Determinants of Export Competitiveness: An Empirical Study of Tea Industry in Sri Lanka

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Dedication

I dedicate this work to my loving Mother and Father……

Acknowledgment

I would like to acknowledge the efforts of different individuals who made numerous contributions towards the completion of this work. First and foremost I would like to extend my sincere appreciation to my supervisors Dr. P.J. Kumarasinghe, for his invaluable time, guidance and encouragement that enabled me to complete this research in time.

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Abstract

Export development plays an important role in promoting economic growth and development. Understanding of export competitiveness has primarily been pursued in terms of economic variables and market conditions. The thesis involved an investigation into the determinants of export competitiveness of tea industry in Sri Lanka. The main purpose of this study is to identify the factors which affecting to the competitiveness of tea industry in Sri Lanka and to develop a framework that helps to enhance the competitiveness of tea industry. This study integrated perspectives from export competitiveness, the resource based view of the firm, local and foreign demand conditions of the firm, association with related and supporting industries, government sources and brand loyalty. Quantitative research approach was used and Porter's diamond model with some adaptations was taken as proposed model of this study. E-mail survey compromised with the structured questionnaire was used to collect primary data from the sample. Key managers of tea exporting firms were considered as the respondents. Partial least squares structural equation model (PLS-SEM) was utilized to analyze the contribution of each factor on tea export competitiveness. The data obtained from the firm level survey were analyzed using Smart PLS version 2.0 and SPSS (version 16) statistical packages. Supported by the empirical evidences this study found out that factor conditions have the most significant influence of export competitiveness of tea industry and the second important is government support. Followed by government support, demand condition and brand loyalty have also made positive impact on export competitiveness of tea industry in Sri Lanka. Then the results suggested that factor conditions, demand conditions, government support, brand loyalty and related and

supporting industries can help Sri Lankan tea industry to sustain its competitive advantage. While identifying important elements, results indicated that raw material, technology, physical infrastructure, information infrastructure, related industries, and firm characteristics have significant impact. Giving priority to those elements strategies should be developed to enhance competitiveness of Sri Lankan tea export. By creating favourable conditions, Sri Lanka can remain competitive position in the global tea industry for many years to come. Further study will focus to conduct a comparative analysis of determinants of export competitiveness and to assess the interaction among the factors affecting to export competitiveness.

Key words: Tea industry, Competitiveness, Porter's diamond model, Partial least squares structural equation model

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1. Introduction

The process of economic integration, globalization and technological advancement strengthen export development of nations. Export development plays an important role in promoting economic growth and development. It contributes significantly to enhance capital inflow, reduce trade balance deficits, make balance of payment (BOP) surplus, increase employment and expand the production base of a nation. As a result of increasing size of international trade, the concept of export competitiveness plays a vital role in international trading system. Export competitiveness has been paid more attention in order to develop export portfolio of nations. To promote economic development and survival in the global competitive market, export competitiveness is an essential component of a country.

The nation's long-term survival depends on how it compares with other countries which produce similar products. For small economies, export is substantial in sustaining growth and vitality (Saboniene, 2009, p.49). Export contributes economy in terms of capital inflows, employment, expansion of industry widening the production base, and achieve economies of scale in domestic industries.

Sri Lanka's national economy has expanded during the post independent period. In 1950 Sri Lanka recorded US $ 1 billion gross domestic product and it has expanded to US $ 60 billion in 2012. Throughout this expansion, service sector provides mass contribution to national economy. The expansion of domestic production does not contribute much on the external sector (depends on domestic market); it can be examined by referring declining share of Sri Lanka's export on GDP and world trade. The share

of Sri Lanka's export as a percentage of gross domestic products (GDP) is fluctuating from time to time, however, after 2005 it shows a continuous declining tendency. Considering the time period; in 1950, share of export of GDP was 28 percent, 1970 it was 20 percent, in 2000 it was 33 percent, 2005, 26 percent, 2007, 24 percent, 2009, 17 percent, 2010, 18 percent, 2011, 18 percent and last recorded in 2012 it was 16.67 percent (Central Bank Reports). There is no significant expansion of foreigners' demand for Sri Lanka's products. Since 2005, economic growth has recorded above 6 percent and last two years (2010 and 2011) it reached to 8 percent. Declining tendency of export share of GDP indicates that Sri Lanka was unable to raise its export at least at the same rate as GDP growth. Depending on domestic market is not a good development signal for a country like Sri Lanka because it does not have a strong domestic market compared to India and China.

World export value has doubled during the time period from 2000 to 2011, but Sri Lanka's export value increased relatively little amount compared to other Asia countries like India, Bangladesh, Thailand, Vietnam and Philippine. For an example; India, Bangladesh, Indonesia, Philippines, and Vietnam increased their export market share in 2011, compared with 2010 export market share, by 17, 15, 10, 9, and 18 percent respectively. Sri Lanka's share in the world total export has declined drastically from year 2000 to 2011 (Table 1.1). Based on the International Trade Center (ITC) statistical data, Sri Lanka's share in world export; 2000 – 0.08 percent, 2005 – 0.06 percent, 2009 – 0.05 percent, 2010 – 0.048 percent 2011 – 0.04 percent and 2012 – 0.055 percent.

Table 1.1: Export volume and share of selected countries

Country	Export Volume (US $)			Export as a percentage of world export	
	2001	2010	2011	2010	2011
Thailand	64,919,226	195,311,520	228,823,973	1.26	1.26
Philippines	31,150,203	38,435,802	51,497,515	0.33	0.36
Sri Lanka	4,672,001	8,304,052	10,010,818	0.048	0.04
Vietnam	15,029,192	72,236,665	97,730,073	0.46	0.54
India	43,878,489	220,408,496	301,483,250	1.42	1.66
Bangladesh	5,417,273	19,955,832	25,891,270	0.13	0.15
Singapore	121,753,789	351,867,167	409,503,631	2.25	2.25
Indonesia	56,316,867	157,779,103	203,496,619	1.01	1.12

Source: International Trade Center (ITC) database

Sri Lanka being a tiny economy has an insignificant share of exports in the world exports. It is even less than 1%. Thus, its share in world exports amounted to about 0.085% in 2000 and that share had declined to about 0.055% in 2012. It depicts that when the world exports have been rising, Sri Lanka has failed to keep pace with the global growth trends. It demonstrates the existence of a serious structural problem relating to Sri Lanka's export sector and immediate measures must be applied to correct those structural issues.

1.1 Competitiveness Index and Sri Lanka

The Atlas of Economic Complexity Index (ECI) assesses the complexity of each product produced by a nation. The ECI measures ubiquity (number of countries that a product is connected to) and diversity (number of products

that a country is connected to) of a particular product. The ECI shows a clear picture on competitiveness of a country's product. In the ECI (2011), Sri Lanka's ranking in the index is No.71. While comparing other Asian countries like; Thailand, Philippines, Vietnam, Indonesia and India, their ECI ranks are No. 31, 59, 67, 61, and 51 respectively. According to Sri Lanka's current complexity map, almost 100 percent of its products are simple products which can be easily copied by other competitive countries.

Based on the global competitiveness index ranking, Sri Lanka's competitiveness has increased over the years (from 2006 to 2013), overall improvement of the competitiveness is relatively low when compared to other emerging Asian countries like Singapore, Philippines, and Indonesia (Table 1.2).

Table 1.2: Global Competitiveness Index of selected countries

Country	**Global Competitiveness Index Rank**						
	2006 -07	**2007- 08**	**2008- 09**	**2009- 10**	**2010- 11**	**2011- 12**	**2012- 13**
Thailand	28	28	34	36	38	39	38
Philippines	75	71	71	87	85	75	65
Sri Lanka	81	70	77	79	62	52	68
Vietnam	64	68	70	75	59	65	65
India	42	48	50	49	51	56	59
Bangladesh	92	107	111	106	107	108	118
Singapore	8	7	5	3	3	2	2
Indonesia	54	54	55	54	44	46	50

Source: Global Competitiveness Report, several issues

Accordingly, in the Economic Complexity Index prepared by Harvard University and Massachusetts Institute of Technology in USA, Sri Lanka ranks very low toward the middle of the second half of the index. In the Index pertaining to 2010, Sri Lanka is ranked at 71 out of 128 countries lower than the emerging Asian economies like India (51), Philippines (59), Indonesia (61) and Vietnam (67). This is because Sri Lanka has been producing and exporting largely simple products like tea, rubber and coconut from the agricultural side and textiles and garments from the industrial side. Reveal Comparative Advantage index, calculated by based on United Nations Commodity Trade Statistics Database (UN-COMTRADE), reveals that Sri Lanka has lost its comparative advantage on commodity exports throughout the period of 2000 to 2010 (Sachitra et, al., (2012).

The export share is the lifeline of Sri Lanka's economy and its contribution is very much important to attain the goal of becoming the 'Wonder of Asia'. Sri Lanka's economy is currently facing a major challenge; that is to sustain the high economic growth. To sustain high economic growth, it has to sustain its export market share.

Considering the above mentioned situation, it can be identified that Sri Lanka has to expand its export sector. Expanding a country's export sector is not an easy task. In the international market, any country cannot determine its export prices. Countries have to supply their products at a particular price which is determined by demand and supply. To compete in the international market, a country should be able to produce products at low cost with standard quality. The cost of production is determined by input prices; basically raw materials and labour cost. The level of inflation in a country directly influences the prices of inputs. When examining Sri

Lanka's inflationary situation, during 2000 to 2011 time period, average inflation rate is nearly 9 percent (Central Bank of Sri Lanka). On the other hand, nominal wage rate in Sri Lanka has increased by 144 percent during the time period from 2000 to 2011 (Nominal Wage Indices, Central Bank of Sri Lanka). The cost increased can be stimulated by making adjustments in exchange rate or enhancing the productivity. From 2000 to 2011, nominal exchange rate (measured against US dollar) has significantly depreciated. Depreciation of exchange rate did not insulate the declining share of exports in Sri Lanka. Then, problem has arisen due to absence of productivity in Sri Lankan export sector. Low productivity influences significantly on export competitiveness of a country.

After the end of 30 years ethnic war, Sri Lanka is planning to become the 'wonder of Asia'. In spite of becoming the wonder of Asia, Sri Lanka tries to double its average per capita income from US $ 2000 to US $ 4000 by the end of 2016, starting from 2010. Sri Lanka should accelerate its production for the export market. Otherwise, it is not possible to achieve the target of US $ 4000 per capita income in 2016. Among the export composition, tea, as the highest net foreign earning sector, provides significant contribution to the country's economy.

1.2 Tea Industry

The study focuses on Sri Lankan tea industry because of its long history and its position as one of the key player in the global market. It is the third largest agricultural industry and second largest exporter in Sri Lanka. Sri Lanka tea industry celebrates 146 years of commercial history in 2013. Until the 1860's the main crop produced in Sri Lanka (Ceylon) was coffee.

In 1869, the coffee plants were killed due to coffee-rust fungus (Hemileia Vastatrix) and coffee estate owners had to diversify into other crops in order to eliminate the total loss. James Taylor introduced tea to Sri Lankan plantation sector in 1867. In 1873, Taylor's first quality tea was sold for a good price at the London auction. Taylor was largely responsible for the early success of the tea crop in Ceylon.

The tea industry initiated by the British played an important role in the economy during pre and post-independence Sri Lanka. Since independence in 1948, tea along with rubber and coconut contributed more than 92 percent of total export earnings of Sri Lanka. Since 1867, tea has become the key industry in economy of Sri Lanka. As the highest net foreign exchange generator, tea is considered to be the most important agri business in the country. Tea brings twice the net foreign exchange compared to textile and garment industry. Other important contribution of tea industry to Sri Lankan economy is its ability to generate employment. The labour-intensive nature of the production structure of tea provides a high level of employment. Sri Lankan tea industry has contributed significantly to the country's economic development. Tea industry accounts nearly 10 percent contribution to national output and generates more than 10 percent employment opportunities directly and indirectly (nearly 2 million employed).

Tea is one of the top beverages consumed among all economic classes only second to water. It is seen as a health beverage and is getting popularized among youth globally. In 2011, Sri Lanka Tea Board conducted a survey and identified reasons for consuming tea. The survey result indicated that 72 percent of people drink tea to get refresh and to become active (Table 1.3).

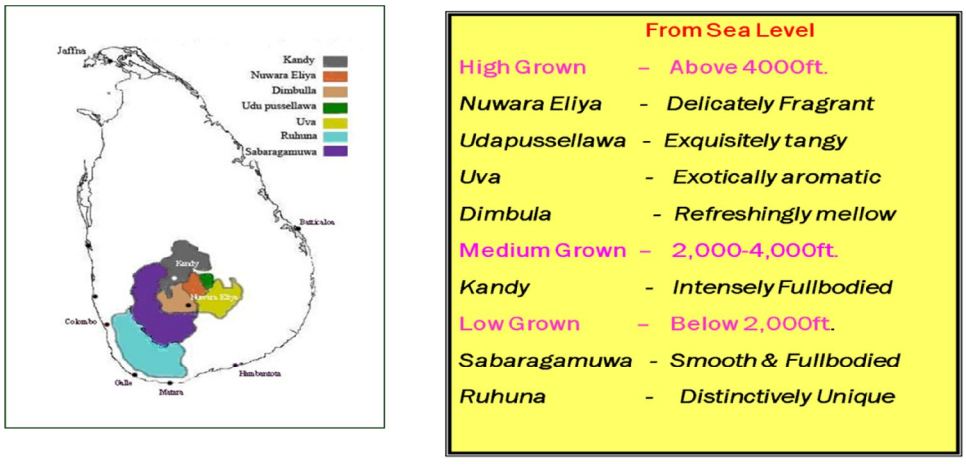
Table 1.3: Reasons to drink tea

Reasons	Across the Country %	Youth Segment %
To refresh or make one active	72	71
Good for thirst	24	25
Good to rid of hunger	18	19
Rid sleepiness	16	17
Easy to prepare	10	8
Good for health	6	4
Low in price	16	13

Source: Sri Lanka Tea Board, 2011

Sri Lanka's finest tea is produced mainly from bushes that grow above 4000 feet. There are seven main tea producing areas, namely; Galle, Ratnapura, Kandy, Nuwara Eliya, Dimbula, Sabaragamuwa and Uva. The tea produces in each region have individual characteristics of flavor, aroma, and color. Figure 1.1 shows tea growing regions of Sri Lanka.

Figure 1.1: Tea Growing Regions of Sri Lanka



Source: Sri Lanka Tea Board

There are three main elevations of tea in Sri Lanka. Namely; high grown, mid grown, and low grown. Low-grown tea produced at 1,500 to 1,800 feet, is of good quality and gives good color and strength but lack the distinctive flavor and bright fresh taste of the higher-grown teas. Mid-grown tea, grown between 1,800 and 3,500 feet, are rich in flavor and gives good color. High-grown tea, from heights of between 3,500 and 7,500 feet, is the very best that Sri Lanka produces, giving a beautiful golden liquor and an intense powerful flavor (The history of Ceylon tea, 2012). Areas of tea planted in 2012 can be shown in table 1.4.

Table 1.4: Area of tea planted (Elevation wise)

Elevation	**Planted (Ha)**	**Share**
High Grown	41,137	19%
Mid Grown	71,018	32%
Low Grown	109,814	49%
Total	**221,969**	**100**

Source: Sri Lanka Tea Board

Table 1.5, 1.6 and 1.7 illustrate tea production position in Sri Lanka from 2005 to 2012.

Table 1.5: Tea Production (Elevation wise) of Sri Lanka

Year	High Grown*	(%)	Mid Grown*	(%)	Low Grown*	(%)	Total *
2005	80.3	25	55.1	18	181.7	57	317.1
2006	74.7	24	51.6	17	184.5	59	310.8
2007	72.5	24	54.4	17	177.7	59	304.6
2008	84.4	26	49.0	15	185.3	59	318.7
2009	72.8	25	44.7	15	173.1	60	290.6
2010	79.1	24	56.1	17	196.2	59	331.4
2011	79.2	24	52.5	16	196.6	60	328.4
2012	71.4	21	54.7	17	197.5	62	323.6

* Kilogram Million

Source: Sri Lanka Tea Board

Table 1.6: Tea Production (Category wise) of Sri Lanka

Category	2007*	%	2008*	%	2009*	%	2010*	%	2011*	%	2012*	%
Orthodox	283	93	297	93	271	93	310	94	303	92	298	92
CTC	16	5	17	5	16	5	18	5	22	7	23	7
Green Tea	4	1	3	1	2	1	3	1	3	1	2	1
Others	2	1	2	1	2	1	-	-	-	-	-	-
Total	305	100	319	100	291	100	331	100	328	100	323	100

* Kilogram Million

Source: Sri Lanka Tea Board

With respect to manufactured tea, nearly 50 percent of it is exported in the form of bulk tea for international buyers to add value. Another 35 percent is sent in packets, largely under brands that are owned by overseas distributors. There are few companies which engage in brand marketing of their tea internationally such as Ceylon Tea Services (Dilmah), and Euro-Scan exporters (Mlesna)

Table 1.7: Sri Lanka Tea Export (Quantity)

Category	2006*	2007*	2008*	2009*	2010*	2011*	2012*
Bulk	197.8	179.9	178.0	164.6	176.8	179.9	182.4
Packets	79.4	72.7	84.3	75.5	89.8	95.8	126.6
Tea Bags	19.1	22.0	20.3	18.7	25.7	24.6	7.3
Others	18.6	19.7	18.6	21.2	1.8	2.9	1.5
Re-Exports	*12.5*	*15.6*	*18.6*	*10.6*	18.6	20.5	0.6
Total	327.4	309.9	319.8	290.6	305.7	323.7	318.4

* Kilogram Million

Source: Sri Lanka Tea Board and Export Development Board

Sri Lanka is one of the leading tea exporting country in the world. Today, Sri Lanka is the world's second largest tea exporter. Since the global tea market is very competitive, the tea industry in Sri Lanka has not performed well in the global market, especially concerning about the global market share, compared to other tea exporting countries like; Kenya, China and India. In the global tea trade, Sri Lanka plays a significant role. However, during the last decade, the country's relative position in terms of export market share shows a considerable decline. Based on the International Trade Statistics, Sri Lankan world tea export market share has declined

from 26 percent to 20 percent during the time period from 2001 to 2011(Table: 1.8).

Table 1.8: Market share of the major tea exporting countries

Share of world export (tea) %	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Sri Lanka	26.1	25.7	22.5	21.6	22.1	20.9	22.6	22.9	21.6	20.4	20.3	20.0
Kenya	15.2	5.6	16.1	13.7	15.6	15.8	15.5	16.9	16.4	18.2	18.5	18.9
China	11.6	13.1	12.3	12.9	13.3	13.1	13.4	12.4	12.9	12.3	14.4	16.5
India	14.4	12.8	10.5	11.3	10.6	9.9	9.6	10.2	10.2	10.9	12.9	12.9

Source: International Trade Centre

Table 1.9 shows the countries that Sri Lanka exported tea in terms of export value and tea export share.

Table 1.9: Major tea exporting countries of Sri Lanka

Country	2001	2002	2003	2004	2005	2006
Russia *	112333	122366	135005	142062	150048	175697
Share of total export	16.5	18.8	20.1	19.4	18.7	20.1
Iran *	28146	33049	30113	53225	67964	76471
Share of total export	4.14	5.08	4.48	7.29	8.46	8.75
Syria *	54058	63205	58608	62526	64694	77765
Share of total export	4.14	5.08	4.48	7.29	8.46	8.75
UAE* (**)	79890	73275	64882	75432	98830	107727
Share of total export	11.75	11.27	9.65	10.33	12.3	12.33
Iraq *	19060	22701	8720	10617	20066	24176
Share of total export	2.8	3.49	1.3	1.45	2.5	2.77
Turkey *	43027	40367	45625	67387	46808	37034

Share of total export	6.33	6.21	6.78	9.23	5.82	4.24

Country	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Russia *	185098	201997	179382	218769	250916	223459
Share of total export	18.2	16.1	15.3	16	17	15.9
Iran *	106955	136783	129414	138708	159574	186054
Share of total export	10.52	10.87	11.01	10.15	10.82	13.25
Syria *	88330	109742	129181	118119	124905	103913
Share of total export	10.52	10.87	11.01	10.15	10.82	7.405
UAE* (**)	133716	156723	120335	134575	102141	50757
Share of total export	13.15	12.45	10.24	9.85	6.92	3.61
Iraq *	26256	40617	37017	51304	84503	83388
Share of total export	2.58	3.23	3.15	3.75	5.73	5.94
Turkey	47753	57027	60857	74750	77875	90030

*						
Share of total export	4.7	4.53	5.18	5.47	5.28	6.42

* Export Value (US Dollar thousand)

(**) United Arab Emirates Source: International Trade Centre

According to the table 1.9, highest tea export share (nearly 18 percent) goes to Russia and nearly 12 percent goes to UAE. Other countries like Iran, Syria, Iraq and Turkey share is less than 10 percent of total tea export. Analyzing major tea exporters, the amount of tea exported to Russia and UAE, it is clearly identified that export share of those countries fluctuated from time to time (from 2001 to 2012). For an example, considering Russia, export share reduced from 20 percent to 16 percent and in UAE it declined from 13 percent to 6 percent.

While considering export destinations of Kenya (Sri Lanka's main competitor), export share of UAE and Russia has increased significantly. (Refer Table 1.10). A amount of tea that Russia imported from countries like Kenya has increased from 5125 metric tons to 11821 metric tons during the time period from 2002 to 2011. It clearly indicates that tea industry of Kenya has become more competitive than Sri Lankan tea industry.

Table 1.10: Major tea exporting countries of Kenya

Year	UAE** (Export Value)*	Share of total export	Russia (Export Value)*	Share of total export
2001	15969	3.56	530	0.12
2002	5283	3.75	1666	1.18
2003	11112	2.31	10664	2.22
2004	11685	2.53	12528	2.71
2005	18707	3.30	17604	3.11
2006	21185	3.20	20371	3.08
2007	25300	3.62	26448	3.79
2008	36142	3.88	41664	4.47
2009	38144	4.27	36482	4.08
2010	59438	5.11	44439	3.82
2011	61722	5.25	49721	4.23

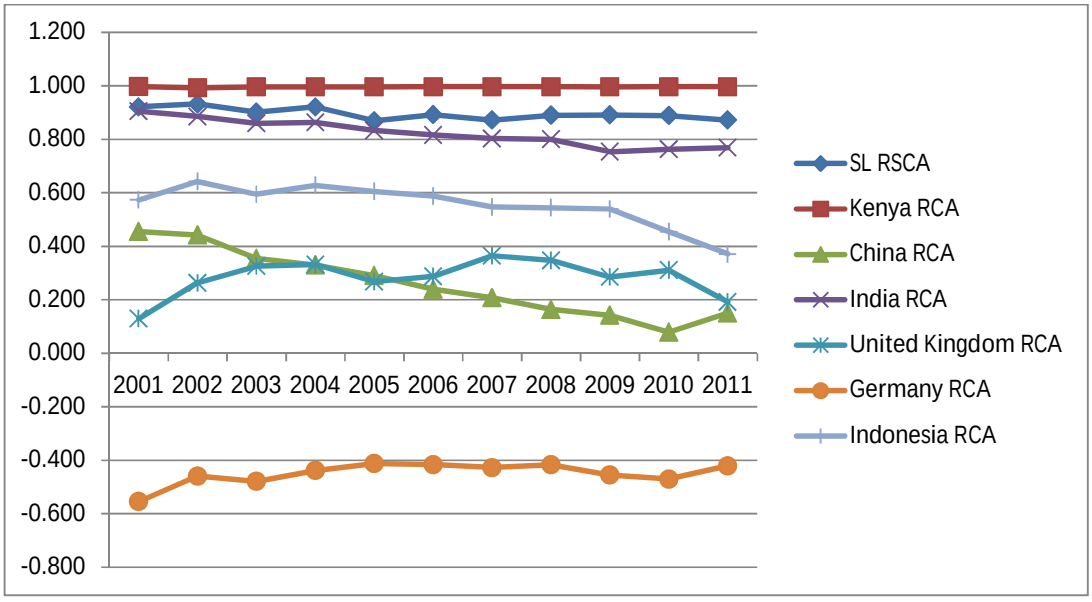
* US Dollar thousand

** United Arab Emirates

Source: International Trade Centre

The revealed comparative advantage of the competitors, especially Kenya, has significantly increased which adversely affects the tea industry of Sri Lanka (refer Figure: 1.2).

Figure 1.2: Reveal Comparative Advantage of Tea in major tea export countries



Source: Compiled by researcher based on International Trade Centre (ITC) statistics

This clearly highlights that Sri Lanka is losing its tea export competitiveness compared to other major tea exporters. It is further validated that volume of the tea exported from Sri Lanka to the top 6 tea importers in the world has come down from 2002 to 2011. If this behavior is extended to the rest of the key markets, Sri Lanka's export revenue may be in trouble. Sri Lankan tea is world famous for its rich aroma and taste but it tends to lose its competitive edge in the world market. Sri Lanka now needs to prepare attack strategy and launch it aggressively in focused markets to protect tea industry.

1.3 Problem Statement of the study

For decades tea has been one of the most important industries in the country, and it can be assumed that its performance will continue in the future. The natural gift of a beneficial climate is still an advantage in producing the world's finest quality tea. Along with that benefit, Sri Lanka still provides best quality tea to the world. However, the present situation of the industry in the global market clearly demonstrates that Sri Lanka is moving away from its competitiveness. Sri Lanka's total export market share of tea is continuously declining relative to its main competitors.

When the issue of export competitiveness gets related to agricultural products, like tea, the meaning is sensitive to the factors affecting competitiveness become fascinating. These themes and challenges are investigated in the study presented in this thesis. The main problem of this study is why Sri Lankan tea industry lost its export competitiveness? To address the main research problem, it is necessary to identify the factors which affect on export competitiveness in Sri Lankan tea industry. Therefore, the specific research question is; what are the determinants of export competitiveness as pursued by the firms in tea industry in Sri Lanka?

To answer this question, this study will develop a framework based on relevant theories and literature. The study aims to provide insight into the competitive position in Sri Lankan tea industry by drawing attention on Porter's (1990) theory of the competitive advantage of nations.

1.4 Objectives of the Study

The primary objective of this study is to identify the factors which affect export competitiveness of tea industry in Sri Lanka. It is required to develop a model in order to answer the question, what are the determinants of export competitiveness of tea industry in Sri Lanka.

