An Investigation of Strategic Factors Affecting the Performance of Manufacturing Based Small and Medium Enterprises (SMEs) Operating In Batticaloa District in Sri Lanka

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Abstract
Small and Medium Enterprises (SMEs) play a pivotal role in the development of the country. It has made significant contribution to industrial production, export and employment generation and very much important for developing countries like Sri Lanka. The objective of this study was to identify the underlying strategic factors in a collected data set that represent to indicate to the performance of small and medium enterprises (SMEs) in Batticaloa district in Sri Lanka. The analysis based on the 150 numbers of owner / managers who responded to a questionnaire survey conducted on randomly selected samples of manufacturing based SMEs which are operating in Batticaloa district in Sri Lanka. The study examined six factors namely financial, management, marketing, technology, infrastructure and government regulation that influence in the performance of SMEs. In the beginning phase of this research, pilot study was conducted to verify the reliability of questionnaires through Cronbach’s alpha test. Seven hypotheses were developed to find out factors that are impacting the performance of SMEs in Batticaloa district. The entire hypotheses were successfully tested and five hypotheses were accepted including the overall strategic factor. Overall strategic factors and SMEs performance correlation value indicates 0.786 which shows a moderate strong positive relationship and the regression analysis shown that, SMEs performance could be explained by 70.60% variations of its independent variable. Therefore these results confirmed that, there is a significant association between strategic factors and SMEs performance in Batticaloa district. Finally recommendations are suggested to enhance the performance of SMEs in Batticaloa. In this juncture, especially the government participation and its valuable contributions are very much expected in the growth of the manufacturing based SMEs in Batticaloa district and for the entire country.

Keywords: small and medium enterprises, manufacturing based SMEs, strategic factors and performance

INTRODUCTION
Contemporary world global economy is facing certain up and down even though, multinational companies moving in a right track, retail formats, such as food city and other modern business entities have reached good market shares as a same, small and medium enterprises (SMEs) also contributed significantly to the gross domestic product (GDP) of economies. SMEs all over the world indicate that, contribution to the GDP is more than half proportion that means 50% to the global economy and 95% of registered firms operating in the world under the SMEs sector (http://www.sundaytimes.lk/130303). Further, this implies that SMEs are vital to middle level income countries to keep in pace of economy and survival of business ventures. According to Central Bank of Sri Lanka (CBSL) annual report (2012), the industrial contribution to the GDP in 2011 is 30.4% in Sri Lanka. The contribution of small businesses to the national economy in Sri Lanka is not noteworthy. Abeysinghe (2005) reveals that in the year 2004, the small business sector contribution to the country’s GDP is only 18.5%.

In contrast, in neighbouring India, the small business sector input to GDP during the period 1995-2002 has remained at an annual average of 33% (Manimala, 2003). Research has shown that in Sri Lanka 68% of the small business failed within the first 2-5 years of operation (Lingesiya, 2012). This statistics make questioning that, what are the key reasons behind this situation? Even though, this study’s intention to find out strategic factors that contributed and impact on performance of SMEs and through this finding enable to address do and don’t for future SMEs investors. Main point is, through identifying where SMEs weak, that may give teaching lessons to eliminate these malpractices regarding SMEs.
In Batticaloa district, there are many firms operating under SMEs concept but, there is a lacking guidance or monitoring process exist to guide those firms regarding the sustainability of SMEs formats. According to department of census and statistic (DCS) hand book (2010) altogether 375 manufacturing based SMEs are operating in Batticaloa district.

SMEs performance dictates by several factors. In this study researcher analyse which factors contribute more in the process of performance of SMEs. According to the literatures, factors that are accompanied with SMEs performance denoted as, ‘financial based factors, management based factors, marketing based factors, technology based factors, infrastructure based factors and government regulation based factors’. These factors are commonly indicated as strategic factors in this study. Further, these factors are called as ‘variables of strategic factors’.

