

MEASURING THE IMPACTS OF PRODUCT DEVELOPMENT ENGINEERING IN SUCCESS OF SMALL AND MEDIUM ENTERPRISES (SMES) IN KIGALI

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Abstract

In Rwanda, despite the uncontested fact that small and medium enterprises have been at the core-central of the economy transformation, but some are still struggling to remain to build and maintained a sustainable business. This study focusses on testing business legislation and development program impact on business success SME's in Kigali Rwanda, and have consider a survey question to 248 SME's business owners and manager, from nine sectors. The study discloses that business legislation has a significant impact on business success. While development program has appeared no having an impact on business success for managers and business owners. So, this study suggested that business owner and managers had more to receive from business legislation than development program. In Rwanda businesses expect more from business law that are vital for their business success. Cert key business success factors may vary according to the industry, the nature of the business, internal and external environmental factors. Here the speculation explanation to development program rejection maybe on the poor communication and poor reach and implementation to those who really need those programs. In a business environment where 70% of entrepreneurs are illiterate. At first this paper will be informative in clarifying development program meaning and role in Africa context, and will be useful for policy-makers, business stakeholders, in underlining new ways of supporting SME's business success in Kigali Rwanda.

Keywords: SME, Business Legislation, Development Program, Business success

1.0 Introduction

Poverty reduction in Rwanda has been remarkable, few years ago listed as one of the poorest countries in the world. Between 2001 and 2017 poverty in Rwanda has fallen from 77.2% to 55.5% alongside to the country aspiration to middle-income by 2035, are more 72 000 SME's sustaining the economic growth.

Small and Medium Enterprises, (SME's) are considered as one of the pillars of the economic structure. Studies shows that they represent about 90% of businesses and more than 50% of employment worldwide. Countries like America, Germany and Japan SME's definition goes according to the figure below.

Table 1: SME's Criteria

Type of Business	No. of employees	Rate of return	Financial position
Medium SMEs	< 250 employees	< 50 m. euro	< 43 m. euro
SME's	<50 employees	<10 m. euro	< 10 m. euro
Micro Business	< 10 employees	< 2 m. euro	< 2 m. euro

Source: World Bank

In emerging countries contribute up to 40% of the GDP. SME's around the world are categorized and are defined differently [1]. In Rwanda SME's definition was establish for the purpose of policy, it follows conditions as set by the world bank including items like size of the enterprise, net capital investment annual turnover, and number of employees. In Rwanda when using the term SME, it is considered to include micro enterprises as well as small and medium enterprises. The table below gives a clear picture of the definition of SME in Rwanda [2]

Table 2: SME's Definition in Rwanda

Size of the Enterprise	Net capital investments (million RWF)	Annual Turnover (Million RWF)	Number of Employees
Micro Enterprises	Less than 0.5	Less than 0.3	1 to 3
Small Enterprises	0.5 to 15	0.3 to 12	4 to 30
Medium Enterprises	15 to 75	12 to 50	31 to 100
Large Enterprises	More than 75	More than 50	More than 100

Source: Ministry of Trade Rwanda

SME's are well defined and objectives oriented based on the government trajectory, their more and more factors highlighted by research slowing down their expected growth. According to MTI, SME's are mainly facing difficulties in regard to macro-level, similar to large organization, with issues on the legal environment, infrastructure, strong supporting integrated industry with a required expertise [3]. and even if country like Rwanda receive large technical and financial support from international organization and develop country the country record around 75% business failure. This research attempt to find out how from business owner and manager perspective the impact of business legislation and development program on business success [4]

2.0 Research Framework

Developed by Rockart and Mintzberg 1979-1981 business success theory line on micro and macro business factors that are used in formulating business strategy for competitive advantages. This study looked at the macro-environmental factors, economic, social culture, ecological physical and technology. With a focus on Political and legal impact on SME's Business success. In the other hand, Development programs, they are activities that support common beliefs and objectives; they concerned projects, policies, and strategies. According to Eliot and Mihalic developing program are input process and out.

