Journal of Global Economics, Management and Business Research
4(4): 185-194, 2015
International Knowledge Press
www.ikpress.org

ENHANCING COMPETITIVE ADVANTAGE OF SRI LANKAN MINOR EXPORT CROPS

VILANI SACHITRA[1*] AND SIONG-CHOY CHONG[2]
[1]Department of Commerce, University of Sri Jayewardenepura, Sri Lanka.
[2]Finance Accreditation Agency, Malaysia.

AUTHORS' CONTRIBUTIONS
This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

Received: 23rd January 2015
Accepted: 13th July 2015
Published: 27th August 2015

Original Research Article

ABSTRACT

The composition of agricultural export crops in Sri Lanka has changed over the last decade. The export shares of large scale traditional plantation crops like tea and rubber have declined, instead the contributions of small scale non-traditional minor export crops such as cinnamon, pepper, and clove have increased. A better understanding of competitive advantage of minor export crops provides the necessary framework to enhance their competitiveness in domestic and global markets. This study aims to describe the competitive structure and dynamics of minor export crops sector in Sri Lanka. In order to compare the performance of export growth with similar countries, the Revealed Competitive Advantage index and global market share analysis are computed using data extracted from the International Trade Centre. The findings reveal that global market share and the RCA value of cinnamon, clove, and pepper in Sri Lanka has gradually declined. The minor export crops occupy an important position in global market only if competitive advantage of such crops in Sri Lanka is enhanced. One important implication arising from this study is the need to identify factors associated with competitive advantage of minor export crops. This study has provided the impetus for future studies to determine the factors and measures of competitive advantage not only for the minor export crops but also for the agricultural sector in general.

Keywords: Competitive advantage; global market share; minor export crops; revealed competitive advantage; Sri Lanka.

1. INTRODUCTION

Improvements in technology and information systems, along with changes in climate and economies have resulted in a competitive environment for the food and agribusiness sector. Because of these, the competitive advantage of this sector has since become an interesting area of academic study Mugera [1], particularly amongst the developing countries Dziwornu [2]. As a matter of fact, scholarly attention on the agribusiness area has increased in recent years as the sector becomes more industrialised, competitive, technological and managerial intensive Wilk and Fensterseifer [3]. The importance of this sector is obvious where not only it represents a large share of the total economy in terms of land utilisation, employment opportunities and economic growth; more significantly it contributes to the economic development of any developing nation Nwachukwu et al. [4]. Specifically, this sector contributes

**Corresponding author: Email: vilani3164@gmail.com;*

significantly to enhance capital flow, reduce deficits in trade balance, create surplus in balance of payment and expand the production base of any nation. This explains why the value of the world agricultural exports has doubled between the period of 2000 and 2013 (UNCOMTRADE [5].

In Sri Lanka, 24.8% of gross export earnings are derived at from agricultural export crops. About 32% of total land area is devoted for agriculture, with 35.6% of employed population engaged in this sector (Central Bank of Sri Lanka [6]. The export crops in Sri Lanka can be categorised into two sub-groups. Major export crops such as tea, rubber and coconut, which contributed 92% of total export earnings for the country by independence in 1948, contributed only 14.8% of total agricultural exports in 2013. Minor export crops include cinnamon, cloves, pepper, sesame seed, cocoa, cashew nuts and cardamom which contributed around 14.5% of export earnings in 2013 (Spice Council of Sri Lanka [7]. Amongst the many minor export crops, cinnamon, clove and pepper are the main agricultural products which also represent spices. Known as the Spice Island, Sri Lanka used to be historically attractive to the Western nations for the range and richness of its spices and it still is (Export Development Board [8].

The overall export shares of major traditional plantation crops (tea, rubber and coconut) have declined (Table 1). The average share of total exports of tea and rubber changed -8.81% and 15.21%, respectively from 2003 to 2013. However, the average share of minor crops (cinnamon, clove and pepper) on total export changed 95.78%, 135% and 127%, respectively. It is evident that the contributions of major export crops to export earnings of Sri Lanka are slowly diminishing, whilst the minor export crops are increasingly providing significant contributions to earnings.

The statistics from [6] shows that specifically, cinnamon, clove and pepper contributed 6% of total agricultural exports and 59.8% of total minor agricultural exports. Relative to export earnings, 12.1% of gross domestic product (GDP) is derived at from agricultural products (tea, rubber, coconut, and paddy) and minor export crops. The contribution of minor export crops toward the GDP is 3.58%. Further, minor export crops are contributing 38.8% of total agricultural products, with 66.2% coming from cinnamon, pepper and clove. It can thus be seen that minor export crops, in particular cinnamon, pepper and clove, are increasingly providing significant contributions to the national agricultural production as well as export earnings to Sri Lanka.