STATION OF THE PROBLEM
SMEs is playing significant role in economic context in Sri Lankan arena. According to Wolfenson (2001) denoted that, ‘SME is a recognised integral component of economic development and a crucial element in the effort to lift countries out of poverty’, this implies that, countries such as Sri Lanka could be well benefitted through these SMEs because, initiating and establishing procedures relatively ease compare with large scale business formats. According to Gamage (2000) illustrate that, Sri Lanka is having potential to get maximum outcome from SMEs. Further, low level income is fairly enough, less infrastructure facilities are enough to run SMEs rather than large scale operation and availability of very cheap labour or in another term, cost effective labour force. These comfortable nature of business formation very much suit to SMEs. Even though, how far policy makers and other stakeholders realize the significance of SMEs is questionable.

Literatures suggest that, in Sri Lanka SMEs sustainability is still questionable and statistics shows 68% of SMEs failures within 2-5 years of operation (Lingesiya, 2012). After the end of war, lack of studies investigated in SMEs concept in Batticaloa, a literature gap exists to fill in Batticaloa district. This study is being conducted at a suitable time and correct concept to find the hypothetical answer in Batticaloa district. There are many reasons behind the failure of SMEs. In this study researcher’s role is to find the answer regarding the extent of impact of strategic factors on the manufacturing based SME’s performance in Batticaloa district. Therefore, the study raise the research question that,

What extent the strategic factors significantly impact the performance of the manufacturing based SMEs operating in Batticaloa district?

Based on above argument the research problem focused on the manufacturing based SMEs, whether it contributes towards shaping and modifying above factors based restructuring process. This may support and ensure the sustainability of the manufacturing based SMEs in Batticaloa as well as throughout the nation. This research problem leads to answer that, what are the strategic factors impacts the performance of the manufacturing based SMEs in Batticaloa district.

OBJECTIVES OF THE STUDY
The primary objective of this study attempts to find out what are the strategic factors impacts the performance of the manufacturing based SMEs in Batticaloa district. This implies, by finding out each and every factor, this study could address how far these factors contributing and impacting on the performance of the manufacturing based SMEs. Literally, factors such as ‘financial based factors, management based factors, marketing based factors, technology based factors, infrastructure based factors and government regulations based factors’ which are playing a specific role in shaping the performance of SMEs or ensure the successfullness of SMEs.

This research has the following secondary objectives.

- Identify to what extent the financial based factors impact the performance of the manufacturing based SMEs in Batticaloa district
- Examine to what extent the management based factors impact the performance of the manufacturing based SMEs in Batticaloa district
- Inquire to what extent the marketing based factors impact the performance of the manufacturing based SMEs in Batticaloa district
- Check to what extent the infrastructure based factors impact the performance of the manufacturing based SMEs in Batticaloa district
- Observe to what extent the Government regulation based factors impact the performance of the manufacturing based SMEs in Batticaloa district

SIGNIFICANCE OF THE STUDY
This research focusing on factors study that accompanied with the strategic factors and its impact on performance of the manufacturing based SMEs in Batticaloa district. Researcher suggests that, the role of strategic factors and the level of extent regarding this concept may support SMEs to maintain the high standard of performance. In another term, finding out of
This study is playing an important concern over value reorganization of SMEs. As this study points out the positive sides of SMEs and to how well these type of formation suitable to middle level income countries like Sri Lanka is relatively important. Further this study emphasis on finding the actual feedbacks from respondents in Batticaloa district.

This research work will be of immense benefit, not only to the Government in terms of appreciation of factors critical to SMEs performance which have been overlooked, but also to the industries. The study will also contribute to knowledge and enhance practices in the management of similar types of manufacturing based SMEs in Sri Lanka.

SURVEY METHDOLOGY
This study considers strategic factors of SMEs and its’ impact on SMEs performance, in the selected manufacturing based SMEs in Batticaloa district.

Data Collection Method
This study focuses on primary data, which were collected through the structured questionnaire. These questionnaires are originally developed by the researcher based on the literature. The questionnaire consists of part I for personal information of study variables and part II for research information.

Part II of the questionnaire consists of the research information to be collected through 42 statements in relation to the study variables: 15 statements for SMEs performance and 27 statements for strategic factors of SMEs. All these 42 statements in the questionnaire are measured with 5 point Likert’s scale of SMEs entrepreneur’s perceptions as given below for maintaining the consistency and to avoid the scale effect between the study variables.