1.4.1 Sub-objectives:

To compare and contrast relevant theories and literatures in order to identify determinants of export competitiveness

To study the current status of tea industry in Sri Lanka

To suggest strategies to increase the strength of tea industry's international competitiveness

1.5 Significance of the Study

The study attempted to develop a model in order to answer the question, what are the determinants of export competitiveness of tea industry in Sri Lanka by drawing attention on Porter's theory of the competitive advantage of nations. This study also introduced partial least square structural equation model (PLS-SEM) to quantitatively analyze the contribution of each determinant to tea export competitiveness. The framework, which developed in this study, should help policy makers and industry associations to assess their export competitiveness. It will also help to promote certain industries by directing scare resources to sectors where they may count the most. The findings of the study can also be useful to identify industries which have fast growing behavior.

1.6 Scope of the Study

The study aims to provide an insight into the competitive position of Sri Lankan tea industry by drawing attention on Porter's (1990) theory of the competitive advantage of nations. "Porter's diamond framework is not a new theory that explains the competitiveness of countries, but rather a framework that enhances the understanding of the international competitiveness of firms" (Smit, 2010, p.105). It is clear from literature that Porter's diamond model is not about trade, patterns of trade gains from trade, but it is rather a general framework for analyzing the determinants of advantage that enhance the international competitiveness of firms (Smit, 2010, p.121).

Within the era of growing trade liberalization, it is very important to assess export competitiveness of a nation. Assessing export competitiveness of a nation is a broader concept to study. This study would narrow-down its scope on tea industry which plays a significant role in Sri Lankan economy. Therefore, this study tried to identify the determinants of export competitiveness of firms which are engaging in tea manufacturing and exporting in Sri Lanka.

1.7 Limitations of the Study

The study tried to identify the determinants of export competitiveness of firms which are engaging in tea manufacturing and exporting in Sri Lanka. The population of the study consisted with individual firms which are engaging tea exporting. Based on the Sri Lanka Export Development Board (EDB) statistics there are one hundred and seventy seven firms registered as tea exporting firms. Based on the theoretical requirements whole target population was taken as the sample of the study. Though there

are one hundred and seventy seven firms, only 123 firms were responded to e-mail survey.

Though Porter's diamond model is well-rich with literature, it concerns only about four interrelated determinants (factor conditions, demand conditions, firm strategy, structure and rivalry, and related and supporting industries) and two external factors (government and chance) which affect the export competitiveness. In addition to those determinants there may be additional factors. In this study, it especially focused on brand loyalty as another determinant which would moderate the Porter's diamond model.

The central approach of this study is to identify the determinants of tea export competitiveness in Sri Lanka. It is more worth to apply comparative analysis to identify determinants of competitiveness. A comparative study provides the ability to compare and contrast the factors which determine export competitiveness in different industries. The researcher will apply comparative approach to further study and will make comparison on export determinants among important industries in Sri Lanka.

1.8 Structure of the study

The study has six major chapters. After the introduction, the second chapter provides a conceptual review of literature which assists the theoretical foundations for the development of the conceptual framework of competitiveness. Thereafter, chapter three provides the description and justification of the methodology of approach to the study. Data analysis and findings are illustrated in chapter four. Chapter five carries out the discussion of the findings. Chapter six describes the summary and

conclusion of the study in advancing knowledge for a better understanding of export competitiveness.

1.9 Summary

This chapter laid the foundation for this study which examines the determinants of export competitiveness of tea industry in Sri Lanka. The presenting need to find the factors affecting on export competitiveness and the contextual background for the study were discussed within this chapter. The main purpose of the study is to identify the determinants of tea export competitiveness in Sri Lanka. The concept of export competitiveness has attracted broad attention even though the concept is not well defined. The next chapter of this study focused on literature relevant to the concept of competitiveness and outlines the theoretical background of the study.

2. Literature Review

This chapter explores the approaches to a conceptual framework of export competitiveness. It illustrates antecedents and aspects of competitiveness. This chapter defines the term competitiveness, explains how competitive advantage differs from comparative advantage, and describes how international competitiveness is often identified with exports competitiveness.

This chapter aims;

To build a theoretical foundation for this study

To review the relevant literature

To identify measures of competitiveness

To describe the Porter's approach that is being used to identify the determinants of export competitiveness of tea industry in Sri Lanka

2.1 Overview of Sri Lankan Economy

Sri Lanka celebrated its 65th independence day in 2013 with the theme of "a glorious motherland: a flourishing tomorrow." Since independence Sri Lanka adopted several different economic models. The economic models spread from irrigation development, industrialization, nationalization, privatization, state managed, import substitution, structural reforms to fully open liberalized system. After gaining independence in 1948, Sri Lanka's economy was more or less open. Sri Lanka enjoyed high level of consumption (mostly imported commodities) and exports formed a large share of the GDP. In contrast to the open and market oriented economy

regime of 1950s, the period of 1960-1977 was basically a closed and controlled economy. A significant factor which affected the economy's growth during this period was the continuous deterioration of the country's external terms of trade. In 1977, Sri Lanka's economy has significantly opened up to external trade. The important measures taken in 1977 included; adoption of floating exchange rate system, re-structuring of import tariffs to reduce import controls, decontrol the prices of products, ending of licensing requirements and state monopolies, replacement of food subsidies with food stamp scheme, and interest rate reforms (Lakshman, 1997). The post 1977 policy reforms have placed an unprecedented emphasis on the role of direct foreign investment in achieving the objective of export oriented industrialization (Athukorala, 1985).

From 2005 to 2011 the country made remarkable progress and reached $2,836 per capita. It is already in the cluster of lower middle income country. The economy demonstrates many signs of development such as seaports, airports, highways, road rehabilitation, and rural area development projects. Sri Lanka combines good human and natural resources with comparatively impressive indicators. For example; life expectancy is above 72 years and over 93 percent of population is literate. After the end of 30 years ethnic war, Sri Lanka is planning to become the 'wonder of Asia'. In spite of becoming the wonder of Asia, Sri Lanka tries to double its average per capita income from US $ 2000 to US $ 4000 by the end of 2016, starting from 2010. At the time of independence the agriculture sector accounted for more than 90 percent of total export and out of agricultural export, more than 50 percent was represented by tea. In 1986 there was a significant change in Sri Lankan export composition.

Textile and apparel sector became highest contributor in exports earning. Table 2.1 shows the composition of Sri Lankan export from 1948 to 2012. Since 1978, Sri Lanka's export structure did not change as much as expected.

Table 2.1: Composition of exports in Sri Lanka

Item	1948	1960	1970	1977	1985	1986	2000	2010	2012
Agricultural Products	98.6	94.4	91.7	79.3	52.5	46.3	18.2	24.6	23.9
Tea	**63.1**	**59.8**	**55.0**	**52.8**	**33.1**	**27.2**	**12.7**	**16.6**	**14.4**
Industrial Products	n.a	n.a	2.0	13.9	39.5	46.6	77.6	74.3	75.4
Mineral Products	n.a	n.a	0.9	4.5	2.4	3.5	1.8	1.1	0.6
Unclassified	1.4	9.5	5.4	3.8	5.6	3.7	2.5	0.0	0.1

Source : Central Bank Reports 1950 – 2012

According to table 2.1, the composition of tea export continuously declined during the given period of time. At the time of independence plantation agriculture was in the hand of well organized, well managed large companies. These companies are today being replaced by the small holders. It is about 70 percent of tea production. Tea cultivation is more sustainable on small holdings than on estates.

Sri Lanka has pursued bilateral and multilateral trade agreements, namely; Asia Pacific Trade Agreement, (APTA) (Previously known as Bangkok Agreement), South Asia Free Trade Agreement, (SAFTA), South Asian Preferential Trade Agreement (SAPTA), Indo-Sri Lanka Free Trade

Agreement (ISFTA), Pakistan-Sri Lanka Free Trade Agreement (PSFTA), Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation Free-Trade Area Framework Agreement (BIMSTEC), and Global Systems of Trade Preferences (GSTP) to enhance its trade performance. Sri Lanka's trade performance is not at satisfactory level though Sri Lanka is engaged in such trade agreements. At independence the economy was export led, however, today it has become import led. The turn of the economy from export led to import led symbolizes the lost of competitive position of export in the global market.

A country's competitiveness of export could be understood with the prominent knowledge of international trade theories. International trade theories range from traditional trade theories to new trade theories discussed in the following session.

2.2 International Trade Theories

Mercantilists in the 16th century believed that trade is a zero sum game. If countries wanted to become rich and powerful, they must export more and restrict imports. They advocated strict government control on trade. Adam Smith's theory of absolute advantage views that trade as a positive sum game. A country can enhance its wealth if it specializes in producing goods and services in which it has an absolute cost advantage over other countries. However, in that sense if a country has an absolute advantage in all products, there is no option to trade. The absolute cost advantage leads to specialization but may not lead to gains from trade. As a result of that, Ricardo's theory of comparative advantage was introduced.

According to the comparative advantage theory, a country must specialize in the products that it can produce relatively more efficiently than other countries. A country can engage in international trade even if it has absolute cost disadvantages in their production of goods and services. It can export goods and services which have lower absolute disadvantages and import goods and services with the largest absolute disadvantages. Comparative advantage theory is based on the labour theory and assumed that labour is homogeneous. Because of that assumption, comparative advantage can be referred in terms of opportunity cost. A country has a comparative cost advantage in the production of goods and services that can be produced as a lower opportunity cost than in other countries (Salvatore, 2008). The main criticism against the comparative advantage theory is that it does not explain the direction of trade. Heckscher-Ohlin (H-O) theory explains the causes of comparative advantage. H-O theory isolates factor abundance as the basic determinants of comparative advantage. There were several modifications and extensions of the basic H-O theory, such as; introduction of differences in human capital, product cycle theory and the technology gap theories (Salvatore, 2008). However, H-O theory was unable to address the intra-industry trade, as a result of that new trade theories opened up to the debate.

The new trade theory is based on monopolistic competition and free trade situation (without government intervention). Economies of scale became the dominant explanation of trade flows in differentiated products. Monopolistic competition, however, is not a true reflection of the real world (Smit, 2010, P.111). The focus of the trade model based on oligopolistic competition. In that case, trade based on oligopolistic behaviour can be viewed as a good explanation of how the real world

works (Salvatore, 2008, p.35). Porter (1990) questioned the ability of international trade theory to explain location advantage. He proposed a new theory, competitive advantage of a nation, to explain location advantage of trade. Traditional trade theories like; Heckscher-Ohlin, countries tend specialize in the commodities which production is intensive in factors with which they are abundantly endowed. Based on that, production process becomes routine and unskilled labours play a vital role in it.

In order to describe the determinants of international competitiveness, the conventional models of international trade theory are used (Daniel, 2000, p.418). The conventional international trade models consist with Ricardian, Heckscher-Ohlin (H-O), contemporary standard trade and industrial organization models.

Ricardian model emphasized that increases in factor (labor and capital) productivity or increases in productivity per capita enhances international competitiveness. Factor productivity increases come through technological changes. The H-O model suggested that enhancement of savings and investment in physical and human capital increases international competitiveness. The standard model emphasizes the world relative demand and world relative supply in the international trade. It suggests that increased entrepreneurial activity, hard work and product-process innovation as the determinants of international competitiveness. The industrial organization model helps to generalize the factors of the standard trade model.

The Ricardian model did not come across with the source of the differences in productivity among nations. However, H-O model attempts

to address the source of productivity differences among nations while emphasizing that nations tend to export goods whose production require inputs for which there is domestic abundance. If a nation is labour abundance, it tends to export relatively more labour intensive products. According to Daniel (2000, p.424), convention theories of international trade describes accumulation of resources, product process innovation and intensity of entrepreneurial activity that determine a country's international competitiveness. In addition to that, government policies should be there to foster savings and investment in physical and human capital, encourage risk taking, promote industriousness and advance free markets internationally.

2.3 Competitiveness

The global economies have five basic characteristics (Prokopenko, 2000); intensified global competition and emergence of new production, innovative technological environment, proliferation, spread and restructuring of transnational corporations, diversified global financial system and changes in the state's role in domestic and global economic affairs. Competitiveness can be applied to economies, countries, regions, industries, individual firms and individual product or service (Shafaei, 2009, p.21). At the level of individual firms, competitiveness is the ability of a firm to survive and prosper, given the competition of other firms for the same profits. Creating and sustaining competitive advantage required that a firm always stay ahead of its competition. A nation's industry is competitive relative to other nations' industries if the industry as an aggregate has a competitive advantage that allows it to consistently create

higher value and higher profits than rival industries in other nations. At the level of national competitiveness, the term is typically used to describe either a nation's ability to sustain high productivity, leading to higher standards of living for its citizens (Hoefter, 2001, p.43). However, it is difficult to find a definition for nation's competitiveness and determinants to measure the competitiveness.

In scientific literature, competitiveness is discussed under two basic approaches, namely; classical approach and neo-classical approach (Bruneckiene and Paltanavicience, 2012, p.52). The classical approach considers competitiveness as a dynamic contest process, whereas in the neo-classical approach, as a specific structure of the market.

Wignaraja (2003, p.21) classified theory of competitiveness into three distinct groups namely macroeconomic perspective, business strategies perspective, and technology and innovation perspective. Macroeconomic perspective defines international competitiveness; as the level of real exchange rate which in combination with requisite domestic economic policies achieves internal and external balances. (Appreciation of real exchange rate indicates a loss in a country's international competitiveness). Business strategy perspective concerns about the issues of rivalries between firms and strategy adopted by firms as they compete with each other locally or internationally. Michael Porter is a leading support of this perspective. Technology and innovation perspective of international competitiveness highly focuses on industrial competitiveness. It indicates that, the roles of enterprises are to import technology (via foreign direct investments), learn this technology (through training and development), improve and consequently innovate. Manufacturing export competitiveness index (MECI) is a competitiveness measurement which is associated with

technology and innovation perspective. Macroeconomic and business strategy perspectives provide insights view on competitiveness, however they do not provide complete framework to design appropriate public policies. The technology and innovation perspective provides the optimal framework for evaluating competitiveness and design policy remedies.

Taner, Oncu and Civi (n.d, p.378) regarded international competitiveness as the fuel for the engine of growth because it is the instrument that empowers the engine. To improve productivity and competitiveness, nation should compete in creating the policy, structure and institutional framework.

Durand and Giorno (1987), Anderton and Dunnett (1987) and Fagerber (1988) emphasize that the competitiveness of a nation depends on its advantage in the price of goods and services in the international marketplace. Kogut (1991) points out that county's competitiveness might explain differences in country capabilities in terms of technology and organization principles. Competitiveness is the name to describe the economic strength of a nation, industry or individual firm (Srivastava, Shah and Talha, 2006, p.213). The concept of competitive advantage is widely used in modern economic literature to evaluate the patterns of trade and specialization of countries in commodities which have a competitive advantage (Saboniene, 2009, p.50).

2.3.1 Definitions of Competitiveness

The President's Commission on Industrial Competitiveness (PCIC) (1985) defined competitiveness as;

"Competitiveness is the degree to which a nation can, under free market condition, produce goods and services that meet the rest of international markets while simultaneously maintain or expand the real incomes of its citizens" (cited on Taner, Oncu and Civi, n.d, p.374).

Organization of Economic Cooperation and Development (OECD) (2002) defined the concept of competitiveness as; "the degree to which a country can, under free and fair market conditions, produce goods and services which meet the rest of international markets, while simultaneously maintaining and expanding the real incomes of its people over the long-term".

"Competitiveness involves competition between rivals over a bigger economic power which allow employing limited resources in the most efficient way" (Stanikunas (2010) cited on Bruneckiene and Paltanavicience, 2012, p.52).

According to the International Institute for Management Development (IIMD), competitiveness is the ability of a nation to create and maintain an environment that sustains more value creation for its enterprises and more prosperity for its people (IIMD, 2009, p.475).

Considering the above definitions, competitiveness can be referred as a country's ability to create, produce and distribute products in international trade while increasing returns on its resources. As Porter (1990(a), p.73) mentioned, competitive advantage created and sustained through a highly localized process. Differences in national values, culture, economic structures, institutions and histories all contribute to competitive success.

Trade theories on international trade introduced two different concepts called comparative advantage and competitive advantage. What distinguishes the concept of competitive advantage from comparative advantage?

2.3.2 Competitive Advantage and Comparative Advantage

The main difference between concept of competitive and comparative advantage is the notion of a one-time advantage versus sustainable advantage in dynamic environment (Hoefter, 2001, p.43). A firm has a comparative advantage for a particular product if it produces at low cost than a foreign country. This advantage exists at one point of time. Competitors' strategic actions can wipe out this one-time cost advantage. A firm develops a competitive advantage if it is able to utilize its resources to create more value than its rivals. A firm should be able to maintain its better performance overtime. The concept of competitive advantage focuses on continuous efforts, learning and innovation in a dynamic environment.

According to Siggel (2007, p.3) distinguished between the concept of comparative and competitive advantage based on cost comparison of market prices. When costs are measured in terms of market prices, it deals with competitive advantage. On the other hand, when costs are measured in terms of equilibrium prices, it deals with comparative advantage. The wealth of a nation is determined by the productivity of its firms and industries. Therefore, the living standard of a nation depends on the capacity of its firms to achieve higher levels of productivity and to increase their productivity over time. Competitive firms have a competitive advantage because they use available resources more productively.

The book of the competitiveness of nations, Porter focuses on the activities of an industry that are required to achieve a sustainable competitive advantage (diamond model). The competitive advantage of nation is determined by; the strength of factor endowments, demand conditions, competitiveness of firm's strategy, rivals in major industries and strength and diversity of related and supporting industries. Sustained competitive advantage of an industry is the results of its capacity to continuous innovate and upgrade (Porter, 1990b). According to Porter, a firm creates competitive advantage by building up skills and know-how in managing its value chain.

To obtain a sustainable advantage to a firm, industry or nation, it is required to achieve competitive advantage. In international trade, export is a major source of foreign exchange for vulnerable economies. Long-term survival of the economy is dependent upon its ability to compete with exports of similar products from other countries in the international market.

2.4 Export Competitiveness

Export is often associated with competitiveness of the country at the international level. As Bruneckiene and Paltanavicience (2012, p.50) mention, in scientific literature, international competitiveness is often identified with exports. Export competitiveness can cover a wide range of aspects that enable the country to produce and sell goods in foreign market of a quality and at prices that ensure long-term viability and sustainability (World Bank, 2008). It indicates that export competitiveness lies on three complementary pillars, namely; an incentive framework, reduction of trade

related costs, and overcoming of market and government failures. Voon (1996) defined competitiveness as country's ability to gain market share on a common export destination.

"One of the most important factors, which could stimulate the development of national economy, is export [ ] Higher export competitiveness could help the country to overcome after-effects of economic recession and stimulate the development of the total national economy" (Bruneckiene and Paltanavicience, 2012, p.50).

Krugman (1994) also argued that, export is obviously important for the country competitiveness. Export expansion within external market increase export revenue and diversity of export structure can be considered as the country with necessary competitiveness. International competitiveness generally refers to the ability of a country to expand its share in domestic and world markets (Taner, Oncu and Civi, n.d, p. 380). Therefore, international trade may be an engine that drives economic growth of nations, whereas international competitiveness represents the fuel that empowers that engine. The competitiveness of export causes the nation to command greater market shares sustain the level of revenue, income, and employment created in the various sector of economy. Export competitiveness involves, measuring international share, diversifying export baskets, sustaining high rate of export growth, upgrading the technology, and skill content of export activity and expanding the base of domestic firms to compete internationally (Nogami, 2008, p.134).

Bruneckiene and Paltanavicience (2012, p.50) emphasized that the research of the concept of export competitiveness and the ways of improving competitiveness of national economy are relevant for the

countries in the period of recovering from the outcomes of economic crisis. To develop international trade, a country has to establish favourable conditions to provide goods and services to the external market which are competitive and demanded; thus, the country's export should be competitive. In this study researchers indicated that export competitiveness can be measured in different ways; analyze one or several factors of the country's export, creating composite indices, and analyze factors and conditions stimulate the international trade.

Considering the above mentioned factors export competitiveness is identified as the reflection of national competitiveness. A country has a mix of factors of export competitiveness and interaction of those factors creates the export competitiveness. Identifying the factors affecting a country's export competitiveness becomes an important phenomenon. Then, why a country needs to identify the determinants of export competitiveness? As Bruneckiene and Paltanavicience (2012) mention, without identifying factors affecting on competitiveness, it cannot be improved. The academic understanding of export competitiveness of a country is still forming and determinants of export competitiveness are still being identified.

2.4.1 Determinants of Export Competitiveness

The world's economic, social, cultural and technological changes make difficult for the organizations to compete. The acceleration of globalization, international trade relations, removal of trade barriers has revealed the need for continuous self- assessments of the organizations to obtain their primary objectives. The primary objectives of the

organizations consist with; to obtain a large share of growing market, convert threats to opportunities and to survive. The organizations are being managed for these objectives, will gain competitive advantage. There are many scientific literatures that identify several factors which affect to export competitiveness of a nation.

Zou and Stan (1998, p.343) analyzed the literature of determinants of export competitiveness between 1987 and 1997. According to the empirical study, determinants of export competitiveness are based on two dimensions; internal vs external and controllable vs uncontrollable. The most important determinants of export competitiveness are coming under internal-controllable category. In other words, product adaptation, product strength, promotion adaptation, price adaptation, competitive pricing, and channel relationship made an influence on determining export competitiveness. Other than these factors, attitudes and perceptions of management have been frequently cited as important determinants of export competitiveness (Zou and Stan, 1998, p.348).

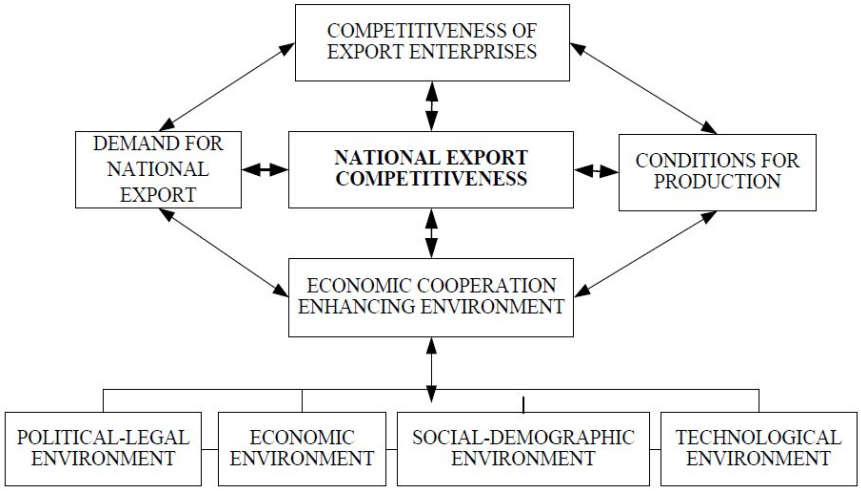
According to Nazar and Saleem (2009, pp. 106-108), many researchers have studied the management characteristics, firm's characteristics, and export marketing strategic capabilities as the determinants of export competitiveness. Management characteristics classified into three categories, namely; attitudinal characteristics, skill based characteristics and behavioural characteristics. Attitudinal characteristics consist with; management commitment, management perception toward competitiveness, export advantages and export barriers, management's international orientation and customer orientation. Export experience, foreign language proficiency and education level are included in skill base characteristics. Firm characteristics as determinants of export performance

compromise with firm size, technology level, foreign networking, knowledge and export planning. They identify that management characteristics, firm's characteristics, and export marketing strategic capabilities play a central role in the export competitiveness of the SMEs. This study further emphasizes that developing countries can use the synthesized model to understand export competitive of countries.

Nogami (2008, p.134) introduced three main determinants of the competitiveness such as; resources, outcomes and process. Process comprised with; capability (ability to utilize resources), develop a new technology, and environment (infrastructure, institutes and policy). Bruneckiene and Paltanavicience (2012, p.54) presented the model of measurement of the national export competitiveness by distinguishing inter-related and inter-effective factors. The model includes demand for national export factor, condition for production factor, competitiveness of export enterprises factor, and economic cooperation enhancing environment factor. They analyzed the competitiveness of export in the view of self-reinforcing process[1]. Further, researchers emphasized that export competitiveness could be more comprehensively considered if quantitative and qualitative indicators are combined. The study used 17 quantitative indicators (grouped into 7 categories) to measure export competitiveness of Baltic States[2] while taking quantitative measurement data to formulate export related policies. Figure 2.1 illustrates the model of measurement of the national export competitiveness.

[1] Input becomes output, which later becomes a new input for another output of new period
[2] Lithuania, Latvia and Estonia

Figure 2.1: Model of measurement of the national export competitiveness.



Source: Bruneckiene and Paltanavicience, 2012, p.55

Bezic, Vojvodic, and Stojcic (2010, p.12) developed a model which defines export competitiveness as a function of three groups of factors and forces, namely; firm characteristics, firm's behaviour and obstacles for doing business. The study revealed that regulatory environment, firm behaviour, intensity of competition, firm's size, innovation, ability to adjust to market trends, absorb new technology and quality standard are the crucial factors to determine export competitiveness. Karunarathne (1988) pointed out that regressed terms of trade, real interest rate, growth retardation effect, real exchange rate, government expenditure and size of external research as indicators of competitiveness. Transportation costs become other major determinants of export competitiveness. Bougheas, Demetriades and Morgenroth (1999) emphasized that differences in competitiveness may arise from differences in transportation cost. The differences in the volume and quality of infrastructure across countries may be responsible for the differences in transportation costs.

Based on the discriminate analysis, Srivastava, Shah and Talha (2006) identified that market capitalization and volume of production are determinants of competitiveness in the Indian public sector companies. Michael Porter analyzed the competitive advantage at the industry level while utilizing the models of five force and diamond. In the both model (five force and diamond model) the industry is the main unit of analysis and the success of individual firms depends on their ability to work within the structure of their industry. Kogut (1991) pointed out that countries' export competitiveness explain differences in country capabilities in terms of technology and organization principles. Voon (1996) defined competitiveness as country's ability to gain market share on a common export destination. This study evaluated how relative changes in real exchange rate, product composition, industry structure, and growth rates are influencing on export competitiveness. Lall (1997) indicated that technology and productivity factors are most important determinants of export competitiveness. As Fagerberg (1988), the international competitiveness of a nation depends on a country's ability to compete in price, technology and delivery.

The relationship between innovation and export competitiveness has been the subject of many researches in the international business literature. Innovation is becoming more and more relevant as a source of competitive advantages and it has been proven to encourage export success. Roper and Love (2002) examined the relationship between product innovation and export intensity among the UK and German manufacturing plants. Basile (2001) identified that innovating firms' export intensity is higher than non-innovative firms and there is a positive and significant relationship

between firm's own research and development expenditure and productivity growth.