Sri Lanka is the largest producer and exporter of Ceylon cinnamon in the world whether in its primary or valued-added form such as cut pieces, powder, oil, tablets and crushed form [7]. The [8] reported that on an average, Sri Lanka exports a value of USD11, 860 million cinnamons per year. Sri Lankan clove is the fifth largest clove exporter in the world, while recording an average annual export value of USD3, 050 million. The country produces 2% of the world demand for pepper, the export value per year is USD7, 060 million.

Understanding the competitive level thus becomes a key element for developing strategies that could enhance competitiveness in addition to providing a guideline for assessing the strengths and weaknesses of agribusiness firms Arasa and Kioka [10]. In view of the growing significance of minor export crops to Sri Lanka, it is imperative to identify their degree of competitiveness in export demands.

In view of the growing importance of minor export crops such as cinnamon, clove and pepper in global markets, this study aims to describe its present competitive structure and dynamics by focusing on the competitiveness indicators. Literature relevant to the concept of competitive advantage along with its indices is provided in the subsequent section. The methodology employed is described next, followed by the findings. The results are then discussed based on the analysis derived at before the paper is concluded with future research directions.

2. LITERATURE REVIEW

International competition is seen as an important and growing force to any nation. In this context, the

Table 1. Share of commercial crops in total Sri Lankan exports

Crops	Year										
	2003	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Tea	14.82	13.36	13.05	12.92	13.27	15.39	16.51	16.46	14.73	14.98	14.38
Rubber	5.54	6.11	7.17	8.01	7.73	8.15	6.78	8.88	9.89	9.49	8.56
Cinnamon	0.92	0.85	0.95	0.98	0.99	1.01	1.04	1.00	1.21	1.39	1.86
Clove	0.22	0.25	0.28	0.29	0.22	0.30	0.37	0.45	0.45	0.47	0.47
Pepper	0.27	0.17	0.20	0.26	0.42	0.33	0.30	0.52	0.31	0.75	0.75

Source: International Trade Centre (2014) [9]

agricultural sector contributes significantly to improve the economic activities and to develop strategies of nations [11]. Porter [12] focuses on the activities of a nation that are required to achieve competitive advantage (diamond model). Hence, nations should scan, analyse and interpret the drivers of their competitive environment in order to obtain appropriate realignment, survival and success [10]. International level competitiveness is measured through the growth of standards of living, growth of aggregate productivity and the ability of firms in a nation to increase their market shares [13].

Latruffe [14] indicates that domestic competitiveness - comparing sectors or firms within a country - allows the consideration of factors that may not be visible at the aggregate level. Strengthening that argument, [12] mentions that the competitiveness of a nation depends on the capacity innovation and capabilities of its industries and therefore, competitive advantage should be created and sustained through internal processes. When considering competitiveness, it is sufficient enough to focus on specific industries and industry segment [12]. As such, firms must compete aggressively rather than imitating, giving rise to the concept of firm-level competitiveness.

At the level of individual firms, competitiveness is the ability of a firm to survive and prosper. It refers to the ability of firms to create, innovate, produce and sell goods and services on internal and foreign markets, and maintain existing or enlarge its share in a market Petrovic et al. [15]. The growing demand for agricultural products in the world requires the agribusiness firms to be competitive in the world market in order to obtain benefits of increased demand Yercan and Isikli [16]. Competition across manufactured products is driven through the value-added supply chains. Such competition requires agricultural producers [farmers] to capture greater value based on know-how [11]. This view creates an interesting research idea to explore the competitive position of the agribusiness sector. In order to determine if a nation, industry or firm is competitive, it is required to measure its competitive advantage. The different measures are explained in the following sub-sections.

There are substantial studies carried out relating to determinants of competitiveness of tea, coconut, and rubber products [17,-21]. The empirical analysis of competitiveness of agrifood like spices has been acknowledged by literature, however, evidence is still not enough [45,23,20].

2.1 Measuring Competitive Advantage

Competitive advantage could be measured by using past performance indicators or potential competitiveness indicators [22]. In this regards, there are multiple indicators used to measure competitiveness in different sectors or industries. For example, market share, productivity [23]; total factor productivity [24]; Revealed Comparative Advantage (RCA) [25]; Relative Trade Advantage (RTA) [26]; relative price, market share, degree of profitability and product quality, Domestic Resource Cost (DRC) and Social Cost Benefit Ratio (SCB) analysis [27]; productivity, market share and efficiency ([28]; financial performance and non-financial performance [29]; and benchmarking, balanced scorecard and EFQM model excellence [30]. Voulgaris et al. [31] caution that due to issues with data availability and reliability regarding opportunity cost, DRC is difficult to compute. Further, [14] argues that whilst DRC may be considered as a method of calculating competitiveness, it can also be viewed as a component of competitiveness by itself. Subsequently, evaluation of competitiveness has revolved around three ideas, namely productivity, cost and market share Delgado et al. [32]. Specifically in the agricultural sector, the measurements rely on the RCA index, market share and productivity [33-35,26].