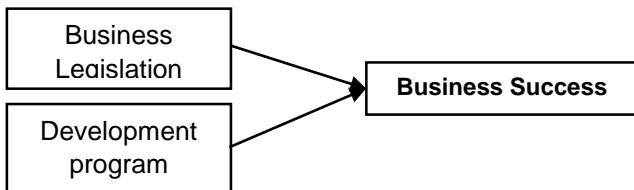


Figure 1: Research Model

2.1 Business Success

First introduced by [5] but mainly elaborated by [6]. The business success theory is developing into an integration of

factors that Rockark and Mintzberg believe are key element to success story. the theory explains as well the role of entrepreneurs, leading success and profitability of the organization, for them leadership play a major role in first of all identifying the company-based capability what they call company resource and skill. Then the characteristic, nature of the business, taking in consideration the Age, how long the business has been operating. The size how many employees or what is the revenue, and at last the location. In additional to business characteristic there is the environmental condition that play. This theory reflects the concept that in the market place some business gain advantage according to their existing position, the choice of their industry and the time spend in experimenting it. SME's biggest challenge is to locate themselves to a competitive arena [7]This is due to their lack of ability to conduct proper investigation [8].

According to the World Bank, SME's in the sub-Saharan Africa are highly subject to fail in their first years than SME's in the South East Asia. Simply because of the impact of the internal and external environment [9]. Challenges facing SME's business growth, are route to the distance to business success theory application combining the SME's business characteristics, the environmental conditions, Leadership management and the right strategy formulation to unlock SME's business potential [10]. The issue of business success or failure in Rwanda just related to the above mention through a dissociation related to business knowledge, conductive environment and the readiness of a market that sounds economically bankrupt [11].

Business success factors theory consider that environmental condition is one of the keys to business environmental condition practically looks into the effect of factors like competition, politic, legal, market condition, demand, economy and organization capability. These elements cement the foundation of prosperous business.an Environmental analysis is then to predict the company future trajectory or to define the strategy that the company will explore in a near future. Internal and external factors affecting business success where discuss in Moscow by the professor Vramovish as the basic knowledge that will guide small and medium enterprises to the global market [12]

A research on evaluation of the effect of business micro and macro determinants, by [13] shows that factors like Suppliers, resellers, customers, competitors and the general public were having less effect on business success compare to macro environmental factors like demographic forces, economic factors, physical forces, innovation and technology factors, political and legal factors. Trend and social factors although both were determinants for business success macro factors have more impact on business. Normally to ensure business success it is important to focus strategy around all factors that are represented in the business environmental analysis. Good marketing strategy will also consider the relationship between different element of macro and micro environment to improve the success of the organization marketing campaign [13]

2.2 Business Legislation

Collins dictionary define legislation as the process involving or related of making and passing laws. [4] it is a norm that describe the power of function legislating, law making or the law giving, is the relating part of proposed laws. Business legislation is then all laws that dictate how business should run. In this research, legislative determining the good functioning of the market place or industry. Legislative is the legal entity in charge of regulating small and medium enterprise in an environment that is not in their favor. [14] Define business legislative as the security that can be by passed by politic when the business community is engage, because government can change the rules and regulations at any time legislative function appear in business as a major risk.

Business Legislation small medium businesses in Africa have always been in revendication of a certain attention to the government appreciation. The legal perspective of doing business seems to have limits in developing an environment that wine and emancipate small business success [15]. Legislative is from the competence of the high chamber of law, in Kigali this is organized and vote by the parliament house. African countries have recorded been highly impartial when it comes to business law. Actions contributing to a high percentage of business failure in the continent. Country like Denmark, Business regulation when it comes to SME's have made entrepreneurs one of the most successful in the world [16]

[17] Many think that solution so far is still not in place, to boost SME's that are highly profitable in Africa. In Rwanda Legislation have an important role to play due to the geolocation of the country certain laws related to taxation and business regulation are needed to transform the economy [4]. The country is facing a huge competition from the neighboring country like Kenya, Uganda and Tanzania, mainly because of their easy access to the sea. In Rwanda local business owner challenges have been recorded on the logistic and taxation, Added to their daily business struggle[4]