GlaxoSmithKline (2004) emphasized that regulatory conditions, a strong legal framework for intellectual property, provision of an attractive fiscal and economic climate, availability of specialized capital, and relationship between industry and government, are the factors associated with the competitiveness. Pilania (2009) measured industry export competitiveness based on three measurements, namely; industry specialization, industry growth and relative industry size. Based on the results, industries are categorized into four groups; domestic dynamic, domestic static, global dynamic, and global static.

Due to the ever increasing engagement of firms in export activities, Beric, Vojvodic, and Stojcic (2010), emphasized the relationship between factors affecting to the export competitiveness of the firm. Factors include; firm's size, firm's experience, sunk cost (incurred to enter foreign markets), firm's location, innovation, outsourcing activities, transport cost, price policy, product line discontinuation, quality of institutional framework, and access to finance. In 2012, Fetscherin *et al.,* analyzed industry export competitiveness of India and developed multi-dimensional framework to measure industry export competitiveness. This study took 97 different industries from India and compared their export competitiveness relative to the same industries in other countries. Bruneckiene and Paltanaviciene (2012) created and applied export competitiveness index to present the determinants of export competitiveness in the Baltic States. In this study, seven variables, namely; demand for national export, conditions for production, competitiveness of export enterprises, political and legal environment, economic environment, social and demographic environment

and technological environment, are taken under seventeen indicators to measure export competitiveness within the period of year 2005-2010. Systematic analysis of secondary data is used as methodology of this study. Though this is a longitudinal study, it did not address the impact of change of factors of export competitiveness. The authors of this research did not clearly emphasize the significant relationship between factors affecting to export competitiveness.

Satharasinghe (1998) examined the export competitiveness of desiccated coconut industry of Sri Lanka. The main objective of the study was to identify the constraints imposed by the national policy framework in enhancing export competitiveness of desiccated coconut industry. To analyze competitiveness, the researcher used Porter's five force model (threat of new entrants, power of buyers, power of suppliers, threats of substitute and industry rivalry) and applied qualitative method to collect data. Outschoorn (2000) emphasized the need for tea industry to increase its competitiveness. The researcher conducted environmental analysis of tea industry using Porter's five force model. Regional plantation companies in Sri Lanka and other competitor countries like Kenya, India and China were taken as units of analysis. Findings of the study revealed that estate managers do not have much knowledge of market requirements, estate managers are more conversant about tea cultivation rather than producing premium quality tea and no research has been done on the tea manufacturing process and development of more effective machinery. The study also recommended that Sri Lanka tea industry needs to adopt a differentiation strategy to enhance competitiveness. In 2001 Ariyawardana examined the status of sources of competitive advantage and their influences on the performance of value-added tea producers in Sri Lanka.

Both strategy and resource perspectives and relationship between them were considered in analytical framework. Qualitative method used to collect data. Discriminant analysis and canonical analysis were used to identify the resource based sources and strategy based sources of competitive advantage. Resource based sources of competitive advantage such as; skills, managerial experience, size of firm, brand awareness and backward integration had positive influence on firm performance.

In spite of above mentioned studies, Bayoumi et, al., (2011), Hoekman and Nijinkeu (2007), Belderbos et, al., (2011), Sakho and Walkenhorst (2008), Ozcelik and Taymaz (2002), Golonka (2009), Fabrizio et, al., (2007) and Quan and Shiqui (2012) analyzed the determinants of export competitiveness Euro Area, OECD countries or Asian developed countries like China, Malaysia and Singapore.

To achieve a sustainable competitive position can be realized through organization's specific strategies. In this context, Porter's diamond model is an important model. Porter's model developed a framework that analyses why some countries and firms, depending on the sectors, are more competitive and successful than others. Porter's diamond model framework is used with the objective to explain how each of the different elements of the diamond individually as a well as a system have influenced the development of competitive advantage of industry or nation.

2.5 Porter's Diamond Model

Competitive advantage was coined by Michael Porter in 1990, assessing that competitive advantage was created and sustained by firms' ability to

innovate and improve the quality of products and production process through technological advancements (Porter, 1990b).

"Porter's diamond framework is not a new theory that explains the competitiveness of countries, but rather a framework that enhances the understanding of the international competitiveness of firms" (Smit, 2010, p.105).

There are rich literatures on Porter's diamond model (Watchravesringkan *et al.,* (2010), Jin and Moon (2006), Bakan and Dogan (2012), Prasad (2000), Prasad (2004), Dunning (1993), Sun *et al.,* (2010), Ariyawardana (2001). Porter's diamond model revealed that a nation cannot succeed based on the isolation of industries. A nation's success in a particular industry is driven by four interrelated determinants, namely; factor conditions, demand conditions, firm strategy, structure and rivalry, and related and supporting industries. The model also suggested that the government should act as a challenger for industry to aspire higher level of competitive performance.

2.5.1 Factor conditions:

Factor conditions determinants include the production factors necessary to compete in a given industry (Porter, 1990b), such as; human resources, physical resources, knowledge resources, capital resources and infrastructure. Porter (1990b) suggested that a nation should have an advanced or specialized factors to facilitate competitive advantage over its rivals. Competitive advantage depends on how efficiently and effectively

the factors are used and the conditions of these factors (quality, significance and shortage) are maintained.

2.5.2 Demand conditions:

The nature of domestic market demand for an industry's products is called as demand condition (Porter, 1990b). Demand conditions are the pressures based on buyers' requirements about quality, price and services in a particular industry. Demand conditions make the direction of innovation and product development.

Bakan and Dogan (2012, p.444) stated that demand condition has three main characteristics that are important to gain competitive advantage, namely; home demand conditions (home demand provides a clear picture of buyer demands than foreign competitors can have), demand size and pattern of growth (number of individual buyers and growth rate of home demand), and internationalization of domestic demand (mobile and transnational local buyers and influences of foreign need). The national competitive advantage increases when there is more domestic market demand. The degree of sophistication and level of local consumer demand are included into demand conditions.

2.5.3 Firm strategy, structure and rivalry:

Firm strategy, structure and rivalry refer to the conditions in the nation governing how industries are created, organized and managed, as well as the nature of domestic rivalry. These factors rely on management practices and organizational modes. Porter further emphasizes that domestic rivalry

is a major motivational factor to be innovative and succeed internationally. Porter attempted to introduce some non-economic factors, such as; traditions and values, that affect the motivation of organizations (Bakan and Dogan, 2012, p.445). The training, leadership, management manner and structure, hierarchical style, the relationship between work and management, working morale, relationship with consumers and interaction between companies make influence to obtain competitive advantage. The strategies and structures of firms depend heavily on the national environment and that there are systematic differences in the business sectors in different countries (Smit, 2010, p.117). Differences in strategies and structures of firms determine the way in which firms compete in each country and ultimately their competitive advantage. Porter believed that domestic rivalry forces firms to be cost competitive to improve quality and to be innovative.

2.5.4 Related and supporting industries:

Related industries are those in which organization can allocate production activities in the value chain. Supporting industries create potentials for competitive advantage by producing inputs, providing new technologies and opportunities to utilize new technology and transferring of knowledge. Suppliers and related industries which are internationally competitive drive a particular industry to be more competitive through innovation, upgrading, information flow, and shared technology development (Porter, 1990b). It is the external economies of related and supporting industry clusters, such as; network of specialized input providers, institutes and the spill-over effects of local rivalry, that become the true source of competitive advantage.

Supporting industries give potential competitive advantage to the organization in several ways. First, the firms have effective, rapid and early access to the most cost efficient input, second, continuous coordination between supplier and buyer industries regarding innovation and upgrading process and third, competitive advantage occurs from close working relations among supplier and buyer industries (Bakan and Dogan, 2012, p.445). When the supporting industries are competitive, organization takes advantage of more cost efficient and innovative inputs.

2.5.5 Chance and government role:

Apart from the main four factors, Porter argued that there are two other determinants of national competitiveness, chance and government role. A government can positively or negatively influence each determinant which contributes to nation's competitive advantage. For instance, the government may help to improve the quality of human resources factors (via educational training), improve the quality of infrastructure, develop free trade zones, negotiate with related and supporting industries, limit direct cooperation and enforce anti-trust laws (Porter, 1990a, p.87). Chance events are usually improvements outside the control of the organization (beyond the control of the organization). As Bakan and Dogan (2012, p.446) mentioned chance is composed of factors that are not well foreseen, such as; political decisions by foreign governments, wars, rapid changes in financial markets or other radical technical changes. Government should seek to improve the international competitiveness of its economy rather than shield it behind protective wall. Competitiveness of exports and import-competing products must be maintained in order to obtain greater market shares which sustain the levels of revenue, income and employment of the economy.

It is clear from literature that Porter's diamond model is not about trade, patterns of trade gains from trade, but it is rather a general framework for analyzing the determinants of advantage that enhance the international competitiveness of firms (Smit, 2010, p.121). To develop diamond model, Porter made an examination in ten countries (USA, German, Denmark, South Korea, UK, Italy, Sweden, Switzerland, Japan and Singapore) including different economic characteristics of 100 sectors for four years. Porter tried to find the elements that determine the competitiveness of nations and sub-sectors and to determine what kind of contributions provided to the development of competitive structure of countries.

Porter's theory deals with four factors which interact with each other to form conditions where innovation and competitiveness occurs. All four factors contain; all assets and skills vital for industry's competitive advantage, information which create the opportunities and give the answer to how convenient assets and skills should be managed, aims of all interest groups and what is most important power of the organization to investing and innovating (Bakan and Dogan, 2012, p.442).

Esterhuizen and Rooyen (2006) determined the factors influencing the competitiveness of agricultural exporting firms in South Africa. Porter's diamond model is used to identify the key factors that influence competitiveness of agriculture exports. Postal survey at firm level is used to collect primary data from randomly selected firm. Based on the findings, intense competition in the local market, stringent regulatory standards in the industry, efficient supporting industries, macroeconomic policy, availability of internationally competitive local primary input suppliers, cost and availability of capital, labour policy, growth and size of local

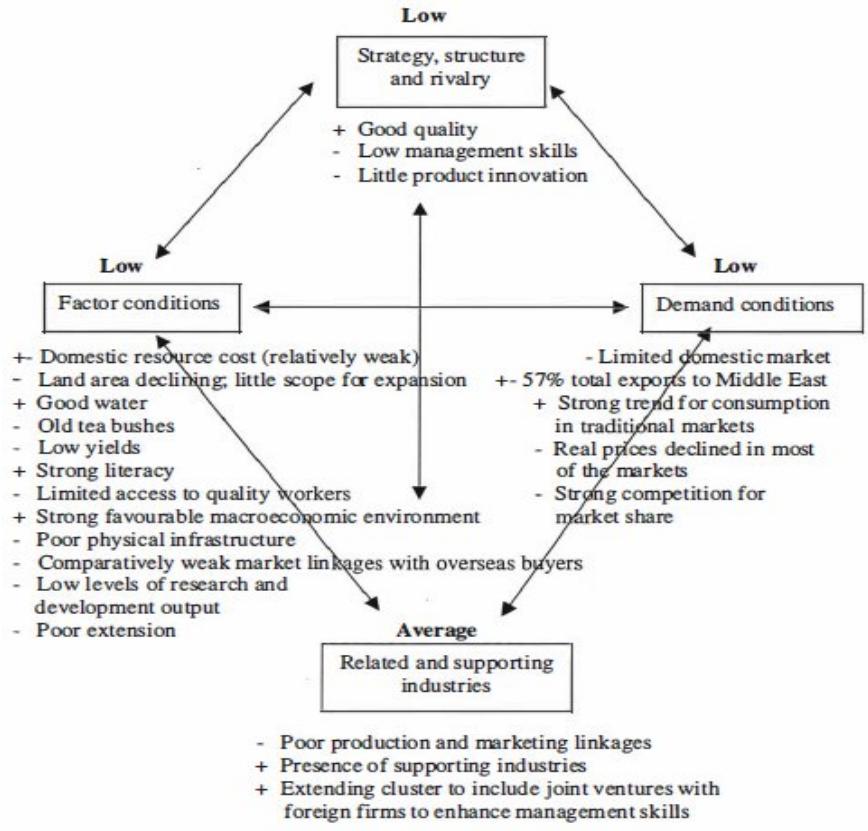
market and tax system are the key determinants of export competitiveness of agricultural exporting firms in South Africa.

Hoefter (2001) applied quantitative model on Porter's diamond model. The quantitative model included 17 elements and each is related to one of the determinants of Porter's diamond model. In this study, each element was ranked within -2 to +2. The main criticism of this study is, ranking mechanism is un-weighted and it is based on a subjective evaluation. Korean textile industry's competitiveness investigated by Jin and Moon (2006) using Porter's diamond model framework. They made a conclusion that industry' competitiveness is declining due to the labour cost which is related to the factor condition. Shafaei (2009) emphasized that, Porter's diamond model of competitive advantage provides a good basis for identifying the determinants affecting the competitive performance. He applied an analytical approach to assessing the competitiveness of the synthetic fiber industry in Iran based on Porter's diamond model.

Thailand apparel industry's competitiveness was studied by Watchravesringkan *et al.,* (2010) drawing attention on Porter's theory of the competitive advantage of nations. In addition to that secondary statistics and industrial publications were used to analyze the competitiveness. In contrast to determine a nation's export competitiveness, Olmenda and Varela (2012) identified and analyzed determinants of export competitiveness of the worldwide pharmaceutical industry. Through discriminate analysis, the study identify 32 variables, coming under Porter's diamond model five factors, of international competitiveness of pharmaceutical industry. Based on the findings, it identified that, factor conditions, demand conditions and related and supported industries are the determinants of export competitiveness of

pharmaceutical industry. In spite of five factors, they reveal the factors affecting competitiveness as; scientific research, technological innovation, availability, the quality of the university education and strategic alliances between firms. As main limitation, the study totally relied on data gathered from three global competitiveness reports, year 2002, 2005 and 2008. J.E Austin Association Inc. and Sri International (1998) developed the Porter's diamond framework for Sri Lanka (cited on Ariyawardana, 2001, p.65). Figure 2.2 illustrates the competitiveness diamond developed by J.E Austin Association Inc. and Sri International (1998) based on the overall tea industry of Sri Lanka.

Figure 2.2: Sri Lankan Tea Industry: competitiveness diamond



Source: J.E Austin Association Inc. and Sri International (1998) – (cited on: Ariyawardana, 2001, p.66)

The competitiveness model has been developed based on the overall tea industry of Sri Lanka and has given more emphasis to primary tea manufacturing. This did not concern about government influence on competitiveness of tea industry. And also they gave more emphasize on primary tea manufacturing rather than tea exporting. It spent more than 15 years where this study had conducted, therefore determinants of tea competitiveness may not be practicable to today's context. Porter's diamond model is also updated by adding more elements and variables during this period.

Government departments need to calculate competitiveness, especially in exports to design industrial policies, negotiate trade agreements or design development plans. Unfortunately, in Sri Lankan situation, competitiveness is not measured gradually, even it measures; it is only for reporting purposes. Calculated values of competitiveness are not utilized for future policy development processes.

The different theoretical explanations of competitiveness above explained are based on experiences in developed countries and they are not entirely appropriate for firms in Asian developing countries. Under developed countries in Asia, which are characterized as; being generally small, technologically under developed with unskilled workers, and operate within an under developed financial sector. Therefore, it is questionable whether above identified factors may determine export competitiveness of country like Sri Lanka. The main purpose of this study is to identify the factors which affect on the export competitiveness of tea industry in Sri Lanka.

The most of empirical studies on determinants of export competitiveness [(Watchravesringkan *et al.,* (2010), Jin and Moon (2006), Bakan and Dogan (2012), Prasad (2000), Prasad (2004), Dunning (1993), Sun *et al.*, (2010), Ariyawardana (2001), Olmenda and Varela (2012)] are based on qualitative approach. There are limited numbers of studies (Shafaei (2009), Hoefter (2001) which applied both quantitative and qualitative model to identify the factors affecting on export competitiveness based on Porter's diamond model. Therefore, it is more vital to apply quantitative approach to identify determinants of export competitiveness of tea industry in Sri Lanka. Porter's diamond model provides the link between firms and country specific sources of competitive advantage that firms leverage to gain international competitive advantage. To explain what are the determinants of export competitiveness of tea industry; this study will borrow elements from Porter's diamond model.

2.6 Limitations of Porter's Diamond model

Porter's diamond model did not formally test with econometric model. His study was based on stories. Dunning (1991) identified that it is very difficult to establish a direct cause and effect relationship with the diamond model because reasons for success for every industry are very specific. Porter did not use quantitatively measured criteria to evaluate the impact of the determinants on the competitiveness of a nation. However, in 1998, Porter constructed a Microeconomic Competitiveness Index (MICI) to measure the relationship between microeconomic development and prosperity of a nation (Hoefter, 2001, p. 68). Porter's model is not founded completely on one dominant economic theory (Hoefter, 2001, p.58). The model is driven more practically than theoretically. On the other hand,

Porter attempts to provide a theory that can explain the experience of very different industrial settings.

In spite of those limitations, Porter's diamond model makes two contributions (Hoefter, 2001, p.59); it explained why and how a nation is completely different in the production of particular good or service with other nations, and it directed to make the recommendations on what to change to improve the competitiveness of an industry.

2.7 Competitiveness Measurements

In scientific literature different methods of competitiveness measurements are focused on measurement of country, regional or enterprise competitiveness. The same methods can be applied to measure export competitiveness, including several factors determining export competitiveness (Bruneckiene and Paltanavicience, 2012, p.54).

A broad notion of competitiveness refers to the indication and skills to compete, to win and retain a position in the market, to increase market share and profitability and to consolidate commercially successful activities (Durand, Simon and Webb, 1992, p.6). The measurement of competitiveness should satisfy three basic criteria, namely; it should cover all the sectors exposed to competition (all goods traded or tradable that are subject to competition), it should encompasses all the markets open to competition and it should construct from data that are fully comparable internationally.

There are so many indices developed to measure competitiveness; especially export competitiveness, since 1965. As an example; Reveal

Comparative Advantage (RCA), Export Competitiveness (XC), Reveal Symmetric Comparative Advantage (RSCA), Net-Export RCA, Modified RCA (RCA*), Real effective exchange rate (REER), Global Competitiveness Index (GCI), Baltic States Export Competitiveness Index (BalECI), Michaely Index (MI_{ij}),Contribution to Trade Balance (CTB), Business Competitiveness Index (BCI), Manufacturing Export Competitiveness Index (MECI), and so on. All of the measurements are developed by developed countries in Western culture. The studies relate to; Saboniene (2009), Bruneckiene and Pattanaviciene (2012), Laursen (1998), Satharasinghe (1998), Wignaraga (2002), and Edwards and Schoer (2001), on export competitiveness are based on the above mentioned measurements.

2.7.1 Reveal Comparative Advantage (RCA)

Revealed comparative advantage (RCA) is one of the measures of international competitiveness and has gained general acceptance (Utkulu and Seymen, 2004). It is based on conventional trade theory and measures a country's exports of a commodity relative to that of a set of countries. The RCA analysis is largely based on contributions of Balassa (1977) and Vollrath (1991). The concept of RCA was introduced by Bela Balassa in 1965 to identify the relative trade performances in countries. In this model, it assumes that the commodity pattern of trade reflects inter-country differences in relative costs as well as in non-price factors.

The RCA index is defined as the ratio of two shares. The numerator is the share of a country's total export quantity of the commodity of interest in its

total exports volume. The denominator is share of world exports quantity of the same commodity in total world exports volume.

The ratio is defined as:

$$RCA_{ih} = (X_{ih}/X_{it})/(X_{wh}/X_{wt})$$

where;

RCA*ih*=revealed comparative advantage ratio for country i in product h,

X*ih*=country i's exports of product h

X*it*=total exports of country i

X*wh*=world exports of product h

X*wt*=total world exports

RCA is one the measure of international competitiveness and has gained general acceptance in the literature (Utkulu and Seymen, 2004). It is grounded in conventional trade theory, and it measures a country's exports of a commodity relative to that of a set of countries. Balassa (1977) analyzed the revealed comparative advantage of the major countries; United States, Canada, European Common Market…etc) in manufactured goods. Balassa used export and export-import ratios data to measure RCA of major industrial countries within the period from year 1953 to 1971. RCA is a widely used index to seek competitiveness and its progress. Widgrén (2004) investigated comparative advantage and its development across selected Asian, American and European countries using RCA index. Serin and Civan (2008) used the RCA and the comparative export performance (CEP) indices to seek to quantify the extent to which Turkey has a competitive advantage in the tomato, olive oil, and fruit juice in the EU market.

Batra and Khan (2005) attempted to analyze the pattern of competitive advantage for India and China in the global market. RCA analysis had been undertaken at both the sector and product levels. Saboniene (2009) examined export competitiveness in Lithuania export portfolio and compares it with other Baltic states. This study measured the competitiveness based on RCA, time frame from 2001 to 2007. The considering export commodities were; dairy products, edible vegetables, cereals, products of milling industry, prepared foodstuffs, products of chemicals, plastics and articles thereof and so on. The study identified that the concept of competitiveness covers several aspects, namely; product cost, product differentiation, and parameters of quality of exchange rate. Fertő and Hubbard (2002) investigated the competitiveness of Hungarian agriculture in relation to that of the EU employing four indices of RCA. As stated, consistency tests implies that the indices are less satisfactory as cardinal measures, but are useful in identifying whether or not country has a competitive advantage in a particular product group.

Laursen (1998) identified that RCA model has a significant issue. There are some countries which certain commodities to large share of total domestic export, but has a small share of total world export. When applying RCA index into cross countries, share of exports, in terms of domestic export and world export, become a major issue. Siggel (2007, p.3) argued that Balassa's RCA index does not measure comparative advantage, but competitive advantage, because exports can result from subsidies (or other incentives) provided and incentives can explain competitiveness. This shows that cost comparison based on market prices cannot be the basis of competitive advantage.

2.7.2 Revealed Symmetric Comparative Advantage (RSCA)

Since RCA turns out to produce values that cannot be compared on both sides of one, Dalum, Laursen and Villumsen (1998) had made Revealed Symmetric Comparative Advantage (RSCA) index, which is formulated as follows:

$$RSCA_{ih} = \frac{(RCA_{ih} - 1)}{(RCA_{ih} + 1)}$$

The values of RSCA*ih* index can vary from minus one to plus one. RSCA*ih* greater than zero implies that country *i* has comparative advantage in group of products *h*. In contrast, RSCA*ih* less than zero imply that country *i* has comparative disadvantage in group of products *h.*

2.7.3 Export Competitiveness Index (XC)

Export competitiveness index measures as a ratio of world market share of country A in export of i product in period t to its world market share in the previous period t-1 (Amir, 2000).

$$XC^{A}_{i} = \frac{X^{A}_{j}}{(X^{W}_{i})_{t}} \quad / \quad \frac{X^{A}i}{(X^{W}_{i})_{t-1}}$$

2.7.4 Net Export RCA

To measure competitive advantage or disadvantage of export, Mlangeni (2000) used net export RCA. It measures net trade to total trade ratio.

$$\text{Net export RCA} = \frac{(X^{A}_{i} - M^{A}_{i})}{(X^{A}_{i} + M^{A}_{i})}$$

Where X^A_i is country A's export of product i, and M^A_i is country A's import of product i. the outcome of net export RCA range from -1 to +1. The value between 0 to +1 indicates export competitive advantage and export has competitive disadvantage when value between -1 to 0.

2.7.5 Modified RCA (RCA*)

RCA* determined the competitive share of product's international trade among other products (Saboniene, 2009).

$$RCA^{*A}_i = \frac{X_i - M_i}{X_i + M_i} - \frac{\sum(X_j - M_j)}{\sum(X_j + M_j)} \times 100$$

Where Xj is country A's exports of all other products except i, Mj is country A's imports of all other products except i. The ratio ranges from – 200 to + 200.

2.7.6 Real Effective Exchange Rate (REER)

REER reflects the movements in a country's exchange rate adjusted for relative price differences between a country and its major trading partners. If REER depreciates over the desired time period, it indicates that an improvement in a country's international competitiveness. The fall in the REER index reflects the devaluation of the domestic currency. Edwards and Schoer (2001) evaluated the competitiveness of South African exports during 1990s by utilizing real effective exchange rate (REER), unit labour cost and reveal comparative advantage. In this study, researchers indicated that although the REER is a useful indicator of measuring competitiveness,

it does not specifically measure export competitiveness. It fails to capture the changes in competitiveness at a sectoral and regional level and it is very difficult to understand to what extent a depreciation of the real exchange rate will stimulate exports. Changes in REER can be caused by various economic performance, economic growth, demand for domestic goods, terms of trade or overvaluation or undervaluation of domestic currency. Therefore, REER has failed to capture changes in competitiveness at a sectoral level. It appears that, improvement in REER is not sufficient indicator of export competitiveness.

2.7.7 Manufacturing Export Competitiveness Index (MECI)

MECI is a competitiveness measurement which is associated with technology and innovation perspective (Wignaraja, 2003, p.23). It is constructed from three measures of manufactured export performance, namely; value of manufactured exports per capita, average manufactured export growth per annum, and technology-intensive manufacture export as a percentage of total manufactured export. MECI focuses on the ability of countries to produce commodities according to world market standard. Wignaraja (2003) calculated MECI for 80 countries by considering data from World Development Indicators. Outcomes of MECI revealed that Singapore has the highest MECI level (highest proportion of technology-intensive exports and highest manufactured exports per capita). South Asian economies have small share of high technology exports and low per capita manufactured exports values. At that time, Sri Lanka was ranked at 28^{th} in the overall list, becoming the leading South Asian economy owing

to its manufactured export growth rate. India ranked at 37th and had the highest share of technology exports in South Asian region.

2.7.8 Growth Competitiveness Index (GCI) and Microeconomics Competitiveness Index (MICI)

World Economic Forum (WEF) constructed composite indices to measure the national competitiveness, namely; Growth Competitiveness Index (GCI) and Microeconomics Competitiveness Index (MICI) (Vignes and Smith, 2005, n.d). GCI measures the capacity of the national economy to achieve sustained economic growth over the medium term. It comprises three components; technology capacity, quality of public institutions, and quality of macroeconomic environment. MICI concentrates on the microeconomic fundamentals and attempts to measure the conditions that a nation's sustainable level of productivity. MICI divides into two sub-indices, company sophistication index and quality of the business environment index.