The concept of RCA was introduced by Bela Balassa in 1965 to identify the relative trade performance of countries. This model assumes that the commodity pattern of trade reflects inter-country differences in relative costs as well as in non-price factors Balassa, [36]. This method is based on trade shares and their corresponding changes over time Zawalinska [37] and as such, it can distinguish between the concept of comparative and competitive advantage based on cost comparison of market prices Siggel [38].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 RCA index is the most widely used indicator of competitive advantage in agricultural sector trade as evident from the literature [39-42,34,35,25]; Zhemoyda and Gerasymenko [43]. For instance, recently, Kaimakoudi et al. [44] investigate export performance and competitiveness of fisheries sector in Eastern European countries by employing RCA indices to reveal the range of competitiveness amongst the countries. Similarly, [11] employed the RCA index and constant market share analysis to describe the competitive structure and dynamics of dry chili export product in Mexico.

The identification of products which are highly competitive in the world market can be assessed by analysing the market share of that particular nation. Market share is the portion of a market controlled by a

particular product over a specific period of time, and as such, the change in market share has been taken as an indicator of competitiveness since it has a sound literature support since 1987 [33]. Gattoo and colleagues use constant market share analysis to analyse the declining US export share against the backdrop of alternative measures of competitiveness in the US economy. Similarly, [28] measure the competitive performance of Indian agrifood chain using market share. More recently, Notta and Vlachvei [45] use market share and productivity as measurement indicators of competitive advantage for the food and beverage manufacturing industry.

In terms of productivity, [30] measure competitive advantage of agricultural, civil engineering and education sector by utilising productivity as ratio indicator. Similarly, Woodford et al. [46] use productivity to assess the competitive advantage of dairy farming sector. When computing productivity, however, there are certain limitations with regards to the data sources such as lack of availability and reliability of data and difficult to compare between countries [31]. Acknowledging the limitations, Kadocsa [47] opines that although the measurement points of competitiveness such as revenue, profit, productivity, goodwill, and customer satisfaction can be quantified and accessible, sometimes those measures are difficult to quantify. Further, Singh et al. [48] mention that partial productivity indices are not succeed due to fail to measure the technical progress.

Moreover, productivity in the agricultural sector can be defined in different terms, namely land productivity, labour productivity and capital productivity. Hence, there is no universally accepted criterion to measure productivity. [45] use labour productivity, whilst [30] employ land, material and labour productivity. Even though it is not difficult to analyse competitive advantage of a sector in any nation using productivity measures, problems arise when discovering comparative analysis of competitive advantage. As such, this study utilises market share and RCA index to analyse the degree of competitive advantage of minor export crops in Sri Lanka based on the trade statistics provided by the International Trade Centre.

3. METHODOLOGY

This study computes the RCA index and market share of minor export crops using trade statistics published by International Trade Centre for the period of between 2004 and 2013. The RCA index is defined as RCAih = (Xih/Xit)/(Xwh/Xwt), where *RCAih* represents comparative advantage ratio for country *i* in product *h*; *Xih* represents country *i*'s exports of product *h*; *Xit*s shows total exports of country *i*; *Xwh* shows world exports of product *h*; and *Xwt* represents total world exports [36]. Market share is calculated by taking the sales of a firm or a product over the period indicated above and dividing it by the total sales of the industry over the same period.

Amongst the minor export crops in Sri Lanka, this study targets at three crops, namely cinnamon, pepper and clove in view that they are the top three contributors of minor export crops. This is supported by the statistics from [6] where cinnamon, pepper and clove contribute 59.8% of total minor agricultural exports.

4. RESULTS AND DISCUSSION

The identification of products which are highly competitive in the world market can be assessed by analysing the market share of that particular product [33,25]. On this basis, the global market share of agricultural crops (major and minor) in Sri Lanka is presented in Table 2.

It is evident from Table 2 that the Sri Lankan minor export crops have a relatively higher market power, particularly cinnamon. However, it could also be seen that the competitive position of Sri Lankan agricultural crops are fluctuating. This is also support to [25]. It can be argued that the fluctuations occurred due to changes in demand in the world market. In the case of countries which mainly export cinnamon, clove and pepper, they are able to maintain their market shares in the agricultural crops market.