2.2 Development Program

Cambridge dictionary define development as, procedure in which someone or something grows or changes and becomes more advance [18]. And Program, as a series followed for a performance or operation. The operational definition put in consideration the treasure of development program connecting the missing particular together while creating rapid wealth. Development program are defined as initiative put together the expertise and the market that guaranty business success in small and medium enterprise. More development program is the portion of the transformation, planning, and process focusing on identifying major venture needs and establishing urgencies with planning partners to support the long-term development of the government or community transformation [19]

Development program, literature has been exposing the effort of large firms, supporting their workers with additional training, knowledge to perform better. U. Devika article underline the important role of development program enabling

the participant to appreciate skills, capabilities, strength and work value [20]. Development program refer to training education or skill but in this context is more into the resources organized to follow up small and medium enterprise in their emancipation, guiding them from failure. In the literature review it will be question to highlight the accomplishment of foreign aids as major support to development program to small and medium enterprises in Africa.

African continents and other developing country, through assistance from the World Bank and IMF have created programs to fight against poverty in promoting and sustaining small and medium enterprise through continues program [21]. The initiative comes as well to fight corruption and embezzlement from local leaders not putting in place a conductive environment for success. Reality that A. Hull & P. Scoff support on their article handing to firms' secret for business success through corporate archival collections. This in the context of firms in Africa is real and need to be tested on success factors of small and medium enterprise in Rwanda [22].

3. Research Methodology

Measuring Instruments, the study used a closed-end structured questionnaire as measuring instruments to make the results valid and reliable as per the content and predictability of research. The questionnaire was used to measure the variables across the SMEs in Rwanda. Most of the study variable measures were extracted from the literature review which was the main source of information used to formulate the questionnaire for this study.

The Questionnaire in this study consists of four parts, which are (A) question on the Demographic Characteristics, (B) Business Success (C) Business Legislation and (D) Development Program questions. The construct was measure with 36 questions using five-point Likert scale anchored considering 1 as non-effective, to 5 as highly effective.

Business legislation, is one of the very important topics in SME's, the common believe question the government politic and the legal on business failure, more on the laicism that certain state take time to released and dramatically affect small and medium enterprise. This questionnaire is to find out how legislative can have a positive or negative impact on SME's success. In this questionnaire Legislative items are 8 and all focusing on area like the business environment law like, the government support mechanism to SME's, entrepreneur regulation acknowledgement. These items are adopted from previous research as, 1 and 4, from (Shannon E. Gray, 2019) with a Cronbach alpha of 0.95 and 2, 3 and 5 adopted from (Neyers, 2019) with a Cronbach alpha of 0.899. Finally, 6, 7, and 8 from (Beltgens, 2017) with a Cronbach alpha of 0.789. It was question to get an opinion from respondent through a series of 8 items, these which were measured with 5-point scale on increase effect in order. (1) Not effective, (2) Less effective (3) Effective, (4) Very effective and (5) Highly effective. Below is the table summarizing the source used to measure business legislation questionnaire?

Development program questionnaires are found complex from entrepreneurs and business owner because they're not well understood by many of them. At the same the variable is very

important indicators or booster for small and medium business success. Development program questionnaire will bring a clarity on the opportunity that it carries to business owners and employees and the economy growth. In this part this research has used 8 items, these items are on investment opportunities as (FDI) Foreign and Direct Investment, the training that comes with the investment, and the opportunity that the development program open for SME's. All 8 items, were measured on Likert scale with 5 on a gradual frame of effectiveness, in order from 1 to 5. (1) Not effective, (2) Less effective (3) Effective, (4) Very effective and (5) Highly effective. The items 1,2,3,7 and 8 were adopted by (Yuanlu Niu, 2016) with a coefficient of 0.67 and items 4, 5 and 6 adopted by [8] with 0.699.

The research sample comprises a number of officials running small SMEs in the industrial sector, along with a group representing the supporting bodies of SMEs in Rwanda. In this study to estimate the sample size, it will be based on, Raosoft software and Cochran's formula. Raosoft software guarantees an accuracy of up to 95% of confidence and 5% margins error. According to the table above, Questionnaires were distributed to the sample of 322. The distribution method here relied on a face to face meeting during the National business forum in Kigali third December 2019, where all SME's are represented. Using paid helpers who have managed to distribute and monitor SME's owners and managers throughout the process. Note that Kigali business forum duration was around 10 days, time that was sufficient to get the majority of the respondents to file up their forms. 322 questionnaires were distributed and 275 were returned. However, these questionnaires were then carefully reviewed to ensure that they fulfilled the criteria for analysis. 15 were found incomplete and removed, 260 questionnaires were considered completed, 12 forms were kept aside since 248 is the number need in this research according to the sample size calculation with Roasoft.