2.7.9 Global Competitiveness Index (GCI)

In 2001, GCI was developed to measure the capacity of national economies to achieve sustainable economic growth over the medium term (Bin, 2009, p.6). It mainly focuses on three factors; technology capacity, quality of public institutions and quality of macroeconomic environment. Later, the World Economic Forum (WEF) developed GCI to identify a county's competitiveness strengths.

2.7.10 Business Competitiveness Index (BCI)

The world Economic Forum (WEF) also developed the BCI to identify the competitiveness strengths and weaknesses of a country's business environment through a microeconomic perspective. The outcomes of BCI help a country to identify factors which affect to increase its export competitiveness. Export competitiveness of developing countries is based on two factors; foreign market access and supply capacity. To improve the export competitiveness, Asian developing countries should consider; reviewing trade policies and regulations, streamlining institutional structures, strengthening coordination among regulatory agencies in public and private sectors, and simplifying and harmonizing trade procedures (Bin, 2009, p.09).

2.7.11 World Competitiveness Index

WCI computes and publishes by the World Economic Forum and Institute of Management Development since 1995. It is used to rank countries according to a number of conditions that are known to be favourable for business development. A large number of concepts of competitiveness have been proposed in the economics and business literature (Siggel, 2007, p. 15). The most of competitiveness indicators come under the macroeconomics concept. The best known macro concept in competitiveness measurement is the World Competitiveness Index.

2.7.12 Market Share

The change in market share has been taken as an indicator of competitiveness. This indicator has a sound literature support since 1987 it

has been taken as an indicator to measure competitiveness. Krugman and Hatsopoulos (1987) used market share as an indicator of the U.S.A competitiveness in manufacturing industry. Fagerberg (1988) explained that the market share of a country in world market as a indicator of competitiveness within three variables, namely; technical competitiveness reflected by research and development expenditure, price competitiveness reflected by the terms of trade and unit labour cost, and the output capacity. For instance, growing market share indicated the successful competition. Rose (1997) examined new dynamic measure of competitiveness. In this study, researcher defines a country to be competitive if it consistently exports goods faster than others. The researcher uses flying geese concept to explain the export's flow pattern of East Asia. According to the flying geese concept, Japan produces and exports new products before other countries in Asia. When a product becomes low profit and standardized, production shifts to the four tigers in Asia (Hong Kong, Korea, Singapore and Taiwan). Finally, production moved to lowest labour cost countries such as; Indonesia and China. This pattern of exports across countries called as Geese Flying in Formulation.

Gatto *et al.,* (2011) analyzed the decline in the US export share against the backdrop of alternative measures of the competitiveness of the US economy. To assess the composition changes in trade shares, researchers used constant market share analysis. Constant market share analysis is coupled up with commodity effect and competitiveness effect. The commodity effect measures the effect of composition on the change in the aggregate export share, by weighting the change in the composition of world exports by the initial composition of US exports. The

competitiveness effect measures the portion of the change in the aggregate share that is due to changes in the within category share of US exports.

To develop a model to analyze the interactions among the competitiveness factors of the real estate industry in Beijing and Tianjin Sun *et al* (2010) used Porter's diamond model. This study utilized structural equation modeling (SEM) to analyze the factors affecting on real estate competitiveness. In the model of Sun *et al* (2010), competitiveness factor was used as variable of firm's strategy, structure and rivalry of Porter's diamond model. The researchers argued that firms need a strategy to set direction for themselves and to outsmart competitors. Strategy enables the firm to concentrate its resources and exploit its opportunities and its own existing skills and knowledge to very fullest. By inspiring the work done by Sun *et al* (2010), Bakan and Dogan (2012) studied the main factors that affect the competitiveness of textile, food, and jewellery sectors of Kahramanmaras using Porter's diamond model. To measure competitiveness firm's strategy, structure and rivalry was used in the diamond model.

Table 2.2 displays the indicators of competitive measurements used in previous studies.

Table 2.2: Indicators of Competitiveness

Proposing Author	**Measurement Indicator**
Macro Concept	
Lipschitz and McDonald (1991)	Real exchange rate
Marsh and Tokarick (1994)	Real effective exchange rate
Hatsopoulos, Krugman and	Trade balance with rising real

Summers (1988)	income
Markusen (1992)	Real income growth with free
Dollar and Wolff (1993)	balanced trade
Fagerberg (1988)	Productivity
Sharpe (1986)	Market share increase
WEF - World Economic Forum (annual since 1995)	Market share World competitiveness index
Micro Concept	
Balassa (1965)	Revealed Comparative advantage
Bruno (1965)	(RCA)
Buckley et al. (1992)	Domestic resource cost
Durand/Giorno (1987), OECD	Composite, multi-variable
Helleiner (1989)	Price competitiveness
Hickman (1992)	Real effective exchange rate
Jorgenson, Kuroda (1992)	(REER)
Krugman, Hatsopoulos (1987)	Unit labour cost
Mandeng (1991)	Price competitiveness
Porter (1990)	Market share, change
Swann/Taghavi (1992)	Market share, change
Turner/Gollub (1997)	Composite, multi-variable
Sun *et al* (2010) and Bakan & Dogan (2012)	Price/product attribute Real unit labour cost Firm's strategy, structure and rivalry

Source: Siggel, 2007, p.15 with adaptations

As Pilania (2009, p.92) indicates that country level measurements of export competitiveness are limited because, the unit of analysis, the

country is too broad. Country-level assessments are provided by the World Competitiveness Index, the World Economic Forum, and Institute of Management Development. Therefore, industry level analysis on the export competitiveness is an appropriate unit of analysis on export competitiveness. The industry impacts the competitiveness of both firms and countries (Chan and Singh, 2000, p.741).

In addition to main determinants of export competitiveness introduced in Porter's diamond model, there may be many factors affecting export competitiveness. As Porter (1990(a), p.73) mentioned differences in national values, culture, economic structures, institutions and histories all contribute to competitive success. The main purpose of this study is to identify the determinants of tea export competitiveness in Sri Lanka. The main intention of selecting tea industry is tea continues to be the most important agricultural export which provides highest net export earning to the economy. It accounts for about 15 percent of total export earnings. While analyzing respondents' ideas in pilot survey relating to the influencing factors on tea export competitiveness in Sri Lanka, branding Ceylon tea; as high quality tea, make great impact to gain competitive advantage to tea industry. Creating brand loyal customers builds competitive position in global market when comparing other tea exported countries. Therefore, the concept of brand loyalty is comparatively more important for tea industry, especially for those who provide product with little differentiation and compete in dynamic environment. And also Sri Lankan tea is world famous for its rich aroma and taste. Then it is important to identify whether brand loyalty is a determinant of competitiveness of tea industry in Sri Lanka.

2.8 Brand Loyalty

"Brand has become so strong that hardly anything goes unbranded, even fruits and vegetables" (Wickramasinghe and Liyanage, 2009, p.58)

A brand is a distinguish name or symbol intended to identify the goods and services, and to differentiate those goods and services from the competitors. Brand provides the basis upon which consumers can identify and bond with a product or service. Powerful brands can gain competitive advantage to the firm (Ghodeswar, 2008, p.6). Lau and Lee (1999, p.341) stated that brand is important in the consumer market. It is the interface between consumers and the firm, and consumers may develop loyalty to brands. Brand is a market entity whose identity and personality are tangible in the mind of customer (Wickramasinghe and Liyanage, 2009, p.58). The brand loyalty needs to focus on points of differentiation that offer sustainable competitive advantage to the firm (Ghodeswar, 2008, p.4). A successful brand aims to develop a high quality relationship between customers and a firm. As Panyachokchai (2013, p.2) mentioned, brand loyalty is an important factor to keep long-term customers to use a product and also it is very important for firms to make a business plan and gain competitive advantage. Brand loyalty represents a favourable attitude towards a firm resulting in consistent purchase of the product over time and it is the result of consumers' learning that one brand can satisfy their needs (Assael, 2001, p.13). It reflects the commitment of a consumer to re-buy the firm's products consistently. Customer views a brand as an important part of a product and branding can add value to a product. As Wickramasinghe and Liyanage (2009, p.59) mentioned, branding helps the

consumers to make a purchase decision and stick with it each time they make a purchase of the same good. Brand is a promise.

Brand loyalty can be defined as the biased behavioural response expressed over time by some decision-making unit with respect to one or more alternative brands out of a set of brands and is a function of psychological process (Jacoby, 1971, p.25). According to Jones (2013), brand loyalty is defined by how people feel. Therefore, it is important to recognize customer loyalty, which is defined by what people do (re-purchase or order returns). Customers who love what a firm sells keep coming back to buy good or service. These customers are the bread and butter of any firm, and the base upon which a firm can grow. Early research on brand loyalty focused on behaviour of customers such as repeat purchase behaviour (Lau and Lee, 1999, p.341). Later, attitudes behind purchase are concerned as another important component on brand loyalty.

2.8.1 Brand loyalty and Behaviour of customers

Customer behaviour study is based on consumer buying behaviour with the customer playing the three distinct roles of user, player and buyer (Ghosh and Ghosh, 2013, p.47). Understanding the consumer buying behaviour makes an important influence on brand loyalty of the firm. Brand loyalty can build an emotional and rational bridge from customers to a firm. The study of Ghosh and Ghosh (2013) focused on consumer buying behaviour regarding consumption of tea in India. This study identified that consumer buying behaviour is an important component of brand loyalty. In other words, the most dominating attribute that governs the brand loyalty is consumer buying behaviour.

Wignaraga (2008) examined the relationship among foreign ownership, acquisition of technological capabilities, buyers' behaviour and export performance in Chinese and Sri Lankan clothing firms. Findings of the study indicated that foreign ownership, acquisition of technological capabilities and buyers' behaviour are positive and significantly correlated with export performance.

Developing country export firms consumer goods industry rarely engage in independent export marketing efforts including advertising (Wignaraga, 2008, p.6). Therefore, orders from industrial countries buyers become an important factor to determine export performance. According to the study of Wignaraga (2008, p.7), there is a positive relationship between orders from leading buyers and export performance of the firm. To support Wignaraga (2008) argument, Brencic, Ekar and Virant (2001) explored the influence of buyers' behaviour on export performance in Slovenian international firms. Then, it is clear that buyers' behaviour determines export performance of the firm and buyers' behaviour could be measured through repetitive purchasing order of leading buyers. Instead of purchasing order repetitiveness, export order rejections also could be considered as a variable to measure buyers' behaviour. Javalgi and Moberg (1997) stated that if customer has a good relation with [firm], there are more chances of consumer being loyal to the brand. Consumers who have high purchase frequency are most likely considered as satisfied customers. Consumer satisfaction is integrated as a dominant factor of purchase intentions with reference to brand loyalty.

Nawaz and Usman (2012) attempted to provide a broad view of brand loyalty by proposing a model. The key findings of the study revealed that consumer satisfaction, organizational commitment and trust are major

antecedents of brand loyalty for telecommunication sector in Pakistan. This study also revealed that consumer satisfaction is integrated as a dominant factor of purchase intentions with reference to brand loyalty. Satisfied customers keep long-term relationship with a firm through brand loyalty.

Satisfaction can be defined as the confirmation or disconfirmation of expectations with perceived performance on product items. Satisfaction is a relative concept that involves both cognitive and emotional components. The cognitive component refers to a customer's evaluation of the perceived performance in terms of its adequacy in comparison to some kind of expectation standards. The emotional component consists of various emotions such as; happiness, surprise and disappointment (Ting Yu and Dean, 2001, p.236). The emotional component is highly connected with service delivery of the firm.

Selnes (1993, p.309) explained that firm's reputation and customer's satisfaction has positive relationship with brand loyalty. Ting Yu and Dean (2001) conducted a study to identify the relationship between customer satisfaction and brand loyalty. The subjects of this study were the undergraduates in Australian universities. Findings of the study emphasized that there is a significant relationship between customer satisfaction and brand loyalty.

In addition to Selnes (1993), Ting Yu and Dean (2001), Nawaz and Usman (2012) and Panyachokchai (2013) conducted a research to find out the factors affecting brand loyalty of Nivea facial wash in Bangkok. In those studies, researchers mentioned that customer consumed a product (good or

service) based on the credibility of the brand. A brand needs to be concerned about a customer in terms of satisfaction. The study revealed that there was a statistically significant relationship between satisfaction and brand loyalty. Based on the findings of Selnes (1993), Ting Yu and Dean (2001) and Nawaz and Usman (2012) studies, and Panyachokchai (2013) studies, it is confirmed that there is a significant relationship between customer satisfaction and brand loyalty.

2.8.2 Brand loyalty and attitudes behind purchase

Lau and Lee (1999, p.343) argued that focusing on buying behaviour may not provide a firm basis for a complete understanding of the dynamics of brand loyalty. Researchers also argued that it is necessary to understand the attitudes behind purchase which drive brand loyalty. The attitude behind purchase is the consequence of trust in the brand. Then, trust in the brand in the study of brand loyalty cannot be ignored.

Trust is the willingness to rely on another party in the face of risk. This willingness derives from an understanding of the other party based on experience (Lau and Lee, 1999, p.343). Trust in the brand is outcome of the trust in the firm. The characteristics of the firm can influence the degree to which consumers trust in the brand (Lau and Lee, 1999, p.347). A consumer's knowledge about the firm's characteristics is likely to affect his or her assessment of the brand. The characteristics of the firm proposes to affect a consumer's trust in a brand are the consumer's trust in the firm. Researchers stated that when an entity is trusted, smaller entities that come under its fold tend to be trusted as well, because they belong to the larger entity. In the case of a firm and its brand, the firm is the larger entity and

the brand is the smaller entity in its fold. A consumer who places trust in a firm is likely to trust its brand. As such, firm's experience represents an important component of trust in the firm. Morgan and Hunt (1994, p.23) described that trust is an important factor in the development of relationship and exists when one party has confidence in an exchange partner's reliability and integrity. Trust arises when [customers] hold a belief that the [firm's] actions would cause affirmative effects for them (Nawaz and Usman, 2012, p.215).

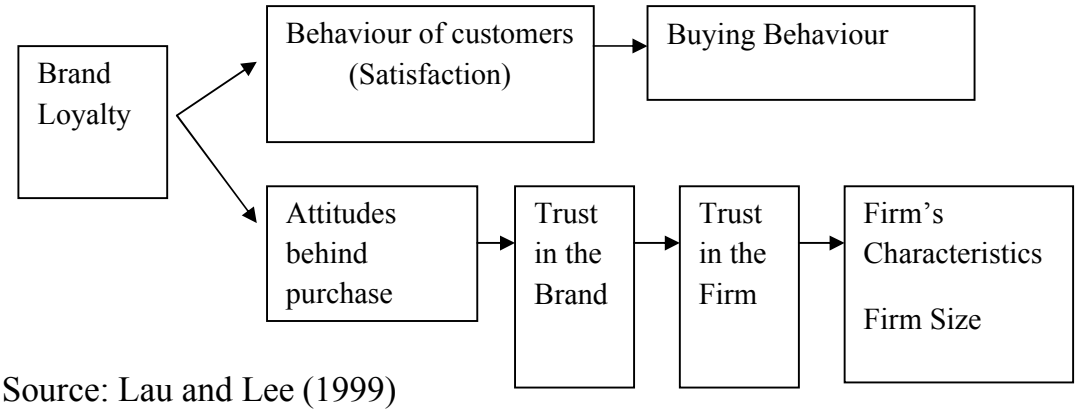
In addition to satisfaction, Nawaz and Usman (2012, p.219) also revealed that there is a connection between trust and brand loyalty. Their study argued that customers make a trust on the firm which has more trading experience in the market. In order to trust a brand, consumers should perceive quality as favourable object. Product quality can be valued through quality certificates obtained by the firm. Then, a firm which obtained quality certificates on its product can be considered as a trusted firm. To strengthen the findings of Nawaz and Usman (2012), Panyachokchai (2013, p.8) also revealed that trust in terms of credibility was the most influencing factor on brand loyalty. According to the study it recommended that the firm needs to increase its trust in terms of credibility to make its customers have brand loyalty in the long-term. It also emphasized that firm's trading experiences and obtained quality certificates make great influence on trust. Findings of Lau and Lee (1999, p.362) proved that trust in the brand is positively related to brand loyalty. Bezic, Katija and Stojcic (2010, pp.14-15) identified that firm characteristics as one of the major factor which may influence the export competitiveness. Firm size, firm experience level of international trade, firm location, innovations, price policy and quality certificate obtained are

explanatory variables which used to operationalized the firm characteristics. Similar to Bezic, Katija and Stojcic (2010) study, Nazar and Saleem (2009, p.107) identified that firm characteristics was a determinant of export competitiveness, according to their study, firm size, export experience, technology level, foreign contact and export planning were included into firm characteristics.

Lages and Montgomery (2004) emphasized that there is a significant relationship between firm characteristics and export performance. As firm characteristics, they considered; export commitment, international experience, firm size and quality certificate obtained. O'Cass and Julian (2003) examined the impact of specific firm characteristics, environmental characteristics and marketing mix strategy on export performance in firms in Australia. Product differentiation, firm capabilities and constraints, firm's international experience and distribution network were identified as elements of firm specific characteristics. Findings of the study revealed that firm characteristics impacts significantly on export performance of the firms. In other words, firm's experience and quality certificate obtained are factors consisted on firm's characteristics. Therefore, firm's characteristics make an important influence on brand loyalty of the firms. All Sri Lankan tea exporters have to adhere to the ISO 3702. A number of companies already possess ISO, HACCP and GMP certificates. The product can have good competitive position in the market based on trust, but if the customers feel low satisfaction on the product, there are many other products as alternatives to switch (Panyachokchai, 2013, p.7). Therefore, to enhance brand loyalty, satisfaction and trust need to be improved.

Therefore, this study believes that trust in the firm represents an important component of attitude associated with brand loyalty. Then there are two components that affect brand loyalty namely; buying behaviour and attitudes behind the purchase. Trust in the brand represents the attitudes behind the purchase. Trust in the brand derives from the trust in the firm. This conceptual model can be illustrated as follows;

Figure 2.3: Conceptual model of brand loyalty



Source: Lau and Lee (1999)

In summary, brand loyalty brings competitive advantage to the firm. It is based on thorough understanding of the firms' customers' behaviour and business environment. There are two components that affect brand loyalty namely; buying behaviour and attitudes behind the purchase. Consumer satisfaction is integrated as a dominant factor of purchase intentions of the customer. A brand needs to concern about a customer in terms of satisfaction. Trust in the brand derives attitude behind purchase of product. A consumer who trusts a firm is likely to trust its brand. Firm's experience and quality of the product are concerned as influential factors on trust in the firm.

2.9 Summary

This chapter has provided the theory as well as some of the relevant literature needed for the development of an analytical framework of export competitiveness. Porter's diamond model provided key foundation to develop a model to identify the determinants of tea export competitiveness in Sri Lanka. In understanding the global competitive market attention is drawn on how various aspects and relationships at various levels need to be studied for a improvement of international competitiveness. This study focused the definitions of competitiveness, determinants of competitiveness, and various measurements of competitiveness. The next chapter focuses on the description and justification of the methodology of approach to the study.

3. Methodology

This chapter explains the methodology of approach that is used to identify the determinants of tea export competitiveness in Sri Lanka. It mainly discussed the research design including conceptual framework, operationalization of the constructs, target population and sample, data collection method and data analysis method.

The goals of this chapter are;

To introduce main research approach

To provide a conceptual framework and operationalization of the constructs

To describe the major methods used to identify the determinants of tea export competitiveness.

3.1 Research Approach

The objective of this study is to identify the specific conditions that enable firms in tea industry in Sri Lanka to become internationally competitive. The main question of this study is: what are the success conditions that have led to become internationally competitive in tea industry in Sri Lanka. The previous studies of export competitiveness [Watchravesringkan (2012), Olmeda and Varela (2012), Srivastava, Shah and Talha (2006) and Daniel (2000)] were based on qualitative approach to collect data. Those studies adopted in-depth, semi-structured interviews with key resource persons to collect primary data. Contrast to those studies, Oral and Mistikoglu (2007), Sun *et al.,* (2010), Shafaei's (2009)

and Bakan and Dogan (2012) conducted their studies based on mixed approach; both qualitative and quantitative approaches.

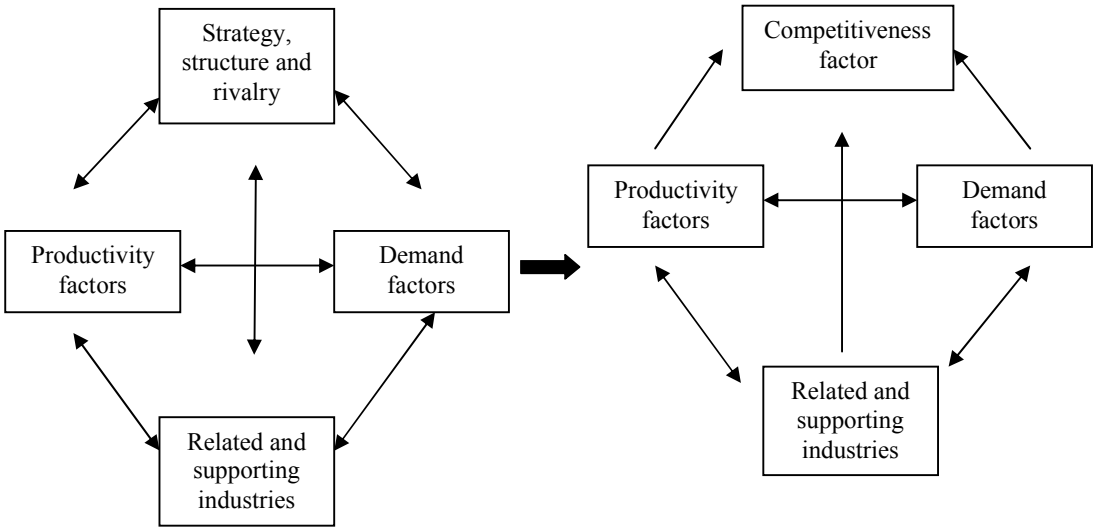
This study used quantitative approach to investigate determinants of tea export competitiveness in Sri Lanka. As Amaratunga *et al.,* (2002) mentioned primary goal of the quantitative research is to describe and understand the strength of relationships in order to establish causal associations among objectively specified variables through testing hypotheses derived from predictive theories. Further, it helps to control or eliminate factors that would weaken the researcher's ability to discover the true shape of reality. In quantitative approach, methods involve the precise measurement of variables and the collection of data under standardized conditions from a randomly selected sample. Then, it helps to provide wide coverage of range of situations fast and economically. As observed by Amaratunga et al., (2002), major disadvantages of quantitative approach are; seldom deviates from research plan, methods used tend to be inflexible and artificial, and incapable of dealing with reality in all its complexity. In contrast to quantitative approach, qualitative approach associates with researcher's ability to explore a subject in as real manner as is possible (Saunders, Lewis and Thornhill, 2000, p.381). The nature of qualitative approach implicates that qualitative data cannot be collected in a standardized way like quantitative data because qualitative data are based on meaning expressed through words. There are different strategies to deal with data collection in qualitative approach such as; case studies, focus groups, in-depth interviews, and observation. In addition to this, there is no a standardized method to analyze qualitative data. However, to eliminate experimenter bias and attract more credible results, the study applied quantitative approach to investigate determinants of tea export

competitiveness in Sri Lanka. All the constructs in the desired model were operationalized following the support from literature review.

3.2 Conceptual Framework

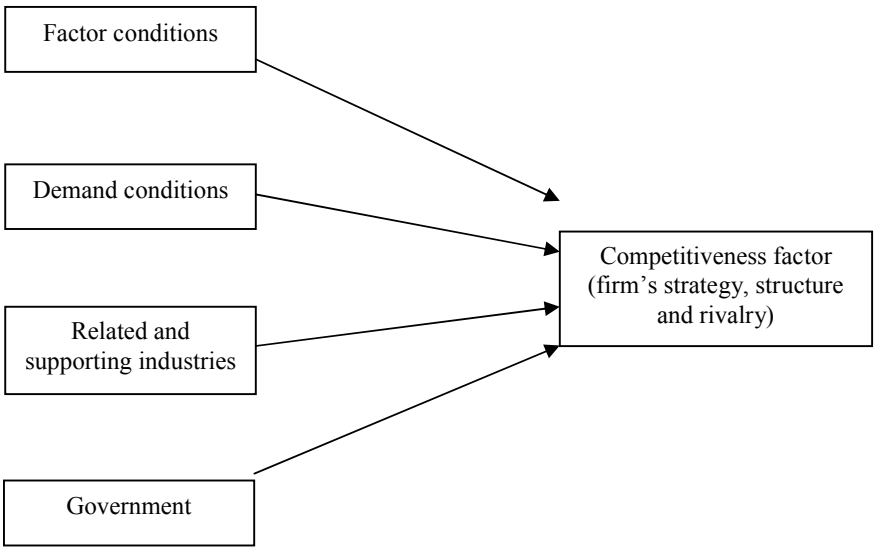
The proposed model in this study is based on Shafaei's (2009) approach, Sun *et al* (2010) and Bakan and Dogan (2012) model which are adopted from Porter's model. To develop a model to analyze the interactions among the competitiveness factors of the real estate industry in Beijing and Tianjin Sun *et al* (2010) used Porter's diamond model. In this study researchers argued that three variables of the diamond model; factor conditions, demand conditions and related and supporting strategy, affect the competitiveness factor. As competitiveness factor, firm strategy, structure and rivalry of the diamond model was used. Researchers used structural equation model (SME) to support their arguments. Firm's strategy, structure and rivalry explains how a firm or industry is originated, systemized and managed the domestic competition that could support a firm or industry to achieve a sustained competitive advantage internationally. By using Porter's diamond model with the argument of Sun *et al* (2012), Bakan and Dogan (2012) analyzed competitiveness of the selected sectors. In Bakan and Dogan (2012) model, four variables of the diamond model; factor conditions, demand conditions, related and supporting industries and government) were used as independent variables and as a dependent variable, competitiveness, firm's strategy, structure and rivalry were used. Figure 3.1 and 3.2 illustrate the models developed by Sun *et al* (2010) and Bakan and Dogan (2012) based on Porter's diamond model.