Table 2. Global market share of Sri Lankan export crops

Crops	Year										
	2003	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Tea	22.55	21.64	22.15	20.93	22.59	23.37	21.61	21.34	20.91	21.91	20.41
Rubber	0.37	0.38	0.44	0.45	0.42	0.42	0.39	0.44	0.47	0.45	0.42
Cinnamon	41.13	35.78	41.52	39.10	37.43	40.55	35.61	33.49	35.71	41.21	32.84
Clove	4.89	8.43	13.76	9.12	5.69	21.87	7.05	22.70	4.61	4.29	4.08
Pepper	1.33	0.86	1.10	1.29	1.66	1.24	1.10	1.89	0.96	2.07	2.01

Source: International Trade Centre (2014) [9]

Taking a deeper look, Table 3 shows the market shares of agricultural crops export of other countries. In the face of cinnamon export, Indonesia, China, and Vietnam are in the highest market position. Madagascar, Singapore, and Tanzania are the market leaders of clove export. In pepper export, Vietnam, India, and Indonesia are recorded as market leaders. The table also shows that Indonesia, Vietnam, Madagascar, Tanzania and India are able to preserve the market competition of cinnamon, clove and pepper. However, the export shares of cinnamon, clove and pepper of Sri Lanka fluctuated significantly from 2003 to 2013. These provide sufficient evidence to conclude that the competitive advantage of minor export crops of cinnamon, clove and pepper in Sri Lanka has declined.

Nevertheless, analysis based on market share is not scientifically enough to measure the changes in competitive advantage [49,34,35,25]. Therefore, the RCA values of cinnamon, clove and pepper of their major exporting countries are computed as shown in Table 4.

The table indicates that cinnamon, clove and pepper are experiencing competitive position in the world market. However, the RCA values of cinnamon, clove and pepper in Sri Lanka has gradually declined, whereas other exporting countries (Indonesia, Vietnam, Tanzania, and Madagascar) are able to preserve their RCA values in a steady level. Table 4 provides support to [25] that cinnamon, clove, and pepper have experienced competitive position in the world market. The loss in market share can therefore be observed together with the RCA values which reflect the declining competitive advantage of minor export crops in Sri Lanka. Hence, this is a serious concern and steps ought to be taken to maintain an economically sustainable growth in Sri Lanka, particularly for its three minor export crops.

Table 3. Global market share of export crops in other countries

Product/Country	Year										
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Cinnamon											
Indonesia	15.1	17.6	14.5	15.1	17.7	17.6	14.6	19.6	18.0	15.5	20.7
China	19.0	22.1	18.7	19.5	17.7	14.8	19.5	18.9	20.1	18.2	18.9
Vietnam	4.8	6.2	5.9	8.5	8.0	8.4	10.9	11.8	11.0	10.5	11.8
Clove											
Madagascar	23.9	16.3	14.2	21.0	24.8	20.0	28.4	19.2	22.6	31.3	34.7
Singapore	32.5	44.6	30.1	26.2	24.8	18.0	28.3	17.0	53.0	22.9	23.4
Tanzania	8.4	6.2	7.2	6.2	5.6	9.0	8.4	4.9	4.1	8.8	12.4
Pepper											
Vietnam	10.8	13.8	13.4	14.2	14.1	14.6	18.0	18.4	22.4	22.3	22.6
India	9.3	11.2	10.9	14.4	20.6	16.3	16.9	18.6	19.7	19.3	19.6
Indonesia	9.6	5.1	5.2	5.9	6.9	8.7	7.3	11.0	6.8	10.2	12.3

Source: International Trade Centre (2014)[9]

Table 4. Revealed comparative advantage of minor export crops

RCA	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Cinnamon										
Sri Lanka	596.0	698.7	694.0	676.1	792.2	618.2	609.7	612.3	613.5	605.7
Indonesia	22.3	17.5	18.0	21.4	20.5	15.5	18.8	16.1	17.8	20.4
China	3.4	2.5	2.4	2.0	1.7	2.0	1.8	1.9	1.6	1.5
Vietnam	21.2	19.0	25.6	22.9	21.4	23.7	24.8	23.7	25.1	25.4
Clove										
Sri Lanka	140.2	251.2	173.3	108.1	427.3	122.6	213.5	83.9	83.0	83.1
Madagascar	1526.6	1757.0	2495.4	2550.9	1911.6	3210.9	2684.1	2788.6	2789.5	2959.1
Singapore	20.4	13.6	11.6	11.5	8.5	13.0	7.3	23.5	11.9	5.4
Tanzania	385.6	448.9	401.7	362.7	458.7	349.1	184.3	157.6	285.6	506.3
Pepper										
Sri Lanka	14.3	18.4	22.8	29.9	24.3	19.1	21.3	17.5	18.2	18.4
Vietnam	47.3	42.7	42.6	40.2	37.1	39.0	38.6	42.1	45.2	49.4
India	13.4	11.3	14.2	19.5	14.3	11.9	12.8	12.5	12.8	12.3
Indonesia	6.5	6.3	7.0	8.4	10.1	7.8	10.5	11.1	11.6	12.5