Overall, the study represents 75.7% of the total questionnaires distributed. There were 62 forms, comprising 15 incomplete forms and 47 not returned, and representing 24.29% of the total. The non-respondent questionnaires were not concentrated in a particular sector, but spread over the different sectors and which therefore did not affect the results of the study. SMEs in

Rwanda were chosen out of nine bodies assigned to perform such tasks. The sample consisted of 45 people that received the questionnaire forms, of which 36 responded, a response rate of 80%, while there were 9 forms not returned which represent 20%. Five persons were selected from each of the nine bodies.

Table 3: Data Collection

Business Success	Minimum Sample Size	30% Increase	Returned
Kigali Rural Area			
Small <15	72	94	92
Medium > 20	175	228	158
Total	247	322	250

Source: Data Collection

4. Result

4.1 Validity and Reliability of the instrument

Validity is at the center fundamental feature of measurement, determining if the instrument can measure the envisioned item of measurement [23]. Validity is considered as an uncontested scale to effective study. [3] came to the conclusion that if the project based is deemed as invalid, in that condition the entire project is considered as baseless and without value. Validity is important in the research, because it helps to identify the accuracy and stability of measurements regarding the factors of the research or independent variable. (Finance, Marketing, Management, profit, Legislative and Development program) and dependent variable, (Business Success). In this study the validity is based on the numerous validities available on scholar, allowing to implement, measured content validity, then construct validity. For instance, pragmatic judgment. Collection is using instrument and testing the validity of the content via a pilot test. In this research it will be questioned to seek for above mentioned stages.

Table 4: Reliability

No.	Variables	Cronbach's Alpha
	Questionnaire designed for SMEs Business Success	
5	Business Legislation	0.779
6	Development Program	0.635
7	SME's Business Success	0.703

Source Validity and Reliability for this Study

The reliability of an instrument is based on the ability to produce consistent measurements considering different set of

items (Fraenkel et al., 2014). For Field (2013), reliability is the quality measurement that will certify the consistency of the instrument, confirming the items in an instrument which will

then measure a particular concept. Here to test the reliability result should be similar from different measurement, meaning the more the result from a different measurement are identical, the more reliable is the instrument [12]. In SEM, the number of errors from the measurement in a variable that can be perceived in a correlation between the factors and the construct [7] Reliability- The findings show the “success variables” were reliable with internal consistency values ranging from 0.491 to

0.877. Cronbach's Alpha was used to determine the reliability of the questionnaire forms (reliability coefficient) to examine the generalizability of results. The table shows that the coefficient values are within the acceptable values for the question items.

4.2 Data Analysis

Table 5: Hypotheses Testing, (M) & STDEV

Hypothesis	Path Coefficients	T Statistics (t-value)	P Values	Sample Mean (M)	Standard Deviation (STDEV)	Decisions (H1)
H1. Business Legislation -> Business Success	0.468	4.485**	0.000*	0.462	0.104	SUPPORTED
H2. Development Programs -> Business Success	-0.013	0.122	0.903	-0.006	0.104	NOT SUPPORTED

Source: Hypotheses Testing

The table shows the path coefficients, t statistics, P values, mean and standard deviation rating that point out the perceived importance of business legislation and development program related to business success. Business legislation (Mean 0.462) is considered to be the most important factor in business success while Development program (Mean -0.006) it is perceived to have less importance on business success of SME's in Kigali Rwanda.

confirmation of much of the illustration in chapter two, but result also offer new insight and data regarding the internal and external factors affecting SME's business success in Kigali Rwanda. In conclusion hypothesis result will be analyzed based on a supported or not supported outcome. Here are the result and discussion of the six-hypothesis formulated in the first chapter of this research.