Data Analysis
Hypothesis testing is used to find out significant strategic factor in this study. In accordance with study’s objectives is to identify significant strategic factor that impact on SMEs Performance in Batticaloa. Several steps are there to construct hypothesis in this specific study. First study is focusing to set up assumptions regarding hypothesis, formulated Null, Alternative Hypothesis and define the decision rule or criteria are the significant steps of this hypothesis.

These are the assumptions setup in this study relevant to Hypothesis,
(01) Probability distribution of this study is normal distribution
(02) Two tail test is suitable method to find out reject region
(03) Test statistic have to be greater than -1.96 to 1.96 to accept H1 (Alternative hypothesis) as the same value which fall into this region (-1.96 to 1.96) accept the Null Hypothesis
P value (ñ) or level of significant has to be less than 0.05 to accept the H1 (Alternative hypothesis)

Significant level which exceed the 0.05 value need to be accept the Null Hypothesis and reject H1 (Alternative hypothesis)

Test Statistics for each of the factor were calculated based on the under mentioned formula.

\[
\text{Test Statistics} = \frac{\text{Correlation Coefficient (r)}}{\sqrt{1 - \text{Correlation determination}}} \div (\text{Number of respondents} - 2)
\]

The respective results are shown as follows in Table 1

Table 1: Summary of T Statistics

<table>
<thead>
<tr>
<th>Testing factor correlated with SMEs performance</th>
<th>Correlation coefficient (r)</th>
<th>Correlation determination (r^2)</th>
<th>1-R_2</th>
<th>\sqrt{1-R_2/148}</th>
<th>Test approximately coefficient -t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial based factors</td>
<td>0.741**</td>
<td>0.5491</td>
<td>0.4509</td>
<td>0.05519</td>
<td>13.42</td>
</tr>
<tr>
<td>Management based factors</td>
<td>0.651**</td>
<td>0.4238</td>
<td>0.5762</td>
<td>0.06239</td>
<td>10.43</td>
</tr>
<tr>
<td>Marketing based factors</td>
<td>0.659**</td>
<td>0.4343</td>
<td>0.5657</td>
<td>0.06182</td>
<td>10.66</td>
</tr>
<tr>
<td>Technology based factors</td>
<td>0.311**</td>
<td>0.0967</td>
<td>0.9033</td>
<td>0.07812</td>
<td>3.98</td>
</tr>
<tr>
<td>Infrastructure based factors</td>
<td>0.475**</td>
<td>0.2256</td>
<td>0.7744</td>
<td>0.07233</td>
<td>6.57</td>
</tr>
<tr>
<td>Government regulation based factors</td>
<td>0.147</td>
<td>0.0216</td>
<td>0.9784</td>
<td>0.08131</td>
<td>1.81</td>
</tr>
<tr>
<td>Overall Strategic factors</td>
<td>0.786**</td>
<td>0.6178</td>
<td>0.3822</td>
<td>0.05081</td>
<td>15.47</td>
</tr>
</tbody>
</table>

\*Correlation is significant at the 0.05 level (2-tailed). **Correlation is significant at the 0.01 level (2-tailed).

Source: Developed for this study

Primarily, financial based factors discussed in this study. Financial based factors and SMEs performance having significant among them. Literature indicates, Central Bank report (1996) pointed out successful performance of SMEs depending on maintaining consistency annual growth. Levy (1993), Yapa (1999), Chandrasri (1999), Reddy (1991), and Little et al. (1987) argues, tickling the financial based factors definitely bring success to SMEs. Theories strongly suggest there is a significant positive impact of financial based factors. To find the answer for this question; “what extent financial based factor impact on SMEs performance?, study pointed out the results as follows,

- Mean value 4.6442 with the standard deviation of 0.4765. This implies mean fall into high range.
- Correlation coefficient between this factor and SMEs performance stand as, 0.741 (t=13.42, p=0.000)
- Regression analysis indicates that, one unit increase in this factor will increase the SME performance by 0.417 units (p=0.000).

The above results imply that, there is a moderately strong positive impact between financial based factor and SMEs performance in Batticaloa district.