Source: Compiled by author based on International Trade Centre statistics (2014)

Cinnamon, clove and pepper are some of the important agricultural export crops in Sri Lanka, accounting for about 10% of total agricultural exports and 59.8% of minor export earnings to the country. Looking at the analysis, a better understanding of the status and extent of competitive advantage of agricultural products, particularly minor export crops which are growing in importance, will provide the necessary economic framework to Sri Lanka to compete at domestic and global markets. This is amplified by the importance of minor export crops as agricultural commodities used in the production of spices Bhawaraj et al. [50]. Spices are always in demand by the industrialised world. As such, developing countries such as Sri Lanka can rely upon these commodities to earn valuable foreign exchange by exporting the spices only if its competitiveness can be enhanced and sustained.

Identifying the level of competitive advantage of minor export crops in Sri Lanka is thus becoming more important in order to realise the proposed export target for 2020 at USD20 billion, against the current USD10.39 billion Budget Proposal, Sri Lanka [51]. The country is expecting to earn USD15 billion from exports of tea, apparel, handlooms and rubber products. From the remaining USD5 billion, the spice sector needs to contribute USD1 billion to this target by 2020. At present, the export value of minor export crops is USD355.4 million [6]. In other words, earnings from minor export crops need to be increased by USD644.6 million within the timeframe of six years. On an average, an increase of USD107 million per year is required. Hence, this calls for improvement in the competitive advantage of Sri Lankan minor export crops.

The cultivation of minor export crops is carried out by small family holders [7,25]. Amongst the twenty five districts in Sri Lanka, twelve districts are identified as cultivating areas of cinnamon, pepper and clove, whilst more than 70% of the production sides of the industry are smallholders who cultivated less than one hectare in extend. According to the Spice Council of Sri Lanka, issues facing the minor export crops sector range from high production cost, low volumes of production, product quality, skill development and lack of financing facilities. For example, the production cost of cinnamon increases by almost 9% per annum due to lack of crop management, crop protection and poor harvesting practices, causing failure to meet standard quality specifications such as smell, colour, moisture content and volatile oil of cinnamon products. In addition, the average total production of cinnamon per hectare yard is between 450 kg and 500 kg although the recommended standard is 950 kg. The same goes to the average total production of pepper per hectare of 850kg against the standard of 1000 kg. Despite these issues, the farmers have received many export orders within the last three years. As a matter of fact, many export orders could not be fulfilled due to insufficient volume of production. Hence, production needs to be increased by at least 50% over the next five years.

The minor export crops sector shows a very attractive picture towards Sri Lankan economy with high prices for the production, especially cinnamon, pepper, and clove, from the global market. The government, institutions, and farmers have the responsibilities to enhance competitiveness of the minor export crops sector. The government needs to come up with a different approach of providing financing facilities at reasonable cost of capital and low interest rates Kata and Zajac [52]; Tregear and Ness [53], particularly to enhance the performance of small holding minor agricultural firms. At present, the government of Sri Lanka is working with a state-owned and a private bank (Regional Development Bank and National Development Bank) to come up with low interest rate loan facilities for small scale farmers.

In addition, relevant government institutions such as Ministry of Minor Export Crops, Ministry of Industry and Commerce, Commerce Department, Export Development Board, Department of Export Agriculture and Spice Council are required to work together to resolve issues relating to training, production, extension, production-based research as well as establishing and implementing good agronomic practices. Specifically, these institutions should identify new initiates for production, ensure the adequate price for production, availability of good quality inputs and create awareness amongst farmers with regards to crop management and protection techniques. They need to train stakeholders in the sector, ranging from nurseries to harvest and produce standard certifiable products. In 2012, the national project of ‘enhancing the compliance, productivity capacities and competitiveness of the cinnamon value chain in Sri Lanka’ was launched with the intention of promoting small and medium enterprises. However, there is not enough evidence available in the Spice Council of Sri Lanka to evaluate the effectiveness of the project. Further, the project concerned only with cinnamon competitiveness and there is no proper programme carried out to enhance the competitiveness of other minor crops. [50] emphasize that increasing productivity, ensuring legal provisions, introducing scientific post-harvest handling, setting adequate prices and providing crop insurance have become the targeted efforts to enhance performance of spice producers in India.

