have only two possible outcomes, in the case of this study a healthy or unhealthy firm. The prediction model used in this study is as follows:

$$Z_i = \beta' x_i + u_i \qquad (2)$$

Where:

Z_i = unhealthy if $Z_i > 0$; healthy otherwise

x_i = Capital; Financial record and financial control; Working capital;Management experience; Business planning; Professional advice; Educational level; Leadership skills; Product/service timing;Marketing skills; Customer complaint; Age of firm; Under-skilled labour; Government support; Infrastructure condition which are defined in table 2.

u_i = error term

Z_i ranges from $-\alpha$ to $+\alpha$

The probability and likelihood function for unhealthy can be defined as follows:

$$P_i = E\,(Y = 1/\,x_i) = \frac{1}{1+e^{-(\beta'\,x_i + u_i)}} \qquad (3)$$

A logistic distribution function is represented by equation (3). If P_i represents the probability of unhealthy as given in equation (3), then $(1-P_i)$ would be the probability ofhealthy.

$$1 - \text{Pi} = \frac{1}{1 + e^{Z_i}} \qquad (4)$$

The company was classified as unhealthy if the calculated probability from the logit model was more than 0.5; Otherwise, it was considered healthy.

Variable Measures

Dependent Variable

The study uses dichotomousvariable of success or failure as dependent variable. The study follows the methodology of measuring profitability assuccess or failure because at the time of conducting this research, Cambodia had no bankruptcy court to select failed businesses. The use of profitability is as a determinant of business success or failure is used by many researchers among which are Guzman and Lussier, (2015), HalabiandLussier, (2010), HyderandLussier, (2016) and Lussierand Pfeifer.A business is classified as successful if the level of profits is average or aboveindustry average profit, and a business is classified as failed if the level of profit is less thanaverage profits or the business is currently not profitable. On a Likert scale of 1 to 4, SMEsowners or managers were asked to select their level of profit, 1 – positive profit for more than 10 years, 2 – positive profits for 2 to 5 consecutive years, 3 – Unpredictable profits/losses, and 4 – currently notmaking profits. A dummy variable was created and those that selected 1 and 2 were coded as 0 to represent healthySMEs and thoseresponses that chose 3 and 4 were coded as 1 to represent as unhealthy SMEs.

Table 2: Variables definitions		
Variables	Type	Definition
Capt	Financial indicators	Businesses that start undercapitalized have a greater chance of failure than firms that start withadequate capital.
Frfc	Financial indicators	Businesses that do not keep updated and accurate records have a greater chance of failure than firms that do.
WCap	Financial indicators	Businesses with insufficient business resources (finance, raw material or finished product, equipment)have a greater chance offailure than firms sufficient resource.
MgEx	Management indicators	Businesses managed by people without prior management experience havea greater chance of failure than firms managed by people with prior management experience.
Bpln	Management indicators	Businesses that do not develop specific business plans have a greater chance of failure than firmsthat do.
PrAd	Management indicators	Businesses that do not use professional advisors have a greater chance of failure thanfirms using professional advisors. A more recent source of professional advisors is venture capitalists
Educ	Management indicators	Owners without higher education who start a business have a greater chance of failing thanowners with higher education
Ldsk	Management indicators	Businesses with insufficient domain of leadership skills from top management have a greater chance of failure than firms with.
Psti	Market competition indicators	Businesses that select products/services that are too new or too old have a greaterchance of failure than firms that select products/services that are in the growth stage.
Mrkt	Market competition indicators	Business owners without marketing skills have a greater chance of failure than owners withmarketing skills.
CuCm	Market competition indicators	Businesses that received customer complaints most of the timehave a greater chance of failure than firms with that received less customer complaint.
BAge	Market competition indicators	Younger business have a greater chance of failing than older businesses.
Uskl	Environment indicators	Shortage of skilled people in the area made difficult to obtain a qualified employees and contributed to the failure of business.
Gvst	Environment indicators	Lack of financial support in the area made it difficult to gather sufficient capital and contributed to the failure of businesses.
InfC	Environment indicators	Inadequate infrastructure conditions where the business was located made it difficult to transport for consumer to buy goods.

Capital (Capt), Financial record (Frfc), Working capital (WCap), Management Experience (MgEx), Business Plan (Bpln), Professional Advisors (PrAd), Education level (Educ), Leadership Skills (Ldsk), Product/Service Timing (Psti), Marketing skills (Mrkt), Customer complaint (CuCm), Business age (BAge), Under-skilled labour (Uskl), Government support (Gspt), Infrastructure condition (InfC).