H5: The result indicated in this study that, there was no significant relationship between Business Legislation and SME's business success in Kigali Rwanda. ($P < 0.05$) thus H5 is supported in this study.

According to the result, H5 indicate that there is no significant relationship between business legislations and SME's business success in Kigali Rwanda. This result reflects on the effort that is made by the government of Rwanda to facilitate small business integration in the national and international arena. (MINICOM, 2018) this result also mean that large number of business owners and managers are more aware of business legislation and its impact on business success in Kigali Rwanda. In addition, large number of literatures believe that, business legislation is building effective reform pipeline. It is, an ascent that the government of Rwanda have invested into. Regulation in developing country have not yet proven its incoherence to business failure. The references in this regard show a situation in the way of proposition, coming to highlight the effectiveness of legislative reform on business [25]

In the line [26] concluded on the positive impact that has business legislation on business success. Successful implementation reforms, speed control hold on the credibility of a country to create wealth. On its own is a resource that is more valuable than gold and diamond [27] said in Africa resources have no value the value will be considered when the resources will stop working for few and start serving the

5. Discussion

The present research was carried out on the impact of internal and external factors on business success of Small and medium enterprises in Kigali Rwanda. As SME's business success value become more tangible to country economy. Nevertheless, there is a higher percentage of SME's that never made it to the survival stage [24]. Rwanda is by itself a very complex environment that suggest positive signal through available business opportunities at the same time that record a large number of business failure. Previous research had explored several questioning and hypothesis to this issue. But it is not credible to attribute SME's attrition to any single factor that might or not be the cause of SME's failure. Therefore, this research will study the relationship between internal factors (finance, marketing strategy, managerial competence, and profits), external factors (business legislation and development program) whether or not, have a relationship on SME's business success in Kigali Rwanda.

This section examines the findings of this study after testing a specific sample of 248 business owners and managers, result in comparison of the large set of references expressed in the literature review will be discussed. SME's business success findings in Kigali Rwanda, certainly comes with support and

public. This will only be possible when the legislative application of laws that allow business to prosper and corruption to vanish. One of the important aspect of legislative reform and implementation as we have seen in Rwanda was on the change in methods, and support of basic resources needed by businesses like energy and water supply, rehabilitation of free zone, opening a port although the country have no access to sea water and many other [28]

H6: The result indicated in this study that, there was no significant relationship between Development Programs and SME's business success in Kigali Rwanda. ($P < 0.01$) thus H6 is not supported in this study.

According to the result, H6 indicate that there is no significant relationship between development programs and SME's business success in Kigali Rwanda. SME's owner and managers have rejection the implication of development program effect on business success, cert due to the distance between businesses and the different support groups. An example of the government support to local business is only seen to rural business in form of taxes. The lack of resources and the large number of SME's to support doesn't pay justice to the initiative. Cert the large number of articles and theories have a conclusive statement wish justify development programs with items like government support, training, skill, transfer of technology and international aides when it comes to developing countries have plaid an incontestable role in emancipating SME's business success.

6.0 Limitation

This research has considered several literatures around business success factors and its impact on business. Looking at the secondary data that inspire this research, problem occur where the content has limited information, inaccurate in local business information and studies published more than 5 years ago. The most accurate documents were published by the minister of trade and industry in 2011 presenting the current SME's cluster and the 2020 middle income projection. This appear as a limitation for this research because, secondary information accuracy is important point of view or based comparison to project the outcome of the research or just improve in a progressive way knowledge. One of the reasons to this limitation were since the independence of Rwanda and the genocide the country had accumulation slower progress in the academic areas and many more.

To the primary data collection, it was considered that a lack of time and willingness by entrepreneurs to complete questionnaires might create problems in obtaining a representative sample. This study was focused only on existing businesses and did not consider proposals for new businesses. To deal with these issues, three (3) months [29] were allocated to the field work. The intention was to provide the researcher and research assistants enough time to explain the purpose of the surveys in more detail to the target population. This action assisted in creating willingness for respondents to participate

From the pilot research consideration, a conclusive approach to SME's business success in Kigali Rwanda has shown that finance, Profits, Managerial, and Development program have had an impact on SME's business success. The sample

considered here were supported. But the final research has shown that business success in Kigali Rwanda especially in the rural area, don't necessarily have a significant impact of the outcome of SME's business success. From an ethical or theoretical point of view the research limitation is highly noted on this point. But as an outcome it is surely important to have this research recorded on these specific results. To sum up, conclusive result according to the pilot study have made the outcome cert accurate to the population but critical in cohesion with the primary data.