Agribusiness mainly comprises fixed inputs such as land and labour due to its characteristics of production Grega [54]. Lack of employees also results in high production cost of minor export crops sector in Sri Lanka [7]. Acknowledging labour as a factor condition in the diamond model of Porter, Dlamini et al. [55] reveal that the unavailability of professional labour becomes the one of main constraints for competitiveness of agribusiness. Low social recognition is the main factor of labour shortage. Young generation, especially women, tend to seeking employment outside the country with the intention of earning higher salaries. According to the Chairman of the Spice Council, farmers can earn more than USD300 per month which is more than those who earn USD150 a month by working as housemaid overseas. This kind of assurance needs to be communicated to farmers, especially those of younger generations. In addition, extensive consultation with farmers will also assist to uplift the production volumes and quality. Farmers should cooperate with relevant institutions and the government to enhance the competitiveness of the sector as well as to enrich their living standards.

5. CONCLUSION AND FUTURE RESEARCH DIRECTIONS

In view of the significant contributions made by the minor export crops to the Sri Lankan economy, it is rather surprising that there have been no clear evidence in recent studies to identify the comparative competitive position of minor export crops in Sri Lanka. As a matter of fact, there is not enough empirical support in the global context to verify the recent analysis of competitiveness of spices, especially countries like China, Indonesia, India, Vietnam and Madagascar. This study has bridged the gap.

In an emerging global competitive environment, Sri Lankan minor export crops, especially cinnamon, clove, and pepper, have experienced competitive position in the world market. However, the study observed that loss of market share and the RCA reflect the declining competitiveness of minor export crops in Sri Lanka relative to other main competitors. There are several issues raised by the Spice Council of Sri Lanka which requires attention by the government, institutions and farmers. Accordingly, these stakeholders need to work together to overcome the issues raised in order to enhance the competitiveness of the minor export crops sector.

International competitiveness of a country relies on how firms and industries in that country perform in view of competition [10]. In order to identify the reasons for the fluctuating global market shares of minor export crops, it is vital to determine the factors associated with competitive advantage at firm level (farm level). This is one of the areas in which future research should pursue.

In addition, whilst considering determinants of competitive advantage of minor export crops, it should be noted that minor export crops sector is not a scaled-down version of large businesses. Rather, it represents small scale family owned businesses and therefore, traditional models representing the determinants of competitive advantage may not be appropriate. Hence, future study should focus on conceptual factors of competitive advantage that are more appropriate for small and medium scale businesses.

It is worth noting that there is no clear empirical evidence in Sri Lanka regarding the sources of competitive advantage of minor export crops, and hence, it calls for future studies to bridge the gap. In addition, identifying the competitiveness factors of individual farms can help policy makers choose appropriate policy levels to enhance competitive advantage. On the other hand, decision makers can consider those factors to formulate decisions and strategic planning at farm level.

The present study provides analytical description of competitive advantage of three primary export crops in Sri Lanka, namely cinnamon, clove, and pepper. However, there are altogether ten minor export crops in this category in Sri Lanka. The contributions and competitive advantage of all of these minor crops need to be analysed in future studies.