Independent Variables

For the 15 independent variables, age of firm and management experience are ratio measures. Capital, financial record and financial control, working

capital, business planning, use of professional advice, educational level, leadership skills, product/service timing, marketing skills, customer complaint, under-skilled labour, government support, infrastructure condition are measured on a 5-point scale.

Statistical Analysis

Three levels of statistical analysis were completed. Firstly, descriptive analysis is carried out to understand the mean differences of the variables used in the samples. Then, diagnostic tests such as the multicollinearity test (the Pearson correlation test to understand the relationship between the independent variables and the strength of their linear association).Last, themodel was tested using logistic regression, using success or failure as the dependent variablewith the 15 independent variables.

Results and Discussion

Descriptive Analysis

Table 3 report the summary statistics of all the independent variables for both unhealthy and healthy SMEs. Mean difference test is conducted between the unhealthy and healthy SMEs and the findings are in line with the expectation of the study. There are significant differences in the characteristics between the unhealthy and healthy SMEs. The results show that WCap,MgEx, PrAd, Educ, Mrkt, CuCm, BAge and Gvst are significantly difference at the 1 percent level. Furthermore, the variablesUsklis significantly different at the 5 percent level while Ldskis significantly different at the 10 percent level. However, the variables such as Frfc, Capt, Bpln, Psti and InfCare insignificant.

Overall, mean comparison between the two groups suggests that SMEs with tight working capital control, greater management experience, presence of a professional adviser, havemarketing skills ofowner's prior starting the business, have effective and efficient communication with customers, years of operations and adequate government support will increase their chance of success. Moreover, SMEs with skilled workforce and demonstration of strong leadership skills from top managementwill have a greater chance of success.

A Pearson correlation test was employed to investigate the relationshipbetween the independent variables and the results are summarised in Table 4. Thefindings show that the correlation among the variables is relatively low rangingfrom 0.0020 to 0.339 except between MgEx and BAge wherethe correlation

is 0.866. To further verify that multicollinearity is not a problem to this study, inflating factor (VIF) is reported in Table 3. If the variables have VIF values greater than 10 or tolerance values lower than 0.10, then they are considered to have multicollinearity problems (Gujarati, 2003). Since all the variables have VIF values that ranges from 1.160 to 5.519, this suggest that no multicollinearity problem exists in the study.

Table 3: Descriptive statistics					
Varia bles	Mean	Std. Dev	Mean	Std. Dev	Sig.	VIF
Frfc	4.4222	0.6530	4.2143	0.6820	0.611	1.748
WCap	3.7222	0.7499	4.0000	1.3969	0.002***	1.496
Capt	3.9111	1.0238	3.5238	1.0178	0.461	1.348
MgEx	25.244	11.188	7.9762	2.9918	0.000***	5.519
Bpln	3.6699	1.1548	3.4676	1.1227	0.233	1.160
PrAd	3.6111	0.9081	3.9286	0.7775	0.006***	1.163
Educ	2.7889	0.9656	2.1905	0.3974	0.000***	1.310
Ldsk	3.8111	0.9349	3.9048	0.7262	0.063*	1.442
Mrkt	3.6333	1.0648	2.8095	0.6713	0.000***	1.821
CuCm	3.2925	1.3648	2.0948	0.7861	0.000***	1.351
Psti	3.2468	1.2111	2.3242	1.2219	0.570	1.271
BAge	23.289	11.364	6.0952	2.5164	0.000***	5.016
Uskl	3.5556	0.9494	3.4524	0.7715	0.047**	1.233
Gvst	4.3111	0.7289	4.1429	0.3542	0.000***	1.462
InfC	1.8333	0.6910	1.7143	0.7083	0.435	1.256
N	90		42			

*, **, *** significant at 10 percent, 5 percent and 1 percent levels respectively.Capital (Capt), Financial record (Frfc), Working capital (WCap), Management Experience (MgEx), Business Plan (Bpln), Professional Advisors (PrAd), Education level (Educ), Leadership Skills (Ldsk), Product/Service Timing (Psti), Marketing skills (Mrkt), Customer complaint (CuCm), Business age (BAge), Under-skilled labour (Uskl), Government support (Gspt), Infrastructure condition (InfC). Number of observation (N).