Figure 3.1: Research model Sun *et al* (2010)



Source: Sun *et al* (2010, p. 243)

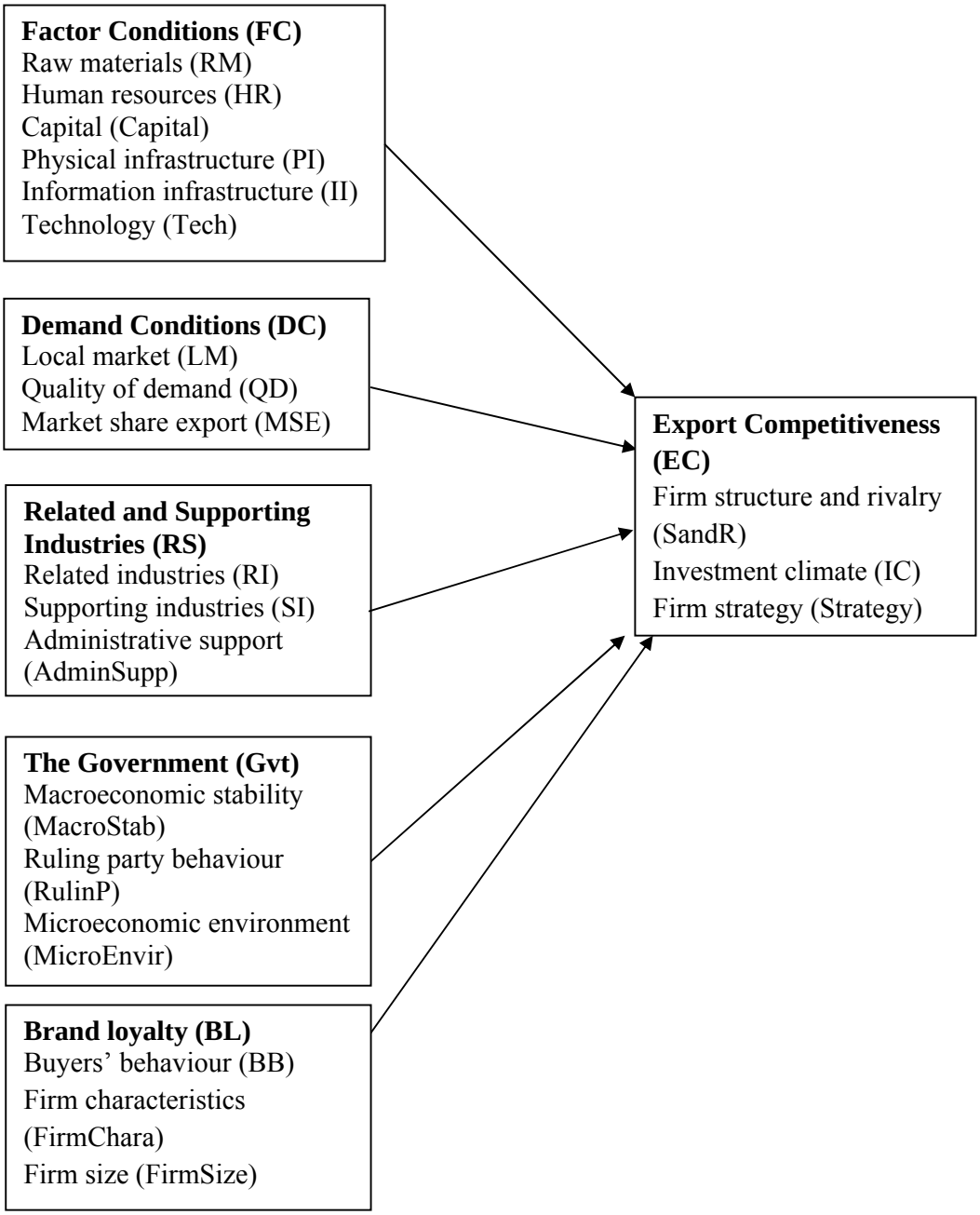
Figure 3.2: Research model of Bakan and Dogan (2012)



Source: Bakan and Dogan (2012, p.451)

By following the above mentioned research approaches, this study model consists of four determinants (factor conditions, demand conditions, related and supporting industries and government) and one dependent factor (export competitiveness); each includes two to six elements. Each element comprises with number of variables that is 49 variables in total. In addition to the determinants of diamond model, brand loyalty is added as a determinant of tea export competitiveness in Sri Lanka. Supporting with the relevant literature [Lau and Lee (1999), Morgan and Hunt (1994), Nawaz and Usman (2012) Panyachokchai (2013), Bezic, Katija and Stojcic (2010), Lages and Montgomery (2004), and O'Cass and Julian (2003)] the determinant of brand loyalty consists of three elements and two variables are included in each element. Then, total determinants of proposed model in this study are five and total elements are 21. The conceptual framework of the study is illustrated in Figure 3.3.

Figure 3.3: Conceptual Framework of the Study



Source: Porter (1990, p.60) with adaptations Shafaei's (2009) and Bakan and Dogan (2012)

3.3 Operationalization

Competitiveness can be defined as the ability of a firm or a product to compete with others and desire to be more successful than others. In the process of understanding and investigating competitiveness, it is challenging to identify, measure and analyze the attributes of competitiveness. Product or service becomes superior if it provides a higher value to customers either in form of lower price or by providing unique benefits at a higher price. In order to determine the factors affecting the competitiveness, it is necessary to define clear indicators to measure competitiveness. The development of global sales volume, market share or profitability is identified as the indicators to measure the competitiveness of a firm or industry (Hoefter, 2001, p.61).

To measure and analyze industry competitiveness of India Pillania (2012) considered export market share of 97 different Indian industries over a five year period. Researcher utilized data from the United Nations Conference on Trade and Development (UNCTAD) and the World Trade Organization (WTO). Srivastava, Shah and Talha (2006) used composite competitiveness index for measuring competitiveness in Indian public sector companies. Composite competitiveness index included both short-term and long-term criteria such as market capitalization, return on capital employed, net sales, and value of production. Though profitability is the best indicator to measure the competitiveness, it is difficult to operationalize. Torok (2008) analyzed the development of export competitiveness of new member countries of the European Union by utilizing market share as an indicator of export competitiveness. The growth of market share is one logical realized consequence of the improvement of competitiveness. Therefore, market share of a particular

product is considered as an indicator to measure the competitiveness of a firm or industry. To measure the firm's competitive position, market share is the important indicator; however, to identify the factors affecting on competitiveness there should be clear elements to measure competitiveness of a firm.

Shafaei (2009) utilized quantitative analysis of Porter's model. It includes 17 elements, of which each is related to the determinants in the Porter's model. Each element is ranked on an ordinal scale from 2 (very important for competitive advantage) to -2 (major obstacle to competitive advantage) and 0 (not important for competitive advantage). In addition, the relative importance of each element is defined within a range of 1 to 4. It gave equal importance to each element in the framework. The following equation 01 is used to measure the competitiveness of each element (Shafaei, 2009, p.28);

$$Gi = \frac{Vi\sum_{j=1}^{vi} Nj - \sum_{j=1}^{vi} Mij}{Vi\sum_{j=1}^{vi} Nj} \qquad \textbf{Equation 01}$$

where:

Gi = competitive performance of element i

Vi = number of variables for element i

Nj = importance of the jth variable in the ith element

Mij = score of the jth variable in element i

To calculate the competitiveness of each determinant, the following quantitative equation 02 is used.

$$GDk = \frac{\sum_{i=1}^{n} WiGi}{\sum_{i=1}^{n} Wi} \qquad \textbf{Equation 02}$$

Where:

GDk = competitive performance of determinant k varying within a range of 0 to 1

Gi = competitive performance of element j,

n = number of elements associated with determinant k

Wi = the relative importance of element i

In order to gain an overview of a firm's competitive status, the following equation 03 is used;

$$G = \frac{\sum_{k=1}^{m} WkGDk}{\sum_{i=1}^{n} Wk} \qquad \textbf{Equation 03}$$

Where:

G = competitive performance of the firm

m = number of determinants

GDk = the competitive performance of determinant k

Wk = the relative importance of determinant k

However, there are some main shortcomings in Shafaei's approach. The first is that the ranking for each element is based on a subjective evaluation and does not defer a clear and structured guideline for ranking. The second is that the ranking mechanism is un-weighted so that the relative importance of the elements and determinants are not identified.

In 2010, Sun *et al* (2010) made a unique change in diamond model arguing that three parameters of diamond model (factor conditions, demand conditions and related and supporting industries) are covered in the fourth dimension of the diamond model, firm's strategy, structure and rivalry (refer figure 3.1). Content validity of the model developed by Sun *et al* (2010) confirmed by Bakan and Dogan (2012) employing the same model to find out the factors affecting the competitiveness of selected sectors. Firm's strategy, structure and rivalry get hold of the hardiness of domestic competition. Strategy is needed to focus effort and promote coordination activity. In the global competition the rivalry is very important. The pattern of rivalry has an effect on process of innovation and ultimate outcome is international achievement. As Bakan and Dogan (2012, p.446) mentioned the national diversities in business practices and approaches such as; management manner and structure, relationship between work and management, and working morale, make advantages and disadvantages in competing in different sectors. Therefore to measure competitiveness factor, firm strategy, structure and rivalry was used in the diamond model.
To measure the variables used in this study a likert scale was applied as a measurement scale of choice. The scale of choice ranged from strong disadvantage to strong advantage with a neutral point in the middle. Operationalization of the variables in the study is exhibited in Table 3.1.

Table 3.1: Operationalization of the variables

Determinant	Element	Variables
Factor conditions	Raw materials	1. Availability of raw materials 2. Quality of raw materials 3. Cost of raw materials
	Human resources	4. Level of education of employees 5. Quality of on-the-job training
	Capital	6. Availability of loan facilities 7. Accessibility to credit and stock market 8. Foreign direct investment opportunities 9. Return on investment (ROI)
	Physical infrastructure	10. Quality of basic infrastructure (road, port, energy) 11. Advanced infrastructure quality (telecommunication, storage, logistics) 12. Availability of business and market information
	Information infrastructure	13. Use of electronic commerce (e-commerce) 14. Accessibility of core and supporting technology

	Technology	15. Possibility of technology diffusion 16. Cost of technology
Demand conditions	Local market	17. Domestic market share 18. Openness of public sector contacts 19. Change rate of customer need
	Quality of demand	20. Quality of demand and standard of regulations 21. Knowledge level of foreign customers about the product
	Market share export	22. Neighboring countries' share in foreign demand
Related and supporting industries	Related industries	23. Level of 'joint market studies' with other firms in the industry 24. Level of 'joint purchasing' with other firms in the industry 25. Expenditure on research and development
	Supporting industries	26. Relations with research and development institutions 27. Relations with universities 28. Relations with public authorities and institutions (Other than Universities) 29. Level of active work of relevant civil society agencies (e.g; Lions

		Club)
	Administrative support	30. Quality of cost administration 31. Regulatory environment conditions
Competitiveness (Firm strategy, structure and rivalry)	Structure and rivalry	32. Competitive intention of the firm 33. Presence of entry barriers to the industry 34. Product differentiation
	Investment climate	35. Proficiency level of national and international fair regulation level of the industry 36. Presence of trade agreements between countries 37. Industry related labour policy 38. Economic and political stability
	Strategy	39. Management support on strategy formulation 40. Management support on strategy implementation 41. Coordination with suppliers
Government	Macroeconomic stability	42. Stability of exchange rate 43. Tariff structure of the country
	Ruling party behaviour	44. Philosophy of the ruling party of the country 45. Presence of import-export policy of the country 46. Government support on export expansion

	Microeconomic environment	47. Government support on technology improvement 48. Incentives provided by the government
Brand Loyalty	Buyers' behaviour	49. Level of continuous purchasing of buyers (Order repetitiveness of buyers) 50. Level of export order rejections 51. Preference level of foreign demand to product in terms of origin and brand 52. Firm's experience level on international trade
	Firm characteristics	53. Quality certificate obtained by the firm (eg. ISO, SLS, ICS) 54. Total asset value of the firm (firm size)
	Firm size	55. Number of employees in the firm

Source: Shafaei (2009, p.27) with adaptations

3.4 Population and Sample

The main purpose of this study is to identify the factors affecting tea export competitiveness in Sri Lanka. The scope of this study then is relevant with entity which has experience in exporting activities. Therefore, the target population of the study consisted with individual firms which are engaging in tea export in Sri Lanka. The study excluded tea manufacturing firms, especially tea factories, from the target population. According to industry

statistics there are one hundred and seventy seven firms engage in tea exporting (Sri Lanka Export Development Board, 2012). Theoretical requirements of sample selection clearly mentioned that when target population is less than three hundred it is useful to consider all target population as a sample. Maurel (2008, p.126) analyzed the factors affecting French wine small and medium size enterprises export performance. Population of the study consisted with the wine companies with a turnover superior to three million euro. Then target population counted two hundred and fourteen companies and all of them were taken as the sample of the study. Researcher highlighted that population was not adequate to select sample and it was useful to take whole elements in the target population as the sample. Then data were collected through mail survey questionnaires from two hundred and fourteen companies. Applying the same phenomenon, to fulfill the theoretical requirements of sample size, one hundred and seventy seven firms were taken as the sample of this study.

3.5 Data Collection

The previous empirical studies related with export competitiveness, Toroko (2009), Pillania (2008), Maurel (2009), Srivastava and Talha (2006), Bezic, Vojvodic, and Stojcic (2010), Mahammad and Fetscherin, Alon, Johnson, and Pillania (2012), were carried out utilizing secondary data sources. The main secondary data sources used in those studies are the global competitiveness index, the world economic forum, business environment and enterprise performance survey conducted by World Bank, United Nations Conference on Trade and Development (UNCTAD),

World Trade Organization, and industry related data sources of the country.

To examine the determinants of export competitiveness primary data were also collected in the previous studies. Shafaei (2009), Esterhuizen and Rooyen (2006), Bakan and Dogan (2012), and Sun *et al.,* (2010) used primary data sources to achieve the aim of their studies. A structured questionnaire and face-to-face interview were the main techniques they used to collect primary data from the selected samples. As Shafaei (2009. P.26) stated it is useful to collect primary data to achieve the main purpose of the study when there is no relevant and sufficient data from secondary sources. In Sri Lankan context, it is also difficult to gather relevant data which suite to measure the desired model. Therefore, to overcome the difficulty of collecting data from secondary data sources in Sri Lanka, this study decided to rely on primary data sources to achieve the main objectives. As primary data collection technique, a structured questionnaire was used in this study. After selecting the sample, the data were obtained by using structured questionnaires in this study. "A good questionnaire appears as easy to compose as does a good poem" (Zikmund, 2003, p.330). Questionnaire is an important tool to gather fast, reliable, and systematic data. Good questionnaire design is a key to obtain good survey results. To do the analysis of determinants of export competitiveness in Sri Lanka's tea industry, a questionnaire was developed using Porter's determinants of competitive advantage. Operationalized constructs in the desired model were taken as questions. Questions in the questionnaire were designed as structured questions in terms of gathering information on ordinal scale form. All the constructs in the desired model; demand conditions, factor conditions, related and supporting industries, government support, brand

loyalty and export competitiveness were converted into measurable terms and ordinal scale was applied as a measurement scale of choice. The ordinal scale is ranging from 1 (strong disadvantage) to 5 (strong advantage) with the neutral point of 3 (neither competitive advantage nor competitive disadvantage). Responders' ideas and views related to the tea industry and influencing factors on export determinants were asked with the open-ended question in the questionnaire. Refer annexure 01.

Sample of the study consisted with tea exporting firms in Sri Lanka. In the firm relevant body had to be selected to complete the questionnaire. Shafaei (2009) obtained data from a questionnaire completed by the key managers at the companies studied. The studies of Sun *et al.,* (2010) and Bakan and Dogan (2012) data were collected from key managers at their selected sample. In those studies key managers were defined as top level managers in the company. Following the same phenomenology of those studies, key managers, mean top level managers, in the tea exporting firms in Sri Lanka were chosen as the respondents of this study. Electronic mail (e-mail) survey was used to collect information from top-level managers of the tea export companies. Respondents were asked to indicate degree of advantage, ranging from 1 to 5, of the elements in the conceptual framework in meeting tea export competitiveness.

3.6 Statistical Method

This study is centered around the determinants of tea export competitiveness in Sri Lanka. In this study, export competitiveness (dependent variable) and independent variables (factor conditions, demand conditions, related and supporting industries, government and brand loyalty) are measured using ordinal scale of measurement. In ordinal scale,

values given to measurements are ordered. The parametric and non-parametric statistics refer to the two major groupings of statistical procedures. When data are interval or ration scale, parametric statistical procedures are appropriate. On the other hand, when data are either ordinal or nominal, it is generally appropriate to use non-parametric statistical test (Zikmund, 2010, pp.505-506). The validity and reliability analyses were conducted to identify the appropriateness of research instrument. If measures lack reliability and validity, central model estimates may be substantially biased. It leads to overlook the relationship that could be significant. To overcome those issues, factor analysis, construct reliability, composite reliability and discriminate validity were performed in this study.

To identify the importance of particular factors for the competitiveness of tea export in Sri Lanka, structural equation modeling (SEM) is an appropriate technique. SEM is a very general statistical modeling technique which represents factor analysis, path analysis and regression analysis. It is a statistical technique for testing and estimating causal relations among variables. Monecke and Leisch (2012, p.1) stated that SEM is designed for working with multiple related equations simultaneously, it offers a number of advantages over some more familiar methods and therefore provides a general framework for linear modeling. As Hair *et al.*, (2012, p.414) mentioned structural equation modeling is a well-known technique used to study relationship among multivariate data. With the arising of issues related to data characteristics (non-normal data) and sample size in SEM, partial least squares structural equation model (PLS-SEM) was introduced. According to Monecke and Leisch (2012, p.2), depending on the researcher's objectives and the view of data to

theory, properties of the data at hand or level of theoretical knowledge and measurement development, PLS-SEM path modeling is more suitable. PLS-SEM application has expanded in recent years with various disciplines. PLS-SEM works particularly well with small sample sizes. As a popular rule of thumb for this model estimations (Hair *et al.*, 2012, p.420), sample size should be ten times the maximum number of path in the constructed model. Having smallest sample size, Lee (1994) conducted a study, consisted with 18 firms (n = 18) to identify the impact of firm's risk taking attitudes on advertising budget. Then, there is an empirical evidence to satisfy small sample size and PLS-SEM application.

In this study, ordinal scale measurements were used to quantify the dependent and independent variables. Haenlein and Kaplan (2004, p.285) mentioned that PLS-SEM generally works with nominal, ordinal, ratio and interval scaled variables. However, Hair *et al.*, (2012, p.421) indicated that when working with continuous data PLS-SEM does not face any problem, but when working with nominal data it is not possible to suppose there is any underlying continuous distribution. In recent years there are empirical studies related to competitiveness based on SEM. Sun *et al.*, (2010) developed a model utilizing structural equation model to analyze the interaction among the competitiveness factors of the real estate in China on the basis of Porter's diamond model. In order to analyze the factors affecting competition in brick industry in Turkish, Oral and Mistikoglu (2007) used Porter's diamond model with partial least squares structural equation model (PLS-SEM). Further, Metaxas and Economou (2012) investigated the importance of territorial characteristics on firms' competitiveness by using PLS-SEM analysis. Both studies; Oral and Mistikoglu (2007) and Economou (2012) revealed that PLS-SEM was an

appropriate statistical analysis to identify the determinants of competitiveness. Therefore, a review of empirical studies, as described above, reveal that PLS-SEM plays an important role in shaping factor identification of competitiveness. Smart PLS version 2.0 statistical package was employed to perform PLS-SEM application of this study.

Multicollinearity between variables is an important issue when identifying determinants. According to Denis (2011), one very important assumption of regression analysis is that variables entered into the regression equation are not perfectly correlated with one another. That is they do not have pairwise bivariate correlations. Multicollinearity refers to the presence of highly intercorrelated independent variables in regression models. At least some of the predictor variables are correlated among themselves. In other words, it results when a model has factors that are a bit redundant. It leads to unreliable and unstable estimates of regression coefficients. The ways to measure multicollinearity are the tolerance and variance inflation factor (VIF) which assess how much the variance of an estimated regression coefficient increases if the predictors are correlated. Then, tolerance and variance inflation factor were utilized to measure the impact of multicollinearity among the variables in a regression model. To conduct the multicollinearity test, Smart PLS statistical package does not have required facilities. Therefore, statistical package for social science (SPSS) version 16's regression analysis was utilized to measure multicollinearity issue in independent variables.

Single research method may suffer from limitations associated with that method or from the specific application of it. Multiple methods offer the prospect of enhanced confidence. One such method is known as

triangulation. As Bryman (2004, p. 43) mentioned, triangulation refers to the use of more than one approach to the investigation of a research question in order to enhance confidence in the ensuing findings. Triangulated technique is helpful for cross-checking and used to provide confirmation and completeness of research findings. It allows providing a more complete set of findings and helps to ensure the validity of research findings by cross-checking them with another method. It increases the validity and credibility of the results. Hussein (2009, p.2) also stated that triangulation is a process by which a researcher wants to verify the findings by showing that independent measures of it agree with or, at least, do not contradict it. There are five types of triangulation; data triangulation, theoretical triangulation, investigator triangulation, data analysis triangulation and methodological triangulation Hussein, 2009, pp.3-4). Data analysis triangulation is described as the use of more than one method to analyze the same set of data for validation purposes. In addition to validation purposes, data analysis triangulation can be described further as the use of more than one method of data within the same study for both validation and completeness purposes. To achieve the validity and completeness of the results, this study employed two statistical analyses; partial least squares structural equation model and regression analysis. As the secondary data, sectoral reports, international databases, and scientific articles were investigated.

3.7 Hypotheses Development

The determinants obtained in accordance with the existing literature [Sun *et al* (2010) and Bakan and Dogan (2012), Watchravesringkan (2012), Olmeda and Varela (2012), Srivastava, Shah and Talha (2006) and Daniel (2000), Oral and Mistikoglu (2007), Sun *et al.*, (2010), Shafaei's (2009)] hypotheses have been developed for analysis of this study. In statistical theory, a hypothesis is an unproven proposition or supposition that tentatively explains certain facts or phenomena (Zikmund, 2010, p.499). The proposed model of this study consisted with five independent variables; factor conditions, demand conditions, related and supporting industries, government and brand loyalty and the dependent variable; export competitiveness. Hypotheses were developed to test the impact of independent variables on dependent variable. According to the model, the following research hypotheses are defined;

H1: The factor conditions have a positive effect on the export competitiveness of tea industry in Sri Lanka

H2: The demand conditions have a positive effect on the export competitiveness of tea industry in Sri Lanka

H3: The related and supporting industries have a positive effect on the export competitiveness of tea industry in Sri Lanka

H4: The government has a positive effect on the export competitiveness of tea industry in Sri Lanka

H5: The brand loyalty has a positive effect on the export competitiveness of tea industry in Sri Lanka

3.8 Summary

This chapter provided the details about research design of the study. Quantitative research approach was used to identify the determinants of tea export competitiveness. Porter's diamond model with some adaptations was taken as proposed model of this study. Primary data were obtained through e-mail survey at firm level. All the constructs in the model converted into measurable terms using ordinal scale measurements and structured questionnaire was used to collect data from the sample. A list of tea exporting firms in Sri Lanka was taken from Export Development Board of Sri Lanka (EDBSL). There are one hundred and seventy seven tea export firms in Sri Lanka registered at EDBSL in 2012. To fulfill the theoretical requirement of sample selection, one hundred and seventy seven firms were considered in this study. E-mail survey compromised with the structured questionnaire was used to collect primary data from the sample. Respondents were asked to indicate the degree of advantage, range from strong disadvantage to strong advantage, of the statements in the questionnaire. In order to enhance both validation and completeness purposes two statistical analysis methods were employed. The data obtained from the firm level survey were analyzed using PLS-SEM; Smart PLS version 2.0 and SPSS (version 16) statistical packages.

The next chapter of this study reflects the analysis and findings related with determinants of tea export competitiveness in Sri Lanka. This will help in developing determinants of the framework related to competitiveness in tea.

4. Data Analysis and Findings

The objective of this chapter is to provide an analysis of Sri Lankan tea industry's competitiveness. This chapter explained the data analysis and findings of the study based on data collected from tea exporters in Sri Lanka. This chapter will help in developing determinants of the framework related to competitiveness in tea. Data analysis included pilot survey results, measurement properties of the data collection instruments, and path coefficient results. Finally, the objectives of the study compared with the results of data analysis.

The goals of this chapter are;

To provide background information on pilot survey

To summarize the adjustments made to the questionnaire based on pilot survey results

To explain the sample profile

To explain validation of measurement properties and path coefficient

To reveal the main findings of the study

4.1 Overview of Pilot Survey Results

Variables related to Porter's diamond model of factor conditions, demand conditions, firm strategy, firm's structure and rivalry, related and supporting industries, and government were considered as determinants of this study. The tea exporters were the unit of analysis and top-level managers of the tea export companies were considered as the respondents. There are one hundred and seventy seven tea exporting companies in Sri

Lanka (Export Development Board of Sri Lanka, 2012) and all the companies were selected as the sample.

To conduct a pilot survey, thirty five companies were selected and questionnaires were sent through e-mail. The number of questionnaires responded were twenty six. The pilot survey was conducted by using twenty six questionnaires. First part of the questionnaire gathered information about the organization's background. Information related to export competitiveness determinants were gathered from second part of the questionnaire. Last part of the questionnaire consisted with an open-ended question which allowed respondents to propose their identical factors that could gain competitive advantage to tea industry in Sri Lanka.

Factor analysis was performed to detect the determinants of this study using forty eight variables in the questionnaire. Factor analysis was performed by using Kaiser-Meyer-Okling (KMO) test in SPSS Version 16. Kaiser-Meyer-Okling (KMO) measure of sampling adequacy was calculated to examine the appropriateness of factor analysis. According to Malhothra (2005), KMO index which is as higher as 0.5 indicates the appropriateness of the factor analysis. The results of KMO test on pilot survey revealed that accessibility to credit and stock market was not fulfilled up to the required standard of KMO test, therefore it was removed from capital element. Similarly, the level of active work of relevant civil society agencies and relations with public authorities and institutions (other than universities) were eliminated from supporting industries. The remaining elements fulfilled reasonable factor loading requirements; therefore subsequent analyses were performed. Refer table 01 in annexure 02. After removing three variables, KMO test was conducted to examine the appropriateness of factor analysis in determinants. Refer table 02 in

annexure 2. All the determinants fulfilled the required standard and therefore internal consistency of first order factors was tested. Reliability of the variables resulting from factor analysis was measured with cronbach's alpha values. The results reported in pilot survey revealed that cronbach's alpha for all the determinants was executed the criterion standard 0.7. Refer table 03 in annexure 2. After that composite reliability of all the determinants were calculated and showed a satisfactory degree of dimensionality and reliability. Table 04 in annexure 2 illustrated the results of composite reliability. Following the composite reliability, average variance extracted (AVE) needed to be calculated. Calculation revealed that all constructs had an AVE above the critical cut-off value of 0.5. Refer table 05 in annexure 2. It confirmed the existence of convergent validity of the questionnaire. Finally, interdependency between first order constructs needed to be measured. Correlation matrix was prepared to identify the interdependency of the determinants. Table 06 in annexure 2 displayed the correlation matrix of the pilot survey. It ensured that the correlation coefficient values of all the determinants were less than AVE value. In other words the results indicated there is discriminate validity between all the constructs based on the cross loadings criterion. According to the results of pilot survey, questionnaire was revised and it comprised with forty five variables.