Due to lack of data availability and reliability, the study applied the RCA index and market share analysis to describe the competitive position of minor export crops at the aggregate level. With regards to individual farm level analysis, competitive advantage should also be measured using subjective measurement indicators to overcome the limitations of availability and reliability of farm level data. Furthermore, Depperu and Cerrato [56] argue that a single explanatory factor of firm performance is not an adequate indicator of competitiveness. As such, competitive advantage should be considered as a multidimensional construct by including a number of indicators that are jointly adapted to measure it. This is another area that future studies should pursue.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Mugera AW. Sustained competitive advantage in agribusiness applying the resource-based theory to human resources. International Food and Agribusiness Management Review. 2012;15:27-48.
2. Dziwornu RK, Raymond K. Econometric analysis of factors affecting competitive advantage of broiler agribusinesses in Ghana. Journal of Development and Agricultural Economics. 2014;6:87-93.
3. Wilk EO, Fensterseifer JE. Towards a national agribusiness system a conceptual framework; 2012. Available:http//www.lume.ufrgs.br/bitstream/handle/10183/579/000435805.pdf?sequence=1 (Accessed 01/09/2014)
4. Nwachukwu IN, Onyenweaku CE, Nwaru JC. Mbanasor JA, Daramola A. Competitiveness in the export demand for Nigerian rubber. Journal of Agricultural Sciences. 2014;9:1-11.
5. The United Nations (UN). (2014) United Nation Commodity Trade Statistics Database (UNCOMTRADE). Available:http//unstats.un.org/unsd/servicetrade/ (Accessed 10/06/2014)
6. Central Bank of Sri Lanka. Annual Report. Central Bank of Sri Lanka, Colombo; 2013.
7. Spice Council Sri Lanka. Major challenges confront Sri Lanka's spice exports; 2014. Available:http//www.srilankanspices.com/news_archieves.html (Accessed 14/10/2014)
8. Export Development Board, Spices & Allied Products; 2014. Available:http//www.srilankabusiness.com/spices/ (Accessed 10/10/2014)
9. International Trade Centre (ITC). Trade in Goods Statistics Data base; 2014. Available:http//www.intracen.org/trade-support/trade-statistics/ (Accessed 10/06/2014)
10. Arasa R, Kioko M. An examination of the NGO sector competitive environment in Kenya. International Journal of Science and Research. 2014;3:219-224.
11. Gaytán D, Benita F. On the competitiveness of Mexico's dry chili production. Economics of Agriculture. 2014;61:307-317.
12. Porter ME. Competitive Strategy. New York The Free Press; 1990.
13. Omerzel DG, Gulev RE. Knowledge Resources and Competitive Advantage. Managing Global Transitions. 2011;9:335–354.
14. Latruffe L. Competitiveness, productivity and efficiency in the agricultural and agri-food sectors. OECD Food, Agriculture and Fisheries Papers No. 30, OECD Publishing; 2010.
15. Petrovic P, Antevski M, Vesic D. The international competitiveness and economic integration. Journal of Economics and Organization. 2008;5(1):1-8.
16. Yercan M, Isikli E. International competitiveness of Turkish agriculture a case for horticultural products. Paper prepared for presentation at the 98th EAAE Seminar Marketing Dynamics within the Global Trading System New Perspectives; 2006.
17. Ethugala CV. Expectations of the private and civil stake-holders responsiveness of the state sector: Tea industry of Sri Lanka. Journal of APBITM. 2011;1(1):13-19.
18. Fonseka DC. Visionary leadership and the case of Dilmah. Sri Lankan J. Mgt. 2009;14(2):1-16.
19. Herath HMUN, De Silva S. Strategies for competitive advantage in value added tea marketing. Tropical Agricultural Research. 2011;22(3):251-262
20. Sachitra KMV, Kumarasinghe PJ. An empirical study on tea export competitiveness in Sri Lanka: Based on partial least squares structural equation model (PLS-SEM). International Journal of Research in Commerce, Economics and Management. 2014;4(4):51-58.
21. Wanninyake WMCB, Dissanayake DMR. Future prospects of value added tea sector of Sri Lanka, comparative study, proceedings of the annual research symposium 2006, Faculty of Graduate Studies, University of Kelaniya, Sri Lanka; 2006.
22. Frohberg K, Hartmann M. Comparing measures of competitiveness. Discussion Paper No2, Institute of Agricultural Development in Central and Eastern Europe; 1997.
23. Kortelainen S, Karkkainen H. Dynamic model in understanding dynamics of competitiveness system dynamics approach in mobile handset vendor business. Proceeding of Strategic Management Society SMS Annual International Conference. 2011;383-97.
24. Yee J, Ahearn MC, Huffman W. Linking among far productivity, off-farm work and farm size in the Southeast. Journal of Agricultural and Applied Economics. 2004;36: 591-603.
25. Thamiem S, Weerahewa J, Pushpakumara DKNG, Singh VP. Trade competitiveness of agroforestry crop sector in Sri Lanka. Tropical Agricultural Research, 2011;22:338-347.
26. Ismail MM, Abdullah AM, Hassanpour BH. Ranking the competitiveness of the Ruminant

meat and meat preparation sub-sector amongst Asean countries, International Journal of Economics and Management. 2013;7(1):1-16.