Validity and Reliability of the Model

Table 5 presents themodel parameter estimates from logistic regression.The Hosmer and Lemeshow(HandL) testis a statistical test for goodness of fit for logistic regression models. HandL test is widely used to answer thequestion on how well does the model fit the data. Overall, model fit the data because the observed and expected event rates insub-groups are similar which indicate that the models are consistent with thedata. The HandL Chi-square of 0.2924 and a high p-value 0.743 implies that the models fit the data.Similarly, thelogistic regression results testing the model chi-square was 109.749 with the model significancelevel less than 0.01 (p = 0.000). Results support the model's validity as it willidentify a group of SMEs as healthy and unhealthy more accurately than randomguessing by 99 percent.

Table 4: Pearson correlation analysis														
	Frfc	**WCap**	**Capt**	**MgEx**	**Bpln**	**PrAd**	**Educ**	**Ldsk**	**Mrkt**	**CuCm**	**Psti**	**BAge**	**Uskl**	**Gvst**	**InfC**
Frfc	1														
WCap	-0.4450	1													
Capt	-0.0225	-0.0390	1												
MgEx	0.272**	-0.1654	0.1116	1											
Bpln	-0.0229	-0.0305	0.1307	0.0793	1										
PrAd	-0.1495	0.0934	-0.0425	-0.206	0.0498	1									
Educ	0.0639	0.1129	0.1079	0.200*	0.0685	-0.1619	1								
Ldsk	-0.3480	0.0525	0.0300	-0.0582	0.0020	-0.0403	0.0960	1							
Mrkt	0.240**	-0.0275	0.347**	0.381**	0.0680	-0.0582	-0.0963	-.308**	1						
CuCm	0.270**	-0.1436	-0.0655	0.319**	0.0167	-0.0548	0.0791	-0.0068	0.301**	1					
Psti	0.209*	-0.1678	0.0625	0.262**	0.211*	-0.1475	0.1388	-0.187	0.194*	0.172*	1				
BAge	0.1359	-0.0272	0.0196	0.866**	0.0586	-0.1119	0.257**	-0.0703	0.259**	0.284**	0.235**	1			
Uskl	0.0055	-0.1522	0.1042	0.0540	0.0831	0.0569	-0.0615	0.0878	0.177*	0.203*	0.0933	-0.0305	1		
Gvst	0.339**	-0.293	0.1298	0.1457	0.246**	-0.207	0.0776	-0.173	0.202*	0.1406	0.316**	0.0175	0.1368	1	
InfC	-0.0392	-0.0667	0.204*	0.0729	0.1242	0.0153	0.191*	0.197*	0.0109	0.0446	0.0157	0.0363	-0.1579	-0.1040	1

*, **, *** significant at 10 percent, 5 percent and 1 percent levels respectively.Capital (Capt), Financial record (Frfc), Working capital (WCap), Management Experience (MgEx), Business Plan (Bpln), Professional Advisors (PrAd), Education level (Educ), Leadership Skills (Ldsk), Product/Service Timing (Psti), Marketing skills (Mrkt), Customer complaint (CuCm), Business age (BAge), Under-skilled labour (Uskl), Government support (Gvst), Infrastructure condition (InfC).

Furthermore, the Cox and Snell R Square is 0.66 signaling that the model is able to predict 66 percent of the variability in the scores. The model classified correctly 88 outof 90healthy SMEs representing 97.8%, and 40 out of 42unhealthy SMEs correctlyrepresenting 95.2 percent with an overall predictive accuracy rate of 97 percent. Therefore, the results support themodel's ability to predict healthy and unhealthy SMEs in Cambodia due toa high predictive value as the model will accurately predict a specific business as healthy and unhealthy 97 percent of the time compared to 50 percent for random model.

Table 5: Logistic regression model test results Cambodia				
Model parameter estimates Variables name	**Model Coefficient**	**Odds Ratio**	**Wald**	**Sig.**
Constant	16.8099	19972766%	2.1398	0.144
Frfc	-0.2760	-24.1%	1.748	0.283
WCap	0.6690	95.2%	1.3308	0.080*
Capt	-0.2213	-19.9%	0.1323	0.716
MgEx	-0.1698	-15.6%	0.4184	0.518
Bpln	-0.6742	-49.0%	1.1655	0.280
PrAd	1.0412	183.3%	1.1866	0.276
Educ	-1.9394	-85.6%	2.6924	0.004***
Ldsk	0.2802	32.3%	0.0685	0.794
Mrkt	-2.2710	-89.7%	3.6619	0.050**
CuCm	-1.0314	-64.3%	3.3588	0.067*
Psti	-0.0188	-1.9%	0.0010	0.975
BAge	-0.7757	-54.0%	6.9903	0.008***
Uskl	0.7641	114.7%	0.5633	0.453
Gvst	-0.1407	-13.1%	0.0149	0.903
InfC	-0.2149	-19.3%	0.0347	0.852
Model test results				
-2 Log likelihood	23.755			
Model Chi-square	109.749			
Model Significance	0.000			
Cox and Snell R Square	0.66			
Hosmer and Lemeshow Test	0.2924			
Classification result				
Correctly Classified Cases				
Healthy	97.8%			
Unhealthy	95.2%			
Overall	97.0%			