From the last part of pilot survey questionnaire gathered the respondents' ideas regarding the influencing factors on export competitiveness. Out of twenty six respondents, fourteen of them said that production cost is the most influencing factor to competitiveness. Some of them revealed that government support should be prominent factor when considering competitiveness. Instead of factor conditions and government support,

eleven respondents highlighted that brand image of Ceylon tea, as high quality tea, can be a reason to gain competitive advantage when comparing other tea exporting countries. One of the respondent commented that; '….all the other world famous brands like Brook Bonds, Tetley, Ahmed Tea, Orimi, Mahmood, and etc… all foreign owned and the big profits is collected abroad by these companies. Also all of these brands were originally born in Sri Lanka using the infra structure, knowledge and expertise of Sri Lanka'. Considering the respondents' ideas and previous empirical studies, this study included brand loyalty as a determinant of tea export competitiveness. The concept of brand loyalty is comparatively more important for tea industry, especially for those who provide product with little differentiation and compete in dynamic environment. Then, instead of the determinants in Porter's diamond model, new determinants would add to the desired model of the study called brand loyalty. Brand loyalty determinant consisted with two elements and two elements were measured from seven variables. The main survey questionnaire then comprised with fifty two variables measuring twenty one elements and six determinants.

The main survey was conducted using 177 tea exporting companies. Electronic mail (e-mail) survey was used to collect information from top-level managers of the tea exporting companies. Of the 177 tea exporters, 129 responded. 6 questionnaires were not completed properly therefore those 6 questionnaires were removed from statistical analysis. Finally, 123 questionnaires were taken to conduct statistical analysis of this study. The selected sample represented seventy four percent of total tea export revenue in 2012.

4.2 Data Analysis of the Study

This study developed a new model to identify the impact of diamond model variables on export competitiveness of tea industry of Sri Lanka. By conducting a statistical analysis based on partial least squares structural equation model (PLS-SEM) using Smart PLS version 2.0, the study attempted to identify the impact of factor conditions, demand conditions, related and supporting industries, government support and brand loyalty on export competitiveness of tea industry.

First part of the questionnaire gathered information about the organization's background. The characteristics of the respondents are described in terms of organization type, years of experience (tea exporting), number of employees engaged, and total tea export revenue. While considering organization type, the study sample consisted of twenty seven (22%) partnership, and ninety six (78%) private limited liability. Organizations' experience ranged from less than 5 years to more than 20 years. Thirty companies (24%) have experience more than 21 years and four (3%) companies have less than 5 years experience. There are twenty one (17%) companies which have 5 – 10 years of tea exporting experience and forty nine (40%) companies have 10-15 years of experience. The remaining nineteen (15%) companies have 16 – 20 years of experience in tea exporting. The respondents are also categorized by number of employees engaged. Twelve (9.75%) companies employed more than 150 employees. The number of employees ranged from 10 to 49 engaged with forty two (34%) companies. There are thirty nine (32%) companies which have 50 – 99 employees and thirty (24%) companies have employees range from 100 to 149. The distribution of total export revenue for the financial year 2012 as follows: less than Rs. 5 billion forty eight (39%), Rs. 5 – 10

billion forty one (33%), Rs. 11 – 15 billion twelve (9%), Rs. 16 – 20 billion five (4%) and more than Rs. 21 billion seventeen (13%). The sample profile of the study can be illustrated in table 4.1, 4.2, 4.3, and 4.4.

Table 4.1: Type of organization

	Frequency	Percentage (%)
Partnership	27	22.0
Private Ltd	96	78.0
Total	123	100.0

Table 4.2: Years of tea exporting experience

	Frequency	Percentage (%)
Less than 5 years	4	3.3
5 to 10 years	21	17.1
11 to 15 years	49	39.8
16 to 20 years	19	15.4
More than 21 years	30	24.4
Total	123	100.0

Table 4.3: Number of workers engaged in the firm

	Frequency	Percentage (%)
10 to 49	42	34.0
50 to 99	39	31.7

100 to 149	30	24.4
More than 150	12	9.75
Total	123	100.0

Table 4.4: Export revenue in 2012

	Frequency	Percentage (%)
Less than Rs. 5 Billion	48	39.0
Rs. 5 to 10 Billion	41	33.3
Rs. 11 to 15 Billion	12	9.8
Rs. 16 to 20 Billion	5	4.1
More than Rs 21 Billion	17	13.8
Total	123	100.0

4.2.1 Determinants of Export competitiveness Model Constructs

Determinants of tea export competitiveness in Sri Lanka model consisted with one dependent variable and five independent variables. It can be listed as follows;

Construct (Endogenous)

Export Competitiveness (EC) = 3 items

Drive Constructs (Exogenous)

Factor Conditions (FC) = 6 items

Demand Conditions (DC) = 3 items

Related and Supporting Industries (RS) = 3 items

Government (Govt) = 3 items

Brand Loyalty (BL) = 3 items

4.3 Validation of Measurement Properties

In total, fifty two variables are presented in this study. Fifty two variables are used to measure eighteen elements and six determinants. The exploratory factor analysis was performed to identify the composite reliability of the constructs. Values in table 4.5 indicate the outer loading results of all constructs obtained by using Smart PLS version 2.0. PLS-SEM algorithm figure (refer figure 4.1) also highlighted the factor loading of all constructs in this study.

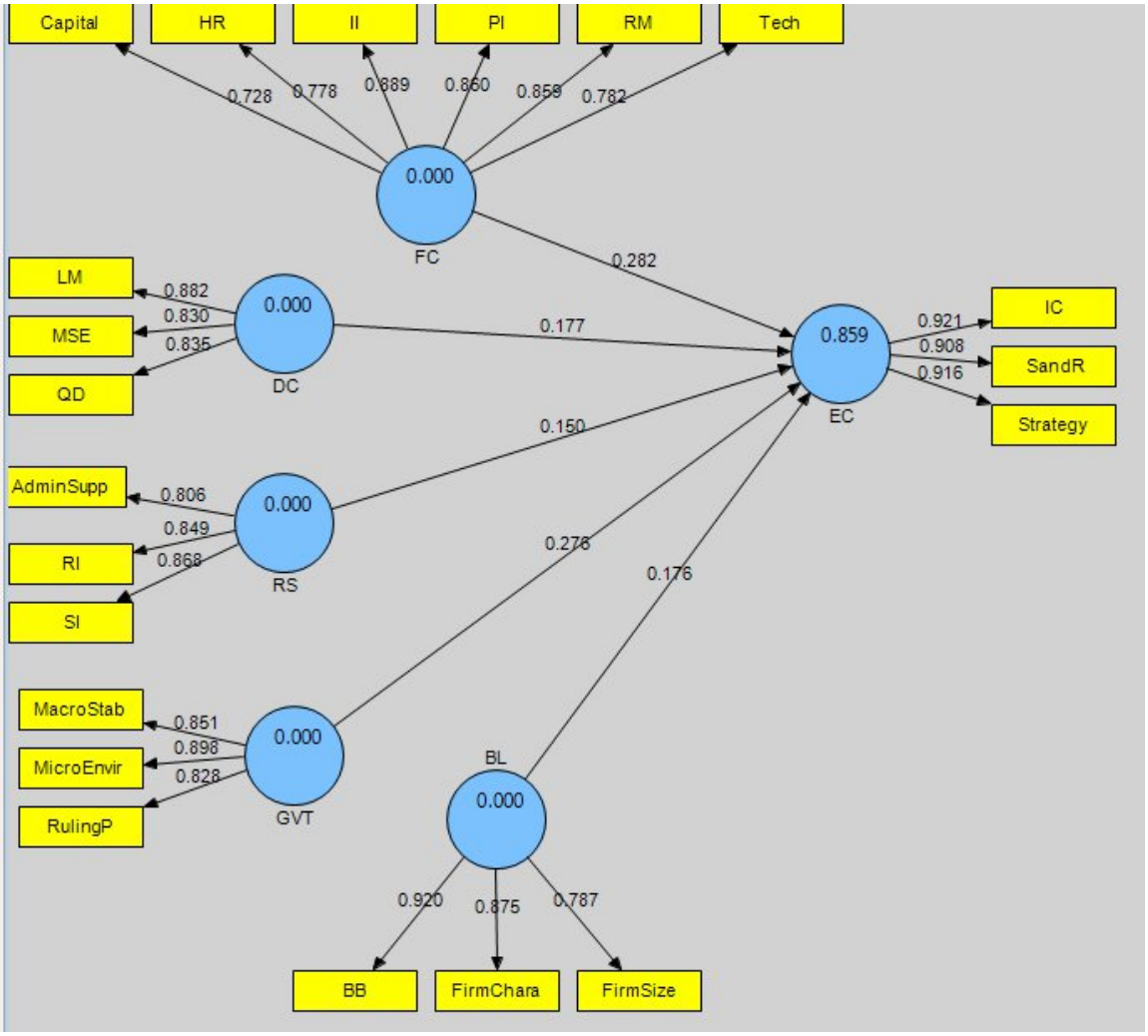
Table 4.5: Outer loading (Factor loading)

Outer loading						
	BL	**DC**	**EC**	**FC**	**GVT**	**RS**
AdminSupp						0.8063
BB	0.9198					
Capital				0.7278		
FirmChara	0.8754					
FirmSize	0.7867					
HR				0.7776		
IC			0.9212			
II				0.8889		
LM		0.8819				
MSE		0.83				

MacroStab					0.8513	
MicroEnvir					0.8976	
PI				0.86		
QD		0.8354				
RI						0.8488
RM				0.8585		
RulingP					0.8277	
SI						0.8679
SandR			0.9084			
Strategy			0.9163			
Tech				0.7818		

Where BL is brand loyalty, DC is demand conditions, EC is export competitiveness, FC is factor conditions, GVT is government support and RS is related and supporting industries.

Figure 4.1: PLS-SEM Algorithm



All outer loading of the reflective constructs (twenty one constructs) are well above the minimum threshold value of 0.7. The loadings range from a low of 0.7278 to a high of 0.8976. Then all reflective constructs have high level of internal consistency reliability, as demonstrated by the following composite reliability values (Table 4.6). The composite reliability of all the first-order constructs should be above 0.7. The results in table 4.6 indicate that composite reliability of all the constructs in this study fulfilled the required standard.

Table 4.6: Composite Reliability

	Overview					
	AVE	**Composite Reliability**	**R Square**	**Cronbachs Alpha**	**Communality**	**Redundancy**
BL	0.8438	0.8966	0.859	0.8262	0.8438	0.219
DC	0.8215	0.8859		0.8076	0.8215	
EC	0.8378	0.8394		0.8032	0.8378	
FC	0.7687	0.8234		0.8998	0.7687	
GVT	0.8385	0.8943		0.8224	0.8385	
RS	0.8079	0.879		0.7934	0.8079	

Factor analysis itself alone does not provide direct assessment of construct reliability. The internal consistency of first order factors should be tested through cronbach's alpha. The results reported in table 4.6 shows that cronbach's alpha for all constructs were executed the criterion standard (0.7). Therefore, entire value of the variables defined as an acceptable level. Given the stable factor structure of the constructs, the measures showed a satisfactory degree of dimensionality and reliability. In order to achieve convergent validity, average variance extracted (AVE) should be concerned. The AVE of all the first-order constructs should be equal or

greater than 0.5. As indicated in table 6 the AVE values of all the constructs are well above the minimum required level of 0.5, thus demonstrating convergent validity for all six constructs. R Square value in table 4.6 specifies that there is nearly 86 percent impact on tea export competitiveness through factor conditions, demand conditions, related and supporting industries, government support and brand loyalty.

Discriminate validity indicates that dimensions should not be highly correlated with each other. To examine the discriminate validity, correlation between every pair of first-order construct was analyzed. A correlation analysis was used to examine the strength of the relationship between independent variables. A correlation matrix is the standard form of reporting correlation results (Zikmund, 2010, p.555). The off-diagonal values in the correlation matrix in table 4.7 are the correlations between the latent constructs. The correlation between two variables must not exceed their respective AVE. Cross loading values in table 4.8 indicated that there is discriminate validity between all constructs in the given model. Comparing the AVE values across the columns in the matrix indicated that an indicator's loadings on its own construct are in all cases higher than all of its cross loadings with other constructs.

Table 4.7: Latent Variable Correlation

	BL	**DC**	**EC**	**FC**	**GVT**	**RS**
BL	1					
DC	0.7525	1				
EC	0.8332	0.7775	1			
FC	0.7324	0.7017	0.7053	1		
GVT	0.7566	0.716	0.7266	0.6862	1	

RS	0.7273	0.674	0.7809	0.6593	0.7171	1

Table 4.8: Cross Loading

	BL	DC	EC	FC	GVT	RS
AdminSupp	0.5566	0.5530	0.6779	0.6452	0.6289	0.7063
BB	0.7198	0.7193	0.7295	0.6768	0.7135	0.7146
Capital	0.5790	0.4378	0.5573	0.7278	0.5804	0.5379
FirmChara	0.7154	0.6610	0.7175	0.6371	0.6534	0.6200
FirmSize	0.7167	0.5547	0.6268	0.5769	0.5576	0.5330
HR	0.5885	0.4464	0.6566	0.7176	0.4177	0.4880
IC	0.7131	0.6929	0.7112	0.7108	0.7194	0.7154
II	0.5897	0.5044	0.6885	0.6289	0.6094	0.5633
LM	0.6728	0.6319	0.6237	0.5602	0.6509	0.6087
MSE	0.6240	0.6300	0.5720	0.4336	0.5633	0.5102
MacroStab	0.6268	0.6214	0.6202	0.5901	0.6513	0.5942
MicroEnvir	0.6459	0.6447	0.6519	0.5999	0.6276	0.6289
PI	0.5677	0.4881	0.6242	0.6600	0.6287	0.5280
QD	0.6192	0.6154	0.6710	0.5270	0.6036	0.5897
RI	0.6159	0.5884	0.6052	0.4557	0.5976	0.6138
RM	0.6089	0.5918	0.6005	0.6285	0.5717	0.5260
RulingP	0.6811	0.5779	0.6830	0.5793	0.6277	0.6270
SI	0.6620	0.5610	0.6809	0.5514	0.7118	0.7279
SandR	0.5471	0.6209	0.5084	0.6164	0.6118	0.6174
Strategy	0.6358	0.6888	0.6163	0.6123	0.6011	0.6787
Tech	0.5610	0.4767	0.6058	0.6318	0.5620	0.6070

Comparing the loadings across the columns in the above matrix clarifies that an indicator's loadings on its own construct are in all cases higher than all of its cross loadings with other constructs. The results indicate there is discriminate validity between all the constructs based on the cross loadings criterion.

4.3.1 Multicollinearity Analysis

Empirical assessment of formative measurement models is not the same as with reflective measurement models. This is because the indicators theoretically represent the construct's independent causes and thus do not necessarily correlate highly. As a result, internal consistency reliability measures such as cronbach alpha are not appropriate. Instead, researchers should focus on establishing content validity before empirically evaluating formatively measured constructs. This process requires ensuring that the formative indicators capture all (or at least major) facets of the construct. Then multicollinearity analysis should be performed to identify how much the variance of an estimated regression coefficient increases if the predictors are correlated. Multicollinearity is a problem that occurs with regression analysis when there is a high correlation of at least one independent variable with a combination of the other independent variables. Tolerance and variance inflation factor (VIF) are the collinearity statistics utilize to measure the impact of multicollinearity among the variables. As Denis (2011) mentioned, If VIF for one of the variables is around or greater than 5, there is multicollinearity associated with that variable. Tolerance statistic is another measurement used to identify multicollinearity. If tolerance statistic below .20, there is multicollinearity issue. Smart PLS statistical package does not have facilities to measure multicollinearity issue in the constructs. Therefore, regression analysis in

statistical package for social science (SPSS) version 16.0 was utilized to perform collinearity statistics in independent variables. Table 4.9 illustrates the collinearity statistics related with independent variables.

Table 4.9: Multicollinearity Statistics in Regression Model

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.923[a]	.853	.846	.18477

a. Predictors: (Constant), Brand Loyalty, Related and Supporting Industry, Factor Conditions, Demand Conditions, Government

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	-.387	.182		-2.128	.035		
	Factor Conditions	.281	.056	.280	5.074	.000	.589	1.697

Demand Conditions	.185	.062	.174	3.005	.003	.517	1.935
Related and Supporting Industry	.153	.059	.147	2.567	.012	.493	2.029
Government	.272	.062	.271	4.442	.000	.577	1.732
Brand Loyalty	.200	.077	.173	2.602	.010	.526	1.901

a. Dependent Variable: Export Competitiveness

Table 4.9 result is SPSS linear regression output. The dependent variable is export competitiveness and the five independent variables are factor conditions, demand conditions, related and supporting industries, government support and brand loyalty. The VIF values of all independent variables are above 1 and below the threshold VIF value of 5 and also tolerance values of all independent variables are higher than 0.2. The results of tolerance and VIF values indicate there is no multicollinearity issue in the model. Further analysis becomes possible to identify the factors affecting tea export competitiveness.

4.4 Path Coefficient

The individual path coefficients of the PLS-SEM can be interpreted just as the standardized beta coefficients in the regression model. These

coefficients represent the impact of the endogenous construct on the predictor construct. The given model of this study explains the impact of factor conditions, demand conditions, related and supporting industries, government support and brand loyalty on export competitiveness of tea industry of Sri Lanka. Table 4.10 shows the results of path coefficient the model.

Table 4.10: Path Coefficient

	BL	DC	EC	FC	GVT	RS
BL			0.1755			
DC			0.1769			
EC						
FC			0.2819			
GVT			0.2759			
RS			0.1503			

All the drive constructs in this model have positive impact on export competitiveness. Considering the relative importance of the exogenous driver constructs in predicting the dependent construct, factor conditions (FC = 0.2819) is most important followed by government support (GVT = 0.2759) and demand conditions (DC = 0.1769). Brand loyalty (BL) provides 0.1755 impacts on export competitiveness and a related and supporting industry has least impact on export competitiveness. The given model of this study does not have moderating variables. Total effect and path effect of this model is equal and there is no indirect effect on the constructs. Therefore, direct and indirect effect of the constructs was not referred in this study. Similarly, the f^2 effect size was not calculated

because the f^2 effect size is a measure of the impact of a specific moderating construct on an endogenous construct. Further f^2 effect size measures the change in the R^2 value when a specified moderating construct is omitted from the model.

To strengthen the findings of path coefficient, the results in collinearity statistics, derived by using SPSS regression model, can also be considered. Refer table 4.9. Standardized beta coefficient values in the regression model are very similar to the values of path coefficient in Smart PLS. However, the impact of factor conditions, demand conditions, related and supporting industries, government support and brand loyalty on export competitiveness is slightly superior in PLS-SME than regression model. Further, adjusted R square value in regression model summary table is 0.846 and PLS-SEM is 0.859. Comparing the results of PLS-SEM and regression model it can be concluded that PLS-SEM plays an important role in shaping factor identification of competitiveness. This study then helps to strengthen the evidences of previous empirical studies.

As next pace in the data analysis, it is required to identify the actionable strategies based on size of exogenous construct weights. Then outer weights of constructs calculated and results are displayed in table 4.11.

Table 4.11: Outer Weights

	BL	DC	EC	FC	GVT	RS
AdminSupp						0.2105
BB	0.3806					
Capital				0.1727		
FirmChara	0.3865					

FirmSize	0.3376					
HR				0.2036		
IC			0.3687			
II				0.2134		
LM		0.2324				
MSE		0.3418				
MacroStab					0.3886	
MicroEnvir					0.3757	
PI				0.2245		
QD		0.2809				
RI						0.2665
RM				0.4171		
RulingP					0.3285	
SI						0.2124
SandR			0.3766			
Strategy			0.3473			
Tech				0.2878		

By examining the outer weights of construct indicators, it is possible to identify which specific element of export competitiveness needs to be addressed. As per that raw material (RM) equals 0.4171 which is the highest out weight in factor conditions while macroeconomic stability (MacroStab = 0.3886) to the second in government support. From the brand loyalty, firm characteristics (FirmChara = 0.3865) has the highest outer weight and export market share (MSE = 0.3418) has the highest value in demand conditions.

4.5 Bootstrapping

The results of bootstrapping analysis beside the outer weight and outer loading mean, standard deviation and t-value help to ensure that formative indicators are significant or not. Therefore, figure 4.2 and table 4.12 provide the results of bootstrapping and outer weight.

Figure 4.2: Bootstrapping

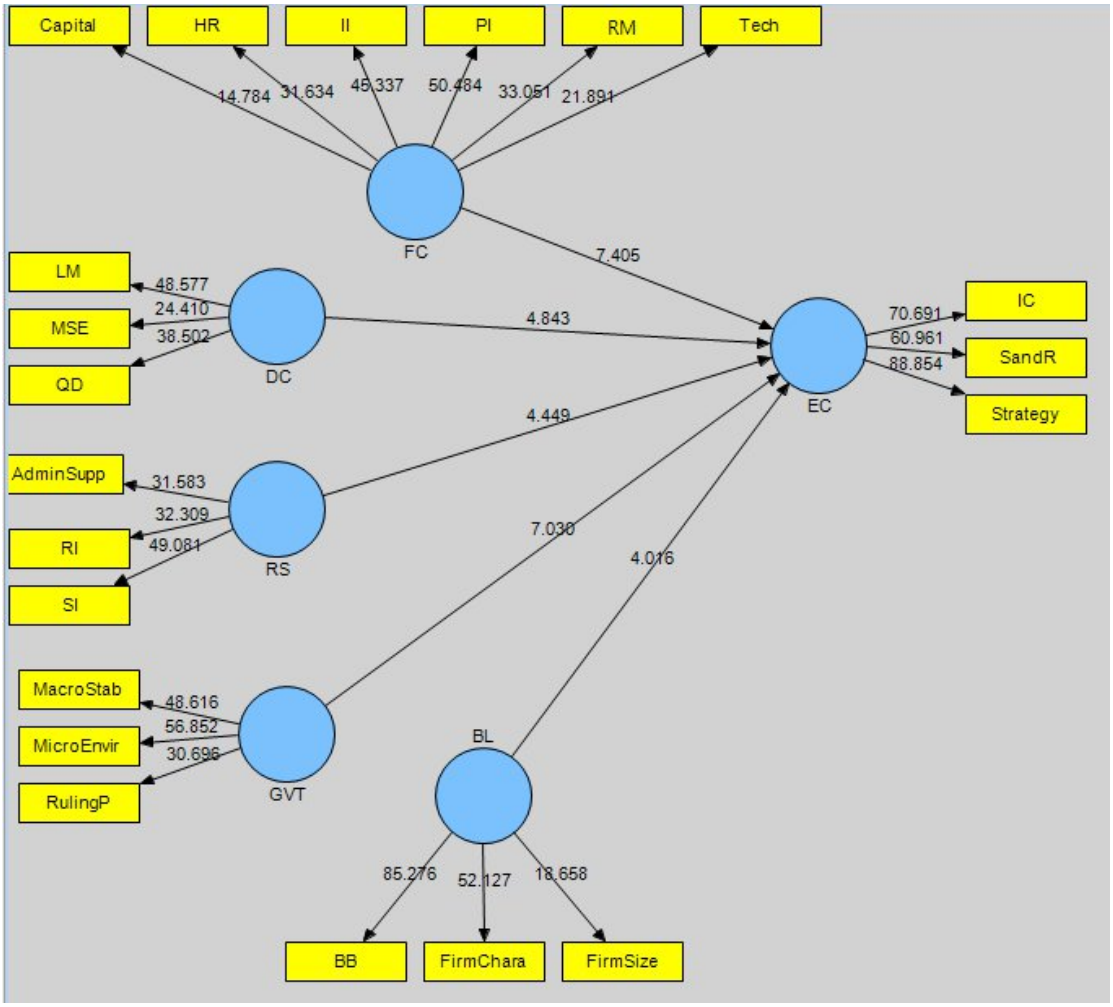


Table 4.12: Outer Weight Mean, Standard Deviation and T-Value

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)
Admin Supp<- RS	0.4105	0.4129	0.0206	0.0206	19.909
BB<- BL	0.4306	0.4328	0.0183	0.0183	23.583
Capital <- FC	0.1727	0.172	0.0086	0.0086	20.0207
FirmChar<- BL	0.3865	0.388	0.0134	0.0134	28.9012
FimSi<- BL	0.3376	0.3365	0.011	0.011	30.7717
HR<- FC	0.2036	0.2055	0.0119	0.0119	17.1061
IC<- EC	0.3687	0.3689	0.0048	0.0048	77.3366
II <- FC	0.2134	0.2142	0.0095	0.0095	22.5085
LM<- DC	0.4324	0.4339	0.0189	0.0189	22.9051
MSE <- DC	0.3418	0.3405	0.0148	0.0148	23.1208
Macro<	0.3886	0.3901	0.0136	0.0136	28.6062

- GVT					
MicroEnv<- G	0.4057	0.4065	0.0119	0.0119	34.1496
PI<- FC	0.2245	0.2264	0.0131	0.0131	17.1606
QD<- DC	0.4009	0.4036	0.0211	0.0211	18.9856
RI <- RS	0.3665	0.3652	0.0124	0.0124	29.6641
RM <- FC	0.2171	0.2179	0.0094	0.0094	22.9952
RulingP <- GVT	0.3685	0.3686	0.0101	0.0101	36.4842
SI<- RS	0.4124	0.4142	0.0169	0.0169	24.388
SandR<- EC	0.3766	0.3768	0.0061	0.0061	61.2836
Strategy <- EC	0.3473	0.3484	0.0063	0.0063	54.9697
Tech <- FC	0.1878	0.188	0.0076	0.0076	24.7479

Based on the t-statistics, t values are clearly above 2.57. Therefore, all formative indicators are significant. Outer loading mean, standard deviation and t-statistics also provide evidence that formative indicators are significant. Table 4.13 illustrates the values of outer loading mean, standard deviation and t-value.