Secondly, it is suitable to address management based factors. Accordingly management based factors having significant impact on SMEs performance. Literature indicates, Cronje et al. (2001), Mohotti (1993), Gamage (2000), Nurul et al. (2005), and Man et al. (2002) pointed out, management efficiency ensure the goal accomplishment of SMEs. This implies components of

management impacting significantly on SMEs performance. In this junction study checks whether these theoretical underpinning compatible with Batticaloa district? The results received is as follows,

- Mean value 4.098 with the standard deviation of 0.6088. This implies mean fall into high range.
- Correlation coefficient between this factor and SMEs performance stand as, 0.651 (t=10.43, p=0.000)
- Regression analysis indicates that, one unit increase in management based factor will increase the SME performance by 0.244 units (p=0.000).

The above output implying that, there is a moderately strong positive impact of management based factor on SMEs performance in Batticaloa district.

Thirdly, it is suit to elaborate marketing based factors. Marketing based factors playing crucial role in business arena. There is a significant impact between marketing based factors with SMEs performance. Literatures relevant to Kimura (2003) and Foley et al. (1989) indicate that, there is a significant association between Organization strategies with marketing operations this implies compatibility of marketing based factors with SMEs performance.

- Mean value 4.1200 with the standard deviation of 0.5238. This implies mean fall into high range.
- Correlation coefficient between this factor and SME performance stand as, 0.659 (t=10.66, p=0.000)
Regression analysis indicates that, one unit increase in marketing based factor will increase the SME performance by 0.297 units (p=0.000)

The above results reveal that, there is a moderately strong positive impact of Marketing based factor on SMEs performance in Batticaloa district.

Fourthly, study considers discussing on technology based factors. Technology is driving the world, in any sort of business ventures adaption of technological advances inevitable. There is a certain extent of impact of technology based factors on SMEs performance. Robertson (2003) and Chandrasri (1999) indicate, advancement of technological aspects supports to improve SMEs growth and suggest technological constraints are significant barrier faced by the developing countries that reduce the outcome of SMEs performance. This indirectly implies, successful performance of SMEs has to adapt to technology. In Batticaloa situation feedback received in this study are as follows,

- Mean value indicates as 3.7160 with the standard deviation of 0.4131. This implies mean fall into high range.
- Correlation coefficient between this factor and SMEs performance stand as, 0.311 (t=3.98, p=0.000).
- Regression analysis indicates that, one unit increase in technology based factor will increase the SME performance by 0.045 units (p=0.348)

This result express that there is a very weak positive impact of Technology based factor on SMEs performance in Batticaloa district. The reason for this result could be due to the war and conflict situation in the past in Batticaloa area and now only SME entrepreneurs are willing to adapt technology in their operations to enhance the output. This implies still Batticaloa SMEs has to take care on Technology based factors and further improvement is expected to survive in the competition market changes.

Fifthly, study intends to discuss on infrastructure based factors. Investors very much keenly consider infrastructure based platform before they take decision regarding investment plan. Gamage (2000) illustrates, SMEs special features is to operate the business with less infrastructure facilities even though SMEs which are not adapting to well executed infrastructure will face difficult in the expansion phase or conversion into large scale businesses. Further, literatures in connection with Abeyratne (2005), Chandrasri (1999), Kristiansen (2003), and Huggins (2000) emphasized the importance of infrastructure facilities. Even though, in Batticaloa situation these are the feedback received in this study.

- Mean value is 4.2587 with the standard deviation of 0.5015. This implies mean fall into high range.
- Correlation coefficient between Infrastructure based factor and SMEs performance stand as, 0.475 (t=6.57, p=0.000)
- Regression analysis shows that, one unit increase in infrastructure based factor will increase the SME performance by 0.103 units (p=0.05).

This result confirms that there is a fair significant positive impact of Infrastructure based factor on SMEs performance in Batticaloa district.