*, **, *** significant at 10 percent, 5 percent and 1 percent levels respectively.Capital (Capt), Financial record (Frfc), Working capital (WCap), Management Experience (MgEx), Business Plan (Bpln), Professional Advisors (PrAd), Education level (Educ), Leadership Skills (Ldsk), Product/Service Timing (Psti), Marketing skills (Mrkt), Customer complaint (CuCm), Business age (BAge), Under-skilled labour (Uskl), Government support (Gvst), Infrastructure condition (InfC).

Reduced Model for Cambodia

The most significant variables at 90 and 95 percent confidence interval from logistic regression model were five that distinguished healthy SMEs from the

unhealthy ones (table 5). These variables are working capital(t-value, p = 0.080), owner's education level (t-value, p = 0.004), owner's marketing skills (t-value, p = 0.050), customer complaint (t-value, p = 0.067) and age of the business (t-value, p = 0.008). Therefore, the reduced model function for Cambodia can be expressed as:

$$Z_i = \beta \text{ (WCap, Educ, Mrkt, CuCm, and BAge)}$$

Table 5 present the odds ratio for the significant variables. An odds ratio is a measure of association between an exposure and an outcome. The odds ratio represents the odds that an outcome will occur given a particular exposure, compared to the odds of the outcome occurring in the absence of that exposure.When a logistic regression is calculated, the regression coefficient (b1) is the estimated increase in the log odds of the outcome per unit increase in the value of the exposure. In other words, the exponential function of the regression coefficient (eb1) is the odds ratio associated with a one-unit increase in the exposure (Szumilas, 2010).The odds of WCap is 95.2 percent, this implies that there is 95.2 percent likelihood that a business with insufficient business resources (such as finance, raw material or finished product, equipment) will be unhealthy or unsuccessful.Furthermore, in terms of owner's education (Educ), the result shows thatbusinesses that start with owner having a higher educationcan increase their success by 85.6 percent. Or in other words, 85.6% likelihood that a business will be healthy or successful if the owners have higher education when they established the business. For marketing skills (Mrkt), the explanation could be; For each additional scoretowards skilled marketing, the odds of "healthy" (which is coded 0) will increase by 89.7 percent. Meaning that 89.7 percent chance that business will be healthy or successful when the owners has marketing skills.The odds of CuCm is 64.3 percent, this implies that there is 64.3 percent likelihood that businesses that received customer complaints most of the time have a greater chance of being healthy or successful. The result for business age (BAge) shows that there is 54 percent likelihood that younger businesses are more prone to be unhealthy.

Individual Variables in the Model

The finding shows that working capital (WCap) is positively related to business success. This indicates thatsmall businesses that have a tight control over working capital policy are likely to fail. Small businesses find it difficult to compete with large firm due to size, experience, market base, resource capabilities among others and therefore to attract customers, they will have to soften for example their credit policy. Many companies increasesales by being generous with their credit policy to retain and attract new customers, if the credit policy is too tight, sales will be lost.The useof trade credit can help firms fight for market share i.e. a firm that seeks to grow at the expenseof another firm's business may seek to increase its sales by increasing the financing it offerscustomers. Similarly, firms facing profitability problems may seek to increase sales or marketshare by increasing the provision of commercial credit to clients (Petersen andRajan, 1997;Molina andPreve, 2009).However, as the level of receivables increases, the cost of investment in receivable also goes up, but the profitability of additional sales generated exceeds the added cost of the receivables (Periasamy, 2009). Therefore, a firm's added expected profitability on the additional sales is one of the important aspects of determining the size of account receivables.