Table 4.13: Outer Loading Mean, Standard Deviation and T-Value

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)
AdminSupp<-RS	0.8063	0.8053	0.0255	0.0255	31.5833
BB <-BL	0.9198	0.9194	0.0108	0.0108	85.276
Capital <- FC	0.7278	0.7207	0.0492	0.0492	14.7841
FirmChara<-BL	0.8754	0.8745	0.0168	0.0168	52.127
FirmSize<- BL	0.7867	0.7808	0.0422	0.0422	18.6578
HR <-FC	0.7776	0.7768	0.0246	0.0246	31.6336
IC<- EC	0.9212	0.9198	0.013	0.013	70.691
II <- FC	0.8889	0.8863	0.0196	0.0196	45.337
LM <-DC	0.8819	0.8801	0.0182	0.0182	48.5767
MSE <-DC	0.8300	0.8260	0.034	0.034	24.4104
MacroStab<-GVT	0.8513	0.8503	0.0175	0.0175	48.6165

MioEnvir<- G	0.8976	0.8963	0.0158	0.0158	56.8515
PI<- FC	0.8600	0.8591	0.017	0.017	50.4839
QD <- DC	0.8354	0.8345	0.0217	0.0217	38.5021
RI<- RS	0.8488	0.8454	0.0263	0.0263	32.3093
RM <- FC	0.8585	0.855	0.026	0.026	33.051
RulingP <- GVT	0.8277	0.8250	0.027	0.027	30.6959
SI<- RS	0.8679	0.8666	0.0177	0.0177	49.0811
SandR<- EC	0.9084	0.9069	0.0149	0.0149	60.9612
Strategy <- EC	0.9163	0.9159	0.0103	0.0103	88.8537
Tech <- FC	0.7818	0.7772	0.0357	0.0357	21.8915

After testing the significance of formative indicator, then it is required to identify the significance of path coefficients. Smart PLS version 2.0 statistical package generated the significance of path coefficient and that results are demonstrated in table 4.14.

Table 4.14: Significance of Path Coefficient

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)
BL -> EC	0.1755	0.1749	0.0437	0.0437	4.0163
DC -> EC	0.1769	0.1776	0.0365	0.0365	4.8434
FC -> EC	0.2819	0.2866	0.0381	0.0381	7.4052
G-> EC	0.2759	0.2741	0.0393	0.0393	7.0296
RS -> EC	0.1503	0.1503	0.0338	0.0338	4.4486

Path coefficients are shown in original sample column in table 4.14. In Smart PLS statistical package statistical significance can be ensured from t-statistics values. Similar to regression analysis in SPSS there is no significant value (Sig.) appeared in the output table. Then, t-statistics in the significance of the path coefficients output table have to be concerned. If t-statistics are greater than 1.96, paths are statistically significant based on a two-tailed test. T-Statistics values in table 4.14 are greater than 1.96. Then results indicate that all paths are statistically significant based on a two-tailed test. The results can be also verified through regression analysis

output. Significant values in table 4.9 coefficient output indicate that $P < 0.05$. Therefore, all the paths in the model of this study are statistically significant.

All the drive constructs in the model of this study have positive impact on export competitiveness. Factor conditions have the highest positive impact followed by government support. Demand conditions and brand loyalty build nearly 18 percent positive impacts on tea export competitiveness. According to the model, this study defined five hypotheses. While path coefficients are statistically significant, there is a clear evidence to accept all the hypotheses developed in this study. Therefore; the factor conditions, demand conditions, related and supporting industries, government support and brand loyalty have positive effect on the export competitiveness of tea industry in Sri Lanka. The details of the findings of the study are explained in the next session.

4.6 Findings of the Study

The specific research question of this study is; what are the determinants of export competitiveness as pursued by the firms in tea industry in Sri Lanka. To answering the research question the study developed its main research objective as to identify the factors which affect export competitiveness of tea industry in Sri Lanka. Based on the research objectives it defined five hypotheses. And also the study expected to suggest strategies to increase the strength of Sri Lankan tea industry's international competitiveness. According to the data analysis as explained the above, the study was able to test the defined hypotheses and to ensure whether the study achieves its main research objectives.

4.6.1 The Effect of the Factor Conditions on Tea Export Competitiveness

The first hypothesis involves the effect of factor conditions on tea export competitiveness, H1: the factor conditions have a positive effect on the export competitiveness of tea industry in Sri Lanka. This hypothesis was tested by using significance of path coefficient output and regression analysis output.

Table 4.15: The effect of the factor conditions on tea export competitiveness

Variables	Path coefficient	t-value	P-value (Sig.)
Export competitiveness Factor conditions	0.2819 Standard deviation = 0.0381	7.4052	0.000

The results shows that P value is less than 0.05 and t-statistics is higher than 1.96. Path coefficient reveals that factor conditions can make an approximately twenty eight percent impact on tea export competitiveness. Then there is a significant and positive effect of factor conditions towards tea export competitiveness in Sri Lanka. Hypothesis 1 can be accepted. Among the determinants factor conditions provide the highest effect on tea export competitiveness.

4.6.2 The Effect of the Demand Conditions on Tea Export Competitiveness

Hypothesis 2 demonstrates the effect of demand conditions on tea export competitiveness, H2: the demand conditions have a positive effect on the export competitiveness of tea industry in Sri Lanka.

Table 4.16: The effect of the demand conditions on tea export competitiveness

Variables	Path coefficient	t-value	P-value (Sig.)
Export competitiveness Demand conditions	0.1776 Standard deviation = 0.0365	4.8434	0.003

As shown in table 4.16, the path coefficient of the demand conditions is positive and has a statistically significant effect on tea export competitiveness. T-value is higher than 1.96 and p-value is less than 0.05 at a two-tailed test. There is nearly eighteen percent impact on tea export competitiveness from the demand conditions. Then, it can be clearly stated that demand conditions have a positive effect on tea export competitiveness. Therefore, hypothesis 2 is accepted.

4.6.3 The Effect of the Related and Supporting Industries on Tea Export Competitiveness

Hypothesis 3 tests the effect of related and supporting industries on export competitiveness of tea industry. H3: the related and supporting industries

have a positive effect on the export competitiveness of tea industry in Sri Lanka.

Table 4.17: The effect of the related and supporting industries on tea export competitiveness

Variables	Path coefficient	t-value	P-value (Sig.)
Export competitiveness Related and supporting industries	0.1503 Standard deviation = 0.0338	4.4486	0.012

The results in table 4.17 show that the related and supporting industries have fifteen percent impact on tea export competitiveness in Sri Lanka. As the results indicate, p-value is less than 0.05 and t-statistics is superior than 1.96. Path coefficient is equal to fifteen percent and related and supporting industries can make fifteen percent impact to tea export competitiveness. There is a clear evidence to reject null hypothesis and accept hypothesis 3. The related and supporting industries have a positive effect on the export competitiveness of tea industry in Sri Lanka. Considering the other determinants, related and supporting industry has the lowest effect on tea export competitiveness in Sri Lanka.

4.6.4 The Effect of the Government Support on Tea Export Competitiveness

The forth hypothesis involves the effect of government support on tea export competitiveness, H4: the government has a positive effect on the export competitiveness of tea industry in Sri Lanka. Path coefficient,

standard deviation, t-statistics, and p-value related to hypothesis 5 are presented in the table below.

Table 4.18: The effect of the government support on the tea export competitiveness

Variables	Path coefficient	t-value	P-value (Sig.)
Export competitiveness Government support	0.2741 Standard deviation = 0.0393	7.0296	0.000

As shown in table 4.18, the government support has a statistically significant effect on export competitiveness of tea industry in Sri Lanka. The government has a path coefficient of twenty seven percent with a relatively higher t-value higher than 1.96. Hence, the government has a positive effect on the export competitiveness of tea industry in Sri Lanka. Hypothesis 4 is accepted. Followed by factor conditions, government support makes the second largest effect on export competitiveness in tea industry.

4.6.5 The Effect of the Brand Loyalty on Tea Export Competitiveness

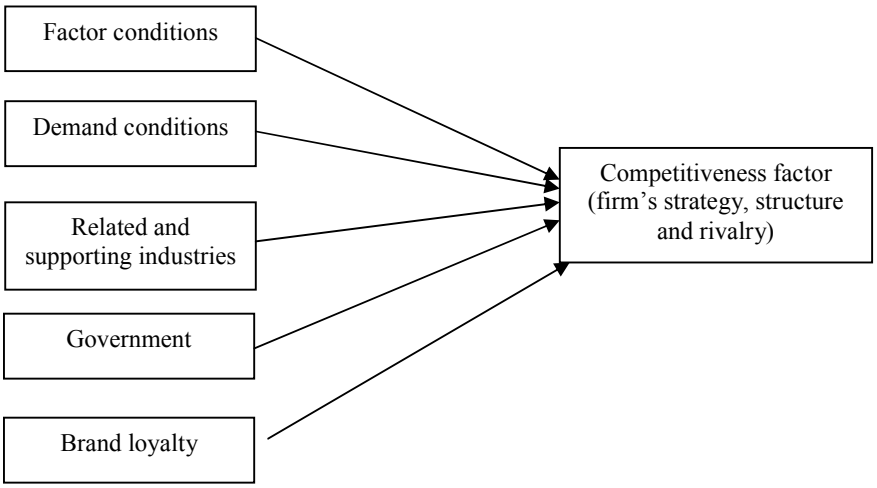
According to the result of respondents' ideas in pilot survey and reviews of empirical studies, instead of the determinants in Porter's diamond model, brand loyalty was included into the model of this study. Then hypothesis 5 demonstrates the effect of brand loyalty on tea export competitiveness in Sri Lanka, H5: the brand loyalty has a positive effect on the export competitiveness of tea industry in Sri Lanka.

Table 4.19: The effect of the brand loyalty on the tea export competitiveness

Variables	Path coefficient	t-value	P-value (Sig.)
Export competitiveness Brand loyalty	0.1749 Standard deviation = 0.0437	4.0163	0.010

The results in table 4.19 show that p-value is less than 0.05 and t-statistics is higher than 1.96. Path coefficient reveals that brand loyalty on Ceylon tea can make an approximately seventeen percent impact on tea export competitiveness. Then there is a significant and positive effect of brand loyalty towards tea export competitiveness in Sri Lanka. Hypothesis 5 can be accepted. All the hypotheses defined in the study were accepted. In other word, all the determinants tested in the model; demand conditions, factor conditions, related and supporting industries, government support and brand loyalty have statistically significant impact on tea export competitiveness in Sri Lanka. Finally, eighty six percent effect of tea export competitiveness could be explained through the demand conditions, factor conditions, related and supporting industries, government support and brand loyalty. The proposed model of tea export competitiveness can be illustrated as follows (Figure 4.3).

Figure 4.3: Proposed Model of the Study



Source: Compiled by the author based on empirical evidence

In addition to identifying the determinants of tea export competitiveness in Sri Lanka, the study aims to suggest strategies to increase the strength of tea industry's international competitiveness. Then it is required to identify the elements which make highest influence to the desired determinants.

The outer weights results of construct indicators in table 4.11 make possibilities to identify which specific elements beneath the determinants of tea export competitiveness have highest impact. Factor conditions consisted with six elements namely; raw materials (RM), human resources (HR), capital, physical infrastructure (PI), information infrastructure (II) and technology (Tech). Among those six factors, raw material element has the highest outer weight value (0.4171). It indicates that availability, quality and cost of raw materials can make significant influence on factor condition as well as tea export competitiveness. Followed by raw materials, technology has second highest value (0.2878). Tea planting and tea production process align with technological improvement may create sustainable competitive advantage to tea industry. Physical infrastructure

facilities such as; road, port, energy, telecommunication, and storage, also provide significant influence to factor conditions. Physical infrastructure scored third highest outer weight value (0.2245) under factor condition determinants. Information is now becoming the most influencing power source in competitive global market. Person with more relevant information can obtain a competitive position than with having any other resources. Then information infrastructure becomes the influencing factor to export competitiveness. According to the results in table 4.11, outer weight value of information infrastructure (0.2136) indicates the significant influence on factor condition. Among six factors under factor condition, human resource and capital have the significant influence on factor conditions but both factors impacts are not much as highest as other four factors. There is no enough evidence to directly say that information infrastructure and capital are not as much as important like other four elements. However, outer weight results under factor condition indicate that raw material, technology, human resource and physical infrastructure have highest loading values. Government support is the second influencing factor to tea export competitiveness. It compromised with three elements; macroeconomic stability (MacroStab), ruling party behaviour (RulingP) and microeconomic environment (MicroEnvir). Macroeconomic stability is the highest influencing factor in determinants of government (0.3886). Therefore, foreign exchange rate stability and tariff structure of the country play significant role in government determinant. As per that microeconomic environment equals 0.3757 is the second highest impact on government. Then, government support on export expansion and technological improvement and providing incentives assist to gain competitive advantage to tea industry. Ruling party philosophy and import-export policy also make impact to export competitiveness. Followed factor

condition and government support, demand condition becomes the third highest influencing factor on tea export competitiveness in Sri Lanka. Demand condition contained three elements; local market (LM), quality of demand (QD) and export market share (MSE). Among three elements export market share (0.3418) is the most influencing factor on demand condition. Adding component to Porter's diamond model, brand loyalty, shows significant impact on tea export competitiveness. Buyer behaviour (BB), firm characteristics (FirmChar) and firm size are the elements in brand loyalty. Out of three elements, firm characteristics make highest influence on brand loyalty (0.3865). So, firm experience on export activities and quality certificate obtained by the firm play most important role to build brand image on exported tea. Related and supporting industry is the least influencing factor on tea export competitiveness in Sri Lanka. It includes three elements namely; related industries (RI), supporting industries (SI) and administrative support (AdminSupp). Related industry is the key element which has the highest outer weight value of 0.2665.

Identifying the elements which make highest influence to the export competitiveness determinants help to develop strategies to gain competitive advantage to tea industry. Considering the above mentioned factors it could be clearly identified that there are considerable elements take important part in determining of tea export competitiveness. Out of eighteen elements of the study (excluding three elements of export competitiveness) raw materials, technology, physical infrastructure, information infrastructure, macroeconomic stability, export market share, firm characteristics, and related industries influence much on tea export determinants. Those elements need to be prioritized when developing

strategies to attain sustainable competitive position for Sri Lankan tea in global tea market.

4.7 Summary

The main purpose of this chapter is to reveal the results of data analysis performed through Smart PLS statistical package and findings of the study. Initially this chapter discussed the pilot survey results and adjustments made in main analysis. Following the sample profile explanation, this chapter clarified the validation of measurement properties. Under the validity and reliability test; outer loading, composite reliability, conbrachs alpha, average variance extracted, latent variable correlation and cross loading were measured. The results of validity and reliability measurements specified that the all constructs satisfied the required standards. To ensure the multicollinearity issue, tolerance and variance inflation factor (VIF) were utilized using SPSS version 16.0. Finally, significance of path analysis was measured and identified that all the drive constructs in the model of this study have statistically significant and positive impact on export competitiveness of tea industry. Among the drive constructs, factor conditions and government support have the highest impact on tea export competitiveness. Related and supporting industries make least effect on tea export competitiveness. While identifying important elements in each determinant, results of outer weight indicated that raw material, technology, physical infrastructure, information infrastructure, related industries, and firm characteristics have significant impact. Giving priority to those elements strategies should be developed to enhance competitiveness of Sri Lankan tea export. This chapter

investigates five determinants that are drawn from international competitiveness. In the process, it has provided the conceptual framework of export competitiveness in tea industry in Sri Lanka.

The next chapter of this study reflects the assessment of findings of the previous empirical studies. This will help to identify how those findings are compatible with the findings of this study.

5. Discussion

This chapter presents the theoretical conclusions of the study and offers some thoughts on future development and application of the determinants of tea export competitiveness. It also encapsulates the factors influencing tea export competitiveness and recognizes their important roles in determining competitiveness.

The goals of this chapter are;

To identify the distinct contribution this study makes to the body of knowledge

To understand the role of the determinants of tea export competitiveness

To suggest further research directions on export competitiveness

5.1 Overview of the Findings of the Study

The study on export competitiveness constitutes a wide body of conceptual and empirical works. However, the concept of competitiveness has untouched possibilities to discuss due to several reasons. The reasons are; there is no unique mechanism to identify the determinants and measure competitiveness and there are no clear definitions and operationalization of determinants of export competitiveness. Due to the limitations of identifying and measuring determinants of export competitiveness, an industry or a country uses different ways to gain competitive advantage for its products or services. With a glance on the diamond model based studies, it is observed that there are number of studies on different sectors. The literature revealed that factors of diamond model have not been measured by a generally accepted scale.

This study integrates perspectives from export competitiveness, the resource based view of the firm, local and foreign demand conditions of the firm, association with related and supporting industries, government sources and brand loyalty of the customers to propose a suitable model to identify the factors influencing to gain competitive advantage in tea industry of Sri Lanka. The study of determinants of tea export competitiveness is based on Porter's diamond model which has primarily focused on individual firm level. Supported by the empirical evidences this study found out that factor conditions have the most significant influence of export competitiveness of tea industry and the second important is government support. Followed by government support, demand condition and brand loyalty have also made positive impact on export competitiveness of tea industry in Sri Lanka. Among five factors, related and supporting industries have least impact on tea export competitiveness. It should be noted that findings of this study is based on data collected from tea exporting firms in Sri Lanka. Then it is not highlighted that those findings could not be applicable to tea manufacturers in Sri Lanka.

5.2 Assessment of Literature Review and Findings of the Study

Porter's diamond model is a framework that defines the rules of competition in an industry and highlights what is important in order to have long-term competitive advantage (Sun *et al.,* 2010, p.241). It is widely used to establish a conceptual framework in competitiveness analysis of industries and nations. A review of literature; Watchravesringkan *et al.*, (2010), Jin and Moon (2006), Bakan and Dogan (2012), Prasad (2000), Prasad (2004), Dunning (1993), Sun *et al.,* (2010),

Ariyawardana (2001), reveals that diamond model plays an important role in shaping the competitive performance of industries. Thus, the diamond model applied to set up a conceptual structure in an analysis of the industries based on empirical research. This session discussed the findings of previous empirical studies and how those findings are compatible with the findings of this study.

The study of Shafaei (2009) is one of the studies used as the foundation of this study. Based on the findings, Shafaei revealed that among the five determinants, factor conditions contributed the most to the performance while demand conditions contributed the least to the performance of the firms. As researcher mentioned factor condition is the most important factor because; raw materials are supplied locally with acceptable price and quality. Other important element of factor condition is the human resource component. The main findings of Shafaei (2009) are very similar to the main outcome of this study because factor conditions have the most significant influence of export competitiveness of tea industry in Sri Lanka. Under the factor conditions, price, quality and availability of raw material become the highest influencing elements. According to Sri Lanka Tea board statistics, 221,969 hectares were used for tea plantation in 2012. Human resources element also make significant influence on factor conditions, however its impact was not much as highest as Shafaei's findings. According to Shafaei's view point, one of the limitations of human resource is the limited access to skills development and on the job training. Considering that view point, if employees in tea exporting firms as well as tea manufacturing firms have more access to skill development and on the job training, then it will create more competitive workforce to the firms. Competitive workforce can be a major source to gain

competitive advantage to the firm. Therefore, it is very important to provide an appropriate training and government has an important role to play in encouraging and promoting technical training courses. Other than factor conditions, the results of Shafaei's study showed that the managers focus more on tactical issues than the strategic aspects of the firm. The study indicates that the competitive performance of the firms in tea industry is not encouraging. Therefore, it is necessary to identify the shortcomings and focus on improving the overall competitive performance of the firm.

Confirming the same findings of Shafaei (2009), Esterhuizen and Rooyen (2006) identified that factor condition is the most important determinant in South African agro-food industry. The factor conditions are constraining competitiveness, most are the overall cost of production, cost of unskilled labour, quality and availability of skilled labour, cost of infrastructure and cost of technology. In spite of factor condition, related and supporting industries have positive impact on export competitiveness. Role of the government has a neutral effect on the competitiveness of agricultural export firms in South Africa. In contrast to the findings of Esterhuizen and Rooyen (2006), the study revealed that government is the second highest influencing factor on tea export competitiveness of Sri Lanka. Different conclusion may occur due to political, cultural differences in both countries. Industrial persons in Sri Lanka expect more from government side rather than doing things by their own. This can be proved from the comments received from the responders of this study. Some responders argued that Sri Lanka should expand its tea export destinations, rather than Middle East countries, to large growing markets like China, Japan, Germany and North African countries. By doing so government

intervention is an essential factor. Not only expansion of export destination, industrial people also expect government support to technological improvements and employees' skill development. In addition to that some responders pointed out the government should have direct responsibility to control the cost of electricity and labour which had increased more than 30 percent during the past two years. The government may not have all the possibilities to control the cost of labour and electricity in tea industry. And also government may not be in a position to provide incentives to minimize the burden of production cost of tea industry. Then tea manufacturing firms, similarly tea factories, need to counter the rising cost of production through higher labour and machinery productivity. Increasing productivity is not the task of the government. Therefore expecting everything from the government is not a practical phenomenon. That may be the reason why the results of Esterhuizen and Rooyen (2006) revealed that role of the government has a neutral effect on the competitiveness. Anyhow it is to be noted that competitiveness along with improved productivity alone is insufficient. A business friendly environment for attracting foreign direct investments to create capacity for tea production also has to be created.

Supported from empirical evidences, Esterhuizen and Rooyen also identified ten major influencing factors that impact on the competitiveness of agricultural export firms in South Africa. Major elements included; intense competition in the local market, devaluation of domestic currency, availability of local suppliers of primary inputs, availability of unskilled labour, telecommunication facilities, cost of capital, labour policy, cost of technology, firm's experience and tax system of the country.

The study on competitive position of Thailand's apparel industry (Watchravesringkan *at al.,* 2010) revealed that factor conditions, related to country's natural and human resources, are necessary to enhance the competitive advantage in the apparel industry. In addition to that, infrastructure facilities such as transportation, technology and telecommunication are important to determine export competitiveness. High levels of consumer sophistication and demand for product diversification have significant impact on demand condition. Then demand condition is one of the important determinant of export competitiveness in apparel industry.

Making argument on the findings of Esterhuizen and Rooyen (2006), the study of Watchravesringkan *at al.,* (2010) revealed that Thailand government plays an important role in assisting the apparel industry to sustain its competitiveness. Despite the rising production costs, Thai apparel industry can remain globally competitive with continued support from the government. Watchravesringkan's conclusion is very similar to the findings of this study. As described above, industrial people in Sri Lanka look forward to take support from the government. That is the main reason why the government support has the highest impact on tea export competitiveness in Sri Lanka. In addition to factor condition and government, the assistance from related and supporting industries creates synergy effects on competitive performance in Thailand's apparel industry. Cooperate with other industries to develop and implement innovations and relations with research and development related institutions become source of competitive advantage for Thailand's apparel industry. Though Watchravesringkan *at al.,* (2010) emphasized that the assistance from related and supporting industries creates synergy effects on

competitiveness in apparel industry, the empirical evidences of this study stated the related and supporting industries have least impact on tea export competitiveness. Least impact does not indicate that related and supporting industries do not have impact on export competitiveness. When comparing other four determinants related and supporting industries determinant has low path coefficient value. Impact may be counted as low because tea industrial people still not identify the importance of research and development, innovations and relations with research and development institutions. It is true that the tea industry is highly labour intensive industry. Averagely, 33 percent of the field cost is in the operation of plucking. To reduce the plucking cost, Kenya has adopted mechanical plucking system and it would help them to reduce the field cost of production (Gammampila, 2013). It was the result of research and development. Sri Lankan tea industry still depends on unskilled labours to pluck tea leaves, while it is facing an issue of labour shortage. Energy cost is also a vital factor considering the cost of production. To overcome those main barriers, high labour cost and high energy cost, Sri Lanka needs to look at the opportunities of automated plucking system and energy management system. To do so firms engage in tea industry needs to allocate sufficient funds on research and development and to establish relationships with universities and other research and development institutions. As Sabonience (2009, p.55) mentioned changing the steady industrial structure by increasing the shares of high technological industries is not simple. Big investments into scientific research, education and technologies are necessary for this purpose. India is one of the fastest growing economies of the world in recent years. Pillania (2008) attempted to study the competitiveness of India at both macro and micro aspects. The study identified that government level factors and firm level factors make

an impact on competitiveness of India. It also emphasized that innovation is the key to achieve the competitive advantage in the international market. According to the conventional models of international trade theory, resource accumulation, product-process innovation and intensity of entrepreneurial activity determine a country's international competitiveness (Daniel, 2000, p.424). In addition to that, government policies should apply to; enhance saving and investment in physical and human capital, encourage risk taking, promote research and development and advance free markets internationally.

Satharasinghe (1998) identified the factors determining competitiveness of an industry as; internal and external factors. Internal factors include leadership capability, ability to reduce cost of production, degree of differentiation, and segment to which the industry caters its products. External factors include micro and macro level policies of a country. Land policy, labour policy, infrastructure, and incentive for export orientations were considered as micro level policies; whereas, macro level policies consist with fiscal and monetary policy, trade, wage and industrial policy.

Collaborating the same findings of Watchravesringkan *at al.,* (2010), Sun *et al.,* (2010) built a conceptual model based on Porter's diamond model to provide much more comprehensive understanding of the interactions between competitiveness factors of real estate industry of Beijing and Tianjin. Findings of this study revealed that related and supporting industries have the most significant influence on competitiveness of real estate industry. Demand factor became the second influencing factor to competitiveness. Productivity factor (factor conditions) was the least influencing factor on real estate industry competitiveness. Some part of the results of Sun *et al.,* (2010) were totally differed from the findings of

Shafaei (2009), Esterhuizen and Rooyen (2006), and Watchravesringkan *at al.,* 2010). The differences in results could be occurred due to different analyses used to identify the factors affecting competitiveness. According to Bakan and Dogan (2012), conditions of demand affect the food, textile, metal kitchen equipment, and jewellery sectors' competitiveness more than any other factors in the diamond model. The secondary effective condition is the governmental role. The last effective condition is factor condition. As Bakan and Dogan (2012) mentioned, competitive advantage is gained with the inimitable qualities of the firm, hence, the factor conditions of the firm are easily imitable by rival firms. According to Ariyawardana (2001, p.62), it can be argued that the main reason for the Sri Lankan tea industry's declining competitiveness is due to high relying on its basic factor comparative advantage and price-based competition. As pointed out earlier factor comparative advantage provides no substance for competitiveness. Then it is obvious that factors affecting on export competitiveness could be differed from industry to industry.