Sixthly, study focused on Government regulation based factors. Government is a body practising, modifying and implementing suitable economic policy in business arena. Sudden changes in government regulations and other restrictions negatively affect the performance of SMEs. Yusuf (1995), Simbi (2004), and Huggins (2000) indicate, government regulation is an external factor that impacts on SMEs performance. This studies figure out,

- Mean value is 3.4225 with the standard deviation of 0.3435. This implies mean is slightly above average value.
- Correlation coefficient between Government regulation based factor and SMEs performance stand as, 0.475 (t=1.81, p=0.073)
- Regression analysis indicates that, one unit increase in Government regulation based factor will reduce the SME performance by 0.061 units (p=0.190).

The above results implying that, there is a weak impact of Government regulation based factor on SMEs performance in Batticaloa district. The main cause for this result could be, in the past the government involvement and contribution with SMEs in Batticaloa district is very less compared to other districts in the country due to the war and conflict in Batticaloa District. Further law and orders were not properly followed in the past and now being implemented accordingly.

Finally, study suggests looking deeply in overall strategic factor. Combination of financial, management, marketing, technological, infrastructural and government regulation based factors consider as strategic factors in this study. Chandrasri (1999) indicates, by reducing these deficiencies such as, low technology, shortage of finance, access to raw materials, inadequate infrastructure, lack of managerial skills, shortage of skilled labour and low productivity, the SME performance could be improved.

Mean value of Overall Strategic factors indicates 4.0433 with the standard deviation of 0.3182 (p=0.000). This implies mean fall into high range. The regression analysis shows the dependent variable is explained 70.6% of independent variable and the correlation coefficient between Overall Strategic factor and SMEs performance stand as, 0.786 (t=15.47, p=0.000). This result confirms that there is a moderately strong positive impact of strategic factors on SMEs performance in Batticaloa district.

Table 2: Correlation Summary of Hypothesis

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>SMEs performance</th>
<th>Decision attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 (a) Financial based factors</td>
<td>Pearson Correlation 0.741**</td>
<td>t-statistics 13.42 and significant level 0.000 less than 0.05</td>
</tr>
<tr>
<td>H1 (b) Management based factors</td>
<td>Pearson Correlation 0.651**</td>
<td>t-statistics 10.43 and significant level 0.000 less than 0.05</td>
</tr>
<tr>
<td>H1 (c) Marketing based factors</td>
<td>Pearson Correlation 0.659**</td>
<td>t-statistics 10.66 and significant level 0.00 less than 0.05</td>
</tr>
<tr>
<td>H1 (d) Technology based factors</td>
<td>Pearson Correlation 0.311**</td>
<td>t-statistics 3.98 and significant level 0.000 less than 0.05</td>
</tr>
<tr>
<td>H1 (e) Infrastructure based factors</td>
<td>Pearson Correlation 0.475**</td>
<td>t-statistics 6.57 and significant level 0.00 less than 0.05</td>
</tr>
<tr>
<td>H1 (f) Government regulation based factors</td>
<td>Pearson Correlation 0.147</td>
<td>t-statistics 1.81 and significant level 0.073 greater than 0.05</td>
</tr>
<tr>
<td>H1 (g) Overall Strategic factors</td>
<td>Pearson Correlation 0.786**</td>
<td>t-statistics 15.47 and significant level 0.00 less than 0.05</td>
</tr>
</tbody>
</table>

P= significance level.
Source: Developed for this study

DISCUSSION OF THE FINDINGS
Analysis of univariate descriptive, bivariate correlation and multivariate regression shows that manufacturing based SME’s performance is highly positively correlated with financial based factors. Further SME’s performance is moderately positively correlated with management and marketing based factors.

SME performance is weakly positively correlated with technology based factors. The reason for this result could be due to the war and conflict situation in the past in Batticaloa area and now only SME entrepreneurs are willing to adapt technology in their operations to enhance the output. This implies that SME performance is fairly positively correlated with infrastructure based factors.

Further SME’s performance is weakly correlated with government regulation based factors. The main cause for this result could be, in the past the government involvement and contribution with SMEs in Batticaloa district is very less compared to other districts in the country due to the war and conflict in Batticaloa District. In addition to the above law and orders were not properly followed in the past and now being implemented accordingly.

Finally the results of this study confirm that there is a moderately strong positive relationship between overall strategic factor and manufacturing based SME’s performance in Batticaloa district.