Language barrier was one of the major issues. Rwanda is a bilingual country from the constitution, but the reality after this study shows that, up to 70% of the population speak only either Kinyarwanda, which is the local language. French, which it used to be the national language and English which is the current since 2008. From an outside perspective, the researcher at first were confident through an English questionnaire not knowing the reality on the ground. As well as the questionnaire were made for business owner and manager of the rural area of Kigali. It is important to note that Kinyarwanda is the language of business, the language of exchange and the most popular in the country. The researcher had to get an assistant to help translate and facilitate the communication with the sample undergoing the study.

Business owners and manager reticence toward the outcome of the researcher investigation. It true that survey can be misunderstood when the respondent feels like it been giving to much of information. In this case it was a challenge to convince respondent of the importance and the motif of the research. We have to admit the country close culture and suspicious believed when is not yet a trend to have students questioning your ability to run your business. Another important point was on the Communication tools, internet and transportation the challenge came where compare to other countries this tool is important to run easily a questionnaire, but it appears four time costly than for researchers done in Asia or Europe.

7.0 Conclusion

As learned the demographic description can play a critical role in findings the origins of incompatibility. The literature review around business success and SME's have put numerous of options indicating the important of each one of the variables tested. this study has provided valuable insights into relationship between business owners and managers characteristic and factors that were used to structure SME's business success approach. The result shows that finance had a considerable impact on business success in theory but in practice according to the data use here there is no significant relationship between finance and business success. Same goes to the rest of the independent variable. Marketing strategy and business legislation have shown a very different outcome, there were found significant to the business success of SME's in Rwanda. The findings of this research give a very different approach to researchers and businesses a strategy that will certainly impact on SME's business success in Kigali Rwanda.

8.0 Recommendations for Further Research

Business legislation have a significant impact on SME's business success in Kigali Rwanda. For the past few years, the government of Rwanda has started promoting the SME's and have created a bridge that simply shows to SME's Owner their importance in SME's business success. Business owner and business managers have cert responded positive to this important point, but it is important to recognize the implication of business legislation and business especially from those SME's owners or managers (Jasmine, 2016). Business legislation research in future research may look into the substance not only focusing on factors that allow a round table between SME's and legislators but what is needed in a global economy to be competitive and successful SME's.

Clear legislation governing SME's activity is needed. A single body should be established for supporting, funding and licensing small business activity, helping to solve the problems they face promptly, and completing all the paper work related to SMEs in one place. Customs duty advantages should be given to imports for the production processes of SMEs, such as a material, machinery and packaging materials. Concerning Rwanda and its Geographical condition existential questions should be thinking about the future competitive advantage in the regional environment. It seems like the economy of the region just replicate itself differentiation can be implemented at the legislation level changing the course of SME's activities in the region creating a unique approach on SME's business Success.

Part of Africa SME's are conditioned with IFM and World Bank agreements. Situation that keep small business focusing their efforts on economic activities that will never raise the country business environment. The difficulty with businesses as mentioned before are to reproduce the same approach in all African countries which are all center on agriculture or farming. Processing and manufacturing are mainly imported (Mokata, 2015). Development programs are not well understood by the population as well as the government. More research should be done on the best approach of assistance from the government to the small business, before looking forward help that are not needed in the faster growing economy like Rwanda.

In this research development program was consider not significant. As mentioned, this activity is fully controlled by developed country that has presented their idea as ultima resource of knowledge. [30]. Think that the first criteria of business success are based on the differentiation, product or strategy. [31] believes there is no opportunity in repeating the past. Many of the major company today have created wealth base on new ideas. Africa in particular Rwanda has a problem on knowledge economy, but the approach of development program should be written or research with factors that allow innovation. Development program literatures tend to go around already know process. Training on primary economy knowledge.

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