Hoefter (2001) analyzed the competitiveness on aluminum, cocoa, food, timber and furniture, and textile and garment industries in Ghana. Findings of the study revealed that main factor driving the competitiveness of Ghana's industries is natural resources. Having good supplier network (backward integration), building own infrastructures, working with foreign management and training labour forces are other factors which have been able to build up a competitive advantage in the industry. Olmeda and Varela (2012) identified thirty two determinants that affect the international competitiveness in the pharmaceutical industry in India. Results of the study suggested that pharmaceutical firms take into account a country's factor conditions above any other competitiveness variables.

Strengthening the results of Esterhuizen and Rooyen (2006), Olmeda and Varela stated factors related to government role such as; property rights, government regulation, inflation, trade barriers, and technology transfer do not affect the international competitiveness in pharmaceutical industry in India. As researchers highlighted, to improve international competitiveness of particular industry, it should strengthen markets' competence in an integrated environment.

Sabonience (2009) analyzed export pattern, specialization and export competitiveness of Lithuanian exports. In his study, it shows that, Lithuanian export largely depends on traditional commodities, such as; animal products, wood and wood articles, textile articles and so on. In those commodities' RCA have positive value, but it gets declined. This study made several suggestions to enhance export competitiveness such as; creating favorable business conditions, creating high value-added activities, fostering innovation, supporting competitive conditions, and promoting high value-added exports.

The fact is that Sri Lanka is no longer the world's largest tea exporter. Tea industry faces many difficulties including high production cost, low productivity and labour shortage. Reducing the cost of production and increasing productivity alone will not ensure the survival of tea industry in Sri Lanka in global competitive market. Tea is a popular beverage and due to its extensive consumption worldwide consumer considers about the brand and quality of the tea. Consumers value their relationship with their branded custody and with marketing institutions that own and manage the brand. These consumers are the bread and butter of any firm, and the base upon which a firm can grow. The brand identity needs to be focused on differentiation that offers sustainable competitive advantage to the firm.

Brand identity is based on a thorough understanding of the firm's customers, competitors, and business environment. The strong brands enjoy customers' brand loyalty, the potential to charge high price. Therefore, firms need to have strong understanding of customer behaviour, product attributes and competitors. One of the respondent of the study commented how important to build brand loyalty to Sri Lankan tea. As the respondent mentioned, "…. the foremost problem of the tea industry should change their approach to business. Tea is no longer a commodity and therefore the industry should make radical changes to the procedures and regulatory framework which does not allow us to move into branding and marketing. The only feasible business according to prevailing regulatory framework is to create strong brand loyal customers and supplying bulk to big brands…". Another respondent also highlighted that, "Sri Lanka (Ceylon Tea) is the best quality in the world and is highly sought after by discerning consumers the world over. Sadly we sell (export) a high percentage of our tea in bulk at very low price to foreign companies who do all the value addition and branding abroad". In this study, it attempted to verify whether brand loyalty can make impact on export competitiveness. A review of literature based on brand loyalty and competitiveness disclosed that brand loyalty consisted with three elements namely; buyer behaviour, firm characteristics and firm size. The results of empirical evidence emphasized that brand loyalty has a positive significant impact on tea export competitiveness in Sri Lanka. Then it is required to find out whether these findings suite with the results of previous researches.

Bezic, Vojvodic and Stojcic (2010) revealed that firm's size has significant impact on export success of the firms. However, the researchers

emphasized that business experience such as the established networks and the knowledge of export markets are less important determinants of export competitiveness for firms. As far as factors concerned, technology transfer, use of the internet and processing quality certificates have significant impact on export competitiveness. Competition and customers and trade regulations also seem to be the most important obstacles for export competitiveness. The study of Nawaz and Usman (2012) attempted to provide a broader view of brand loyalty by proposing a model to test the relationship among service quality, satisfaction, trust and commitment towards brand loyalty. Outcomes of the results of this study revealed that satisfaction is positively associated with brand loyalty. The result has been confirmed that satisfaction and trust are conceptually connected. Then trust and brand loyalty are conceptually connected and have positive significant relationship. The aim of the study of Ghodeswar (2008) was to identify the important elements of brand building based on case studies of successful brands in India. The study revealed that brand building effort has to be aligned with firm's processes that help deliver the promises to customers through all departments of the firm, intermediaries, and suppliers. The results of Bezic, Vojvodic and stojcic (2010) confirmed that use of internet and possessing quality certificates have significant impact on export competitiveness. In addition to that, the study of Ghosh and Ghosh (2013) focused to identify the factors influencing the behaviour of tea consumers of Pune city in India. It tested the behavioural pattern of tea consumers considering the trait in mind like popularity of a brand, consumer satisfaction, brand loyalty, colour and price. The study evidently described the fact that brand loyalty is the dominating attribute that governs the decision making of the consumer while selecting particular tea brand. All of the study mentioned above provided enough evidence to identify the

brand loyalty as influencing factor to export competitiveness. According to the findings of this study also proved that brand loyalty can make an impact to build competitive position of Sri Lankan tea in global arena.

The study attempted to provide insights into the competitive national advantage of Sri Lankan tea industry. Based on the findings, the outlook is positive for the continued success of Sri Lanka's tea industry in global arena. Given its current position, Sri Lanka has significant room to improve its competitiveness in tea industry through improving raw materials standard, applying technological innovation to production process, creating strong competition in the local market, stabilizing foreign exchange rate, and acquiring government support to build investment friendly environment, developing infrastructure facilities and export expansions. The findings of this study clearly emphasized that Sri Lanka's government has to play key role in providing an environment that would have allowed the development of competitiveness of tea industry. In addition to that the industry should be moved from short-term opportunities to long-term strategies. It should build up long-term competitive positions through quality and brand reputation. By analyzing the results and comments of respondents suggestions are given to improve the competitiveness of tea industry in Sri Lanka.

5.3 Managerial Implications

The study stated that out of all five determinants the most dominating determinant that governs the tea export competitiveness is the factor condition followed by government support, demand condition, brand loyalty and lastly the related and supporting industries. According to the

results of this study, and the actual developing situation of Sri Lanka, the following suggestions are made to enhance the competitive position of tea industry in Sri Lanka. It needs to be emphasized that some of the suggestions were made by respondents of the study. Those suggestions will help to improve identified factors and ultimately they will assist to enhance competitive position of Sri Lankan tea export.

Factor condition is the highest influencing factor on tea export competitiveness in Sri Lanka. The high cost of production becomes the enormous burden to tea industry. Labour shortage and low land productivity are the main factors affecting to have high production cost. Low social recognition becomes the main factor for labour shortage in tea industry. Young generation, especially men, tend to seeking employment outside the industry. And also social recognition for plantation workers builds negative impact on tea industry's labour productivity. In Sri Lanka majority of tea estates are over hundred years old. The standard rate of replanting is 2 to 3 percent. However, Sri Lanka's replanting rate is around 0.5 percent. The required investment for replanting is considerably high. Due to those reasons production cost of tea is high and then it is very difficult to compete with the prices of several other tea producing countries. Improving the productivity is the first priority to be addressed. To overcome the issue of labour shortage, social recognition of plantation workers need to be promoted. Making the facilities available to access to skill development will also be able to attract young generation to tea industry. To overcome the issues in replanting, tea plantation firms, research institutions, and government should joint their hands together. Tea plantation firms should increase soil fertility level by rehabilitating soils using compost. Research institutions should develop fast growing tea

plants that could have a longer sustainable life span. New varieties of high yielding tea plants should be introduced to obtain competitive position in export market. In here assistance from related and supporting industries plays a key role. As an incentive provider, the government should provide subsidies for the cost of replanting and grant tax relief for replanting period. Strengthen the tea research institute by allocating required funds may also become a responsibility of the government.

Another important determinant of tea export competitiveness is demand condition. Creating the strong competition in the local market is a vital strategy to enhance competitive position in the global market. But when considering local consumption of tea it is less than ten percent of total tea production. That amount is not sufficient to build a competitive local market for tea. As a country which attracts one million tourists in 2013 and expects to have more than two million tourists in 2016, it is clearly noticeable that Sri Lanka should provide more places to promote Ceylon tea through tourists. The authorized parties like; Sri Lanka Tea Board, Export Development Board, Tea Exporters Association, should have responsibilities to promote a tea culture among Sri Lankans as well as among tourists visiting the country. The promotional campaigns must highlight the new trends in tea consumption such as; green teas, ice teas, cocktails and mocktails. Sri Lanka needs to promote tea industry both as a tea producer and as a tea exporter.

Sri Lanka should expand its tea export destinations to large growing markets like; China, Japan, Germany, Singapore, Malaysia. When expanding the market international relations cause considerable impact. International relations directly and indirectly impact on the domestic economy. Sri Lanka has pursued bilateral and multilateral trade

agreements like SAFTA, GSP, BIMSTEC…etc to enhance its trade performance. Trade statistics revealed by the Department of Commerce (2013), bilateral trade agreement between Belarus and Sri Lanka in 2012, totaled US dollar 42.6 million. Sri Lanka's export to Belarus amounted to US dollar 9.1 million (21 percent) and around US dollar 7.5 million (83 percent) was contributed by tea exports. (Remains consisted with gloves, tires, and raw tobacco). It is clearly visible that there is a high probability to expand tea export market to countries like Belarus. Tea exporters need to identify new export destinations like Belarus and government should make necessary arrangements to pursue trade agreements with them.

Consumers' trust towards the product and the firm helps to build brand loyal customers. To assure the customers of the best quality in keeping with international standards, tea manufacturing and tea exporting firms need to obtain international quality certificates such as; ISO 9001-2008 and HACCP food safety management system certification, JAS, GMP, KOSHER, NASAA and USDA Organic. It is also recommended to apply modern manufacturing practices such as Kaizan, 5S and JIT to tea processing centres.

Currently more than 48 % of the tea is exported in bulk form in favor of multinationals, who are engaged in bulking, blending and packaging operations abroad. This provides an opportunity for them to build their own brand and create brand loyal customers. Then they determine the global prices making the country a mere price taker. Sri Lanka's present value added product range includes Green tea, flavored tea, organic tea, instant tea and ready to drink tea (RTD) in packets bags or other forms. Due to the improvements of research and developments, there are varies range of latest products introduced to value added product range of tea

namely; tea based soap, bath gel, shampoo and cosmetic products. Another practical example for value added product range is T-bar. T-bar is an attractive retailing system which gives an opportunity to experience tea based cocktails, mocktails, t-shots and t-shakes for teaholics. Dilmah Tea (Pvt) Ltd has opened its t-bar in India on January, 2013. Introducing the latest product range to tea export list will offer competitive advantage.

Further, the macroeconomic control functions should be strengthened and guiding function of government needs to be emphasized. In other words foreign exchange rate stability, tariff structure of the country, import-export policies and procedures of the country, and support given to expand the export destinations need to be strengthened to gain competitive advantage of tea exporting. On the other hand the government's support on promoting tea as brand rather than exporting tea in bulk is needed to be considered.

5.4 Further Research Insight

The gaps appeared in the literature always help to generate a new research idea. The finding related with literature, as described above, reveal that factors driving the export competitiveness could be differed from one industry to another. The differences appeared in results of various industrial studies offer an idea to conduct the comparative study of determinants of export competitiveness in Sri Lanka. Then it will be helpful to identify the different factors which gain competitive advantage to the various industries. The industries which are earning foreign exchange to the country need to be considered when selecting industries to conduct the comparative study of factors affecting export competitiveness.

The current study was attempted to identify the factors directly influencing on tea export competitiveness of Sri Lanka based on the diamond model derived by Michal Porter. There may be factors indirectly that have impact on export competitiveness. And also there may be interactions among the competitiveness factors. Interaction among the factors may strengthen the impact on export competitiveness. Then it is more worth to identify the factors that have indirect impact and assess the interaction among the factors affecting export competitiveness.

5.5 Summary

With this study, it is aimed to find out the factors affecting on export competitiveness of tea industry. The results have implications for the managers of the firms. It is also discussed that based on which factors should the firms put emphasis to the factors of competitiveness in the diamond model. Considering those factors, some strategic implications are also derived.

6. Summary and Conclusion

Sri Lanka stands at important crossroads as it makes a decisive transition into a middle-income economy. To sustain economic growth, Sri Lankan economy has to face three challenges that are; containment of the fiscal deficit, lessening the trade deficit and reducing the public debt. With GDP growth targeted at seven to eight percent over the medium term, strengthen of external sector is one of the main strategies of the country. A key feature of external sector is export earnings. As a country Sri Lanka must make more concentrated efforts to promote its export sector through increasing export earnings. In other words, Sri Lanka should focus on strengthening its foreign exchange earning capacity through the export of goods and services. The policies should focus on narrowing down the trade deficit to some sustainable level by improving export competitiveness. Considering the export goods, Sri Lanka had the extraordinary years of trading experience for tea with the rest of the world. Tea is the third largest agricultural industry and second largest exporter in Sri Lanka. Since independent, tea generated a considerable amount of foreign exchange earnings and provided employment opportunities nearly two million of people. Last decade tea export performance, especially market share, of Sri Lanka has turned down when comparing other tea exporting countries like; Kenya, Vietnam and China. Declined in tea export earnings had made savior impact of foreign exchange earnings and ultimately it impacted on trade balance of the country. Therefore, there is a vital need to identify why tea export performance has turned down and why Ceylon tea has lost its competitive position in global tea market. To answer the question of why, it is required to identify the factors affecting on tea export competitiveness of Sri Lanka. The main purpose of this study is to find

out the factors affect on export competitiveness of tea industry of Sri Lanka. Porter's diamond model with some adaptations was taken as proposed model of this study. Primary data were obtained through e-mail survey at firm level. Key managers in the tea exporting firms were considered as the respondents of the survey. The study used partial least square structural equation model (PLS-SEM) to quantitatively analyze the contribution of each determinant to tea export competitiveness. Other than PLS-SEM; Smart PLS version 2.0, the data were analyzed using and SPSS (version 16) statistical packages.

This study integrates perspectives from export competitiveness, the resource based view of the firm, local and foreign demand conditions of the firm, association with related and supporting industries, government sources and brand loyalty. Supported by the empirical evidences this study found out that factor conditions have the most significant influence of export competitiveness of tea industry and the second important is government support. Followed by government support, demand condition and brand loyalty have also made positive impact on export competitiveness of tea industry in Sri Lanka. Then the results suggested that factor conditions, demand conditions, government support, brand loyalty and related and supporting industries can help Sri Lankan tea industry to sustain its competitive advantage. By creating favourable conditions, Sri Lanka can remain competitive position in the global tea industry for many years to come.

In sum, all is not lost. The recipe is not found in the past. It is in the future. As a country, people must see at the past only a rear view mirror and move forward. The country can learn lessons from past mistakes. Regardless of fierce competition in the global tea market, application of Porter's diamond

model to Sri Lankan tea industry illustrates that even despite rising production costs; the industry can remain globally competitive with assist from government sector, local and foreign demand conditions, creating brand loyal customers and related and supporting industries. Sri Lankan tea companies can create specific niche markets under Sri Lanka brand names. The concept of export competitiveness in tea industry based on present study has been delineated with an extensive study developed. It is hoped that future researchers may reflect positively on this work, despite its apparent limitations. Further development offered here will help to make advance understanding in the important area of export competitiveness and how it is useful in international business.

7. References

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8. Annexure

Annexure 01: Questionnaire

K.M.V. Sachitra
Lecturer (Probationary)
Department of Commerce
Faculty of Management Studies and Commerce
University of Sri Jayewardenepura
Nugegoda.

03rd July 2013

Dear Sir/Madam,

I, K.M.Vilani Sachitra, am a lecturer (probationary) attached to the above department and currently reading for a MSc. degree in University of Sri Jayewardenepura. As a requirement of my post graduate studies, I wish to conduct a research on **'Determinants of tea export competitiveness in Sri Lanka'.** Herewith, I am sending you a questionnaire (with a stamped envelope) that is designed to identify the factors which affecting to tea export competitiveness in Sri Lanka.

I realize that your time is extremely valuable and you could receive many requests for survey information. To accomplish my task, your contribution is extremely important. I very much appreciate your contribution in this research. Therefore, please be kind enough to complete the attached questionnaire and post it to me using the stamped envelope.

The information requested would not reflect any material that could be sensitive or proprietary to your organization. All the information received will be held in complete confidence and used only for statistical analysis of this study.

If you have any queries regarding this study or questionnaire, please do not hesitate to contact.

Thank you very much.

Questionnaire Number:
(Official Use Only)

Confidential

An Empirical Study on Determinants of Tea Export Competitiveness

The purpose of this study is to obtain information regarding factors affecting on tea export competitiveness in Sri Lanka. Information obtained from this study will be used only for studies purpose.

If you desire a summary of the principal findings of this research, please let me know, I will be pleased to give them.

This questionnaire consists with three parts (Part A, B and C).

Part A – General Information

1. Type of organization (please put a tick (√) to the appropriate response)

   ☐ Sole-proprietorship ☐ Partnership

   ☐ Private limited liability ☐ Public limited liability

   ☐ Other (please specify)……

2. How many years has your firm been involved in the tea exporting? (please put a tick (√) to the appropriate response)

   ☐ Less than 5 years ☐ 5 to 10 years

   ☐ 10 to 15 years ☐ 16 to 20 years

   ☐ More than 21 years

3. Including yourself, approximately how many people are working in your firm? (please put a tick (√) to the appropriate response)

   ☐ Less than 10 ☐ 10 to 49

   ☐ 50 to 99 ☐ 100 to 149

   ☐ More than 150

4. How much is the total export revenue from tea (approximately) for the financial year 2012? (please put a tick (√) to the appropriate response)

☐ Less than Rs. 5 Billion ☐ Rs. 5 to 10 Billion

☐ Rs. 11 to 15 Billion ☐ Rs. 16 to 20 Billion

☐ More than Rs 21 Billion

Part B – Information on Export Competitiveness

In your opinion, please indicate the **degree of advantage** of following variables in **meeting export competitiveness.** (Please circle the corresponding answer)

1 = Strong Disadvantage (SD)

2 = Disadvantage (D)

3 = Neutral (N)

4 = Advantage (A)

5 = Strong Advantage (SA)

No.	Variables	SD	D	N	A	SA
1	Availability of raw materials	1	2	3	4	5
2	Quality of basic infrastructure (road, port, energy)	1	2	3	4	5
3	Availability of business and market information	1	2	3	4	5
4	Regulatory environmental conditions	1	2	3	4	5
5	Number of employees engage in the firm	1	2	3	4	5
6	Level of education of employees	1	2	3	4	5
7	Availability of loan facilities	1	2	3	4	5
8	Cost of technology	1	2	3	4	5
9	Foreign direct investment (FDI) opportunities	1	2	3	4	5
10	Return on investment (ROI)	1	2	3	4	5

No.	Variables	SD	D	N	A	SA
11	Cost of raw materials	1	2	3	4	5
12	Advanced infrastructure quality (telecommunication, storage, logistics)	1	2	3	4	5
13	Level of 'joint market studies' with other firms in the industry	1	2	3	4	5
14	Use of electronic commerce (e-commerce)	1	2	3	4	5
15	Quality of cost administration	1	2	3	4	5
16	Quality of on-the-job training	1	2	3	4	5
17	Quality of raw materials	1	2	3	4	5
18	Possibility of technology diffusion	1	2	3	4	5
19	Preference level of foreign demand to your product in terms of origin and brand	1	2	3	4	5
20	Openness of public sector contacts	1	2	3	4	5
21	Competitive intention of your firm	1	2	3	4	5
22	Economic and political stability	1	2	3	4	5
23	Quality of demand and standard of regulations	1	2	3	4	5
24	Knowledge level of foreign customers about your product	1	2	3	4	5
25	Philosophy of the ruling party of the country	1	2	3	4	5
26	Accessibility of core and supporting technology	1	2	3	4	5
27	Level of 'joint purchasing' with other firms in the industry	1	2	3	4	5
28	Expenditure on research and development	1	2	3	4	5
29	Tariff structure of the country	1	2	3	4	5
30	Relations with universities	1	2	3	4	5
31	Management support on strategy formulation	1	2	3	4	5
32	Management support on strategy implementation	1	2	3	4	5
33	Domestic market share	1	2	3	4	5

Strong Disadvantage (SD), Disadvantage (D), Neutral (N), Advantage (A), Strong Advantage (SA)

No.	Variables	SD	D	N	A	SA
34	Presence of entry barriers to the industry	1	2	3	4	5
35	Product differentiation	1	2	3	4	5
36	Understanding of national and international regulations of the industry	1	2	3	4	5
37	Presence of import-export policy of the country	1	2	3	4	5
38	Industry related labour policy	1	2	3	4	5
39	Change rate of customer demand	1	2	3	4	5
40	Total assets value of the firm	1	2	3	4	5
41	Coordination with suppliers	1	2	3	4	5
42	Incentives provided by the government	1	2	3	4	5
43	Neighboring countries' share in foreign demand	1	2	3	4	5
44	Stability of exchange rate	1	2	3	4	5
45	Relations with research and development institutions	1	2	3	4	5
46	Presence of trade agreements between countries	1	2	3	4	5
47	Presence of government support on export expansion	1	2	3	4	5
48	Firm's experience level on international trade	1	2	3	4	5
49	Quality certificate obtained by your firm (E.g. ISO, SLS, ICS)	1	2	3	4	5
50	Level of continuous purchasing of buyers (Order repetitiveness of buyers)	1	2	3	4	5
51	Level of export order rejections	1	2	3	4	5
52	Presence of government support on technology improvement	1	2	3	4	5

If you prefer, please answer the question in Part C.

Part C - Overall Comment

1. In your opinion, please indicate the suggestions that you could make in improving the competitiveness of tea export in Sri Lanka.
   a. ……
      ……
      ……
   b. ……
      ……
      ……
   c. ……
      ……
      ……

Thank You Very Much for Your Co-operation

Annexure 2: Pilot Survey Results

Table 01: Kaiser-Meyer-Okling (KMO) measure of sampling adequacy of Elements

Element	**Variables**	**Component Matrix (Factor loading)**	**KMO measure of sampling adequacy**
Raw materials	Availability of RM Cost of raw materials Quality of raw materials	.872 .813 .895	0.695
Human resources	Quality of on-the-job training Level of tertiary education of employees	.818 .818	0.712
Capital	Availability of loan facilities Return on investment (ROI) Foreign direct investment (FDI) opportunities **Accessibility to credit and stock market**	.838 .948 .773 **.567**	0.609
Physical infrastructure	Quality of basic infrastructure Advanced infrastructure quality	.868 .868	0.500
Information	Availability of business and	.858	0.500

infrastructure	market information Use of electronic commerce (e-commerce)	 .858	
Technology	Accessibility of core and supporting technology Possibility of technology diffusion Cost of technology	.753 .904 .821	0.614
Local market	Domestic market share Openness of public sector contacts	.845 .845	0.500
Quality of demand	Change rate of customer need Quality of demand and standard of regulations	.884 .884	0.500
Market share export	Knowledge level of foreign customers about your product Neighboring countries' share in foreign demand	.915 .915	0.500
Related industries	Level of 'joint purchasing' with other firms in the industry Level of 'joint market studies' with other firms in the industry	.890 .890	0.500
Supporting	Expenditure on research and	.809	0.685

industries	development Relations with research and development institutions Relations with universities **Level of active work of relevant civil society agencies (E.g; Lions Club)** **Relations with public authorities and institutions (Other than Universities)**	.852 .803 **.476** **.545**	
Administrative support	Quality of cost administration Regulatory environmental conditions	.767 .767	0.500
Structure and rivalry	Competitive intention of your firm Presence of entry barriers to the industry Product differentiation	.750 .794 .743	0.590
Investment climate	Understanding of national and international regulations of the industry Presence of trade agreements between countries Industry related labour policy Economic and political	.773 .812 .741 .784	0.720

	stability		
Strategy	Management support on strategy formulation Management support on strategy implementation Coordination with suppliers	.933 .979 .834	0.547
Macroeconomic stability	Stability of exchange rate Tariff structure of the country	.884 .837	0.755
Ruling party behaviour	Philosophy of the ruling party of the country Presence of import-export policy of the country	.832 .836	
Microeconomic stability	Government support on export expansion Government support on technology improvement Incentives provided by the government	.960 .915 .954	0.741

Table 02: KMO measure of sampling adequacy of Elements in Determinants

Determinants	Elements	Component Matrix (Factor loading)	KMO measure of sampling adequacy
Factor conditions	Raw Material	.837	0.721
	Human Resources	.727	
	Capital	.707	
	Physical Infrastructure	.840	
	Information Infrastructure	.864	
	Technology	.770	
Demand conditions	Local market	.841	0.660
	Market share export	.842	
	Size of domestic market	.878	
Related and supporting industries	Related industries	.858	0.654
	Supporting industries	.881	
	Administrative support	.863	
Firm strategy, structure and rivalry	Structure and rivalry	.874	0.627
	Investment climate	.901	
	Strategy	.932	
Government	Macroeconomic stability	.849	0.656
	Ruling party behaviour	.823	
	Microeconomic stability	.836	

Table 03: Reliability analysis of determinants

Determinants	Elements	Cronbach's Alpha
Factor conditions	Raw Material Human Resources Capital Physical Infrastructure Information Infrastructure Technology	0.766
Demand conditions	Local market Market share export Size of domestic market	0.764
Related and supporting industries	Related industries Supporting industries Administrative support	0.730
Export competitiveness	Structure and rivalry Investment climate Strategy	0.772
Government	Macroeconomic stability Ruling part behaviour Microeconomic stability	0.789

Table 04: Composite reliability

Determinants	Composite Reliability
Factor conditions	0.87
Demand conditions	0.82

Related and supporting industries	0.85
Export competitiveness	0.87
Government	0.95

Table 05: Average Variance Extracted (AVE)

Determinants	**Average Variance Extracted (AVE)**
Factor conditions	0.628
Demand conditions	0.729
Related and supporting industries	0.806
Firm strategy, structure and rivalry	0.814
Government	0.833

Table 06 Correlation Matrix

Determinants	**FC**	**DC**	**RS**	**G**	**EC**
FC	0.628**				
DC	0.538*	0.729**			
RS	0.612*	0.503*	0.806**		
G	0.605*	0.532*	0.534*	0.833**	
EC	0.591*	0.485*	0.678*	0.680*	0.814**

**AVE values

*Correlation coefficient