27. Nivievskyl O, von Cramon TS. The determinants of dairy farming competitiveness in Ukraine. Proceeding of 12th Congress of the European Association of Agricultural Economists – EAAE. 2008;234-247.
28. Sagheer SS, Yadav SG, Deshmukh A. Developing a conceptual framework for assessing competitiveness of India's agrifood chain. International Journal of Emerging Markets. 2009;4137-159.
29. Rahman NAA, Ramli A. Entrepreneurship management, competitive advantage and firm performances in the craft industry concepts and framework. Procedia - Social and Behavioral Sciences. 2014;145:129-137.
30. Kozena M, Chladek T. Company competitiveness measurement depending on its size and field of activities. Procedia - Social and Behavioral Sciences. 2012;58:1085 – 1090.
31. Voulgaris F, Papadogonas P, Lemonakis C. Drivers of competitiveness in the manufacturing industry the case of technology sectors in Greece. Journal of Economics and Development Studies. 2013;1:32-40.
32. Delgado M, Ketels C, Porter M, Stern S. The determinants of national competitiveness. NBER Working Paper No. 18249; 2012.
33. Gatto MD, Mauro FD, Gruber JD, Mandel BR. The Revealed Competitiveness of U.S. Exports. International Finance Discussion Papers No. 1026; 2011.
34. Saboniene A. Lithuanian export competitiveness comparison with other Baltic States. Inzinerine Ekonomika-Engineering Economics. 2009;2:49-57.
35. Serin V, Civan A. Revealed comparative advantage and competitiveness a case study for Turkey towards the EU. Journal of Economic and Social Research. 2008;10:25-42.
36. Balassa B. Revealed comparative advantage revisited: An analysis of relative export shares of the industrial countries 1953-1977, The Manchester School. 1977;45:327-344.
37. Zawalinska K. A review of quantitative studies on the competitiveness of polish agri- food products, 1990- 2000. Work Package 5, Working Paper 2/10. 2002;254-267.
38. Siggel E. International competitiveness and comparative advantage a survey and a proposal for measurement. Journal of Industry, Competition and Trade. 2007;6:1-34.
39. Batra A, Khan Z. Revealed comparative advantage An analysis for India and China. Indian Council for Research on International Economic Relations, Working paper No.168. 2005;124-136.
40. Ferto I, Hubbard LJ. Revealed comparative advantage and competitiveness in Hungarian agri-food sectors. The World Economic. 2003; 26:247–259.
41. Kumar NR, Rai M. Performance, competitiveness and determinants of tomato export from India. Agricultural Economics Research Review. 2007;20:551-562
42. Málaga JE, Williams GW. Mexican agricultural and food export competitiveness. International Market Research Report, No. IM-01-06; 2006.
43. Zhemoyda O, Gerasymenko N. Concentration of agriculture and competitive advantages of East-European countries. Proceeding of European Association of Agricultural Economists, 113th Seminar, September, Greece. 2009;59-71.
44. Kaimakoudi E, Polymeros SK, Batzios C. Investigating export performance and competitiveness of Balkan and eastern European fisheries sector. Procedia Economics and Finance. 2014;9:219-230.
45. Notta O, Vlachvei A. Competitiveness in food and beverage manufacturing industries. Proceeding of International Conference on Applied Economics – ICOAE 2011. 2011;437-442.
46. Woodford K, Greer J, Phillips A. Searching for productivity and competitive advantage on New Zealand dairy farms. International farm management congress; 2003.
Available:http//ageconsearch.umn.edu/bitstream/24322/1/cp03wo01.pdf
(Accessed 17/11/2014)
47. Kadocsa G. Research of competitiveness factors of SME. Acta Polytechnica Hungarica. 2006;3:71-84.
48. Singh S, Kiran R, Goyal D. Identification of key factors for enhancing competitiveness an exploratory study of the selected agri-biotech firms of Punjab in India. Agricultural Economics-Czech. 2015;61:179–188.
49. Batra A, Khan Z. Revealed comparative advantage an analysis for India and China. Indian Council for Research on International Economic Relations, Working paper No.168. 2005;124-136.
50. Bhardwaj RK, Rohatash K, Sikka BK, Singh A, Sharma ML, Singh NK. Challenges and

constraints of marketing and export of Indian Spices in, India. Proceeding of International Conference on Technology and Business Management. 2011;739-749.

51. Budget Proposal Sri Lanka. 2015. Ministry of Finance and Planning.
Available:http://www.treasury.gov.lk/images/depts/fpd/docs/budgetspeech/2015/Budget2015e.pdf (Accessed 18/11/2014)

52. Kata R, Zajac D. Role of territorial government in the development of agriculture and non-agricultural entrepreneurship in rural areas. 2007;23-31.
Available:http://ageconsearch.umn.edu/bitstream/138329/2/vol.%208_2.pdf
(Accessed 11/07/2014)

53. Tregear CLA, Ness M. Agrifood SMEs in Greece: The role of collective action. British Food Journal. 2006;108(8):663–676.

54. Grega L. Price stabilization as a factor of competitiveness of agriculture. Agricultural Economics-Czech. 2002;48:281-284.

55. Dlamini BP, Kirsten JF, Masuku MB. Factors affecting the competitiveness of the agribusiness sector in Swaziland. Journal of Agricultural Studies. 2014;(1):61-72.

56. Depperu D, Cerrato D. Analyzing International Competitiveness at the Firm Level: Concepts and Measures", Quaderni del Dipartimento di Scienze [online]. 2005;2934-49.
Available:http://dipartimenti.unicatt.it/dises-wp_azzurra_05_32.pdf (Accessed 14/01/2015)