Education (Educ) is negatively associated with business success. The finding shows that business owners withhigher education who start a business have a greater chance of being successful than owners withouthigher education. Individuals that have a higher education most have acquired certain knowledge and skills and have develop capabilities that facilitate personal development in certain professions and might help them to better manage their businesses thus increasing the probability of success. Higher level of education can provide the necessary cognitive skills so that the individual can better evaluate the business opportunities as they arise which leads to a greater potential for productivity and efficiency(DavidssonandHonig, 2003; Gauthier, 2006; Jiménez et al., 2015). Furthermore, business owners with higher education tend to have increase self-confidence, facilitating their exploration of entrepreneurial activity and reduce perceived risk which are traits to being a successful entrepreneur (Jiménez et al., 2015). The finding is consistent with human capital theory that argues human capital leads to business success (Becker, 1964).Organizations and firms tend to increase their investments inhuman capital in order to improve the performance outcomes of individuals which in turnmay contribute to the company's economic growth(Unger et al., 2011).

Furthermore, marketing skills (Mrkt) of business owner is negative and significantly related to

business success at the 5 percent level. The result reveals that business owners with marketing skills have a greater chance of being successfulcompared to business owners withoutmarketing skills. Marketing skills and capabilities can help business sense and react to market development and changes such as change in consumer taste and preferences, competitors' moves, technological changes. These, in turn,canenable businesses to leverage on their capabilities and resources for value creation and able to anticipate customer explicit and latent needs. According to Alharbi Adel Saleh (2015), this will therefore help companies avoidshocks from new waves of competition based on new technologies and new value propositions. The finding is also consistent with previous studies (Alharbi Adel Saleh, 2015; Bharadwaj et al. 1993; Narverand Slater 1990) were they found that marketing skills gives businesses the ability to generate adequate information about competitor actions and reactions and then draw adequate intelligence to counter on the acts of its rivals. This allows businesses to deliver superior customer value which helps the firm to also develop the basis for a competitive advantage (Porter, 1985).

Additionally, customer complaint (CuCm) is negatively related to businesses successand significant at the 1 percent level.The finding shows that businesses that received customer complaints most of the time have a greater chance of success than firms that received less customer complaint.When customer complaint highlights a problem, whether on the firm's product, employees or internal processes, the company can investigate and improve to prevent further complaints in the future. Often discussed anecdotally is the fact that for every onecomplaining customer, there are perhaps as many as 20others with the same problem who remain silent (Plymire1991). Accordingly, studies have found that customers' whose complaints are handled quickly can often turn into loyal customers and even brand advocates. Customers who have a complaint handled quickly go on to spend more on future purchases thereby increasing the probability of success (Alharbi Adel Saleh, 2015; BellandLuddington, 2006;Bell andMengüç 2002; Brodie et al., 2011;Groth, Gutek, andDouma 2001; Lockrey, 2015; Reichheldand Sasser, 1990). Through handling customer complaint, organization can grow and develop, and in satisfying customers beyond expectations to lead to repeat transactions, which subsequently could lead to the thriving of business operations and overall performance.

Age of business (BAge) has a negative coefficient and significant at the 1 percent level. The finding indicates that younger businesses are more likely to be unhealthy compared with older businesses, thus, the longer the existence of an SME, the higher the chance of it to be healthy. Probably the SME has vast experience and management capabilities (expertise). Firms are able to tap into the relevant customer segment and provide differentiated products that meet demand which will subsequently help them in gaining customer loyalty and build up better rapport with suppliers (Majumdar, 1997). Long established companies are more likely to have competitive advantage and resource capabilities in their development stages from being young to being older, while young companies are more likely to suffer from resource and capability deficiencies (Thornhill and Amit, 2003). Additionally, this could be as a result of several firm's activities over the years. For example, mergers, absorptions, evolution from micro, small, medium to large may have happened over the years. These situations would be quite common given the nature of SMEs business. Previous studies also find that age of company is negatively related to bankruptcy (Abdullah et al., 2016; Altman et al., 2010; Blanco et al., 2007; Ma'aji, Abdullah andKarren, 2018; Ma'aji 2018; Shane, 1996).

4. CONCLUSION AND IMPLICATIONS

Issues relating to SMEs and failure prediction have been the focus of many scholarly and regulatory debates around the world. This is as a result of SMEs significant role towards economic development and sustainability. Therefore, early recognition and understanding of risks of business failure is important for establishing,sustaining, and growing a business and the economy in general. Entrepreneurs need to understand therisks of failure and acquire the variable resources identified in this study to improve theirchance of being successful. In summary, the results indicate that long established SMEs, businesses that handle customer complaint timely, has owner who possess higher education and strong marketing skills and have tight control over working capital, have a significantly greater chance of success in Cambodia.Thus, the findings of this study are important because they helppotential and existing entrepreneurs and other business leaders, policy makers andregulators, financial institutions, business consultants and investorsbetter understand how a business in Cambodia can succeed and avoid failure.

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