CONCLUSION
Primarily, financial based factors discussed in this study. Financial based factors and SMEs performance having significant among them. Literature indicates, Central Bank report (1996) pointed out successful performance of SMEs depending on maintaining consistency annual growth. Levy (1993), Yapa (1999), Chandrasri (1999), Reddy (1991), and Little et al. (1987) argues, tickling the financial based factors definitely bring success to SMEs. Theories strongly suggest there is a significant positive impact of financial based factors. To find the answer for this question; “what extent financial based factor impact on SMEs performance”? Based on the result, there is a moderately strong positive impact between financial
based factor and SMEs performance in Batticaloa district.

Secondly, it is suitable to address management based factors. Accordingly management based factors having significant impact on SMEs performance. Literature indicates, Cronje et al. (2001), Mohotti (1993), Gamage (2000), Nurul et al. (2005), and Man et al. (2002) pointed out, management efficiency ensure the goal accomplishment of SMEs. This implies components of management impacting significantly on SMEs performance. In this junction study checks whether these theoretical underpinning compatible with Batticaloa district? The results revealed that, there is a moderately strong positive impact of management based factor on SMEs performance in Batticaloa district.

Thirdly, it is suit to elaborate marketing based factors. Marketing based factors playing crucial role in business arena. There is a significant impact between marketing based factors with SMEs performance. Literatures relevant to Kimura (2003) and Foley et al. (1989) indicate that, there is a significant association between Organization strategies with marketing operations this implies compatibility of marketing based factors with SMEs performance. According to the results, there is a moderately strong positive impact of Marketing based factor on SMEs performance in Batticaloa district.

Fourthly, study considers discussing on technology based factors. Technology is driving the world, in any sort of business ventures adaption of technological advances inevitable. There is a certain extent of impact of technology based factors on SMEs performance. Robertson (2003) and Chandrasri (1999) indicate, advancement of technological aspects supports to improve SMEs growth and suggest technological constraints are significant barrier faced by the developing countries that reduce the outcome of SMEs performance. This indirectly implies, successful performance of SMEs has to adapt to technology. In Batticaloa situation feedback received in this study express that there is a very weak positive impact of Technology based factor on SMEs performance in Batticaloa district. The reason for this result could be due to the war and conflict situation in the past in Batticaloa area and now only SME entrepreneurs are willing to adapt technology in their operations to enhance the output. This implies still Batticaloa SMEs has to take care on Technology based factors and further improvement is expected to survive in the competition market changes.

Fifthly, study intends to discuss on infrastructure based factors. Investors very much keenly consider infrastructure based platform before they take decision regarding investment plan. Gamage (2000) illustrates, SMEs special features is to operate the business with less infrastructure facilities even though SMEs which are not adapting to well executed infrastructure will face difficult in the expansion phrase or conversion into large scale businesses. Further, literatures in connection with Abeyratne (2005), Chandrasri (1999), Kristiansen (2003), and Huggins (2000) emphasized the importance of infrastructure facilities. Even though, in Batticaloa situation these are the feedback received that there is a fair significant positive impact of Infrastructure based factor on SMEs performance in Batticaloa district.

Sixthly, study focused on Government regulation based factors. Government is a body practising, modifying and implementing suitable economic policy in business arena. Sudden changes in government regulations and other restrictions negatively affect the performance of SMEs. Yusuf (1995), Simbi (2004), and Huggins (2000) indicate, government regulation is an external factor that impacts on SMEs performance. This studies figure out that, there is a weak impact of Government regulation based factor on SMEs performance in Batticaloa district. The main cause for this result could be, in the past the government involvement and contribution with SMEs in Batticaloa district is very less compared to other districts in the country due to the war and conflict in Batticaloa District. Further law and orders were not properly followed in the past and now being implemented accordingly.

Finally, study suggests looking deeply in overall strategic factor. Combination of financial, management, marketing, technological, infrastructural and government regulation based factors consider as strategic factors in this study. Chandrasri (1999) indicates, by reducing these deficiencies such as, low technology, shortage of finance, access to raw materials, inadequate infrastructure, lack of managerial skills, shortage of skilled labour and low productivity, the SME performance could be improved.


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REFERENCES


