

博士論文

The Entrepreneurial Orientation of Tea Manufacturing Firms in Sri Lanka: A Case Study in Low Grown Areas

(スリランカの製茶工場経営における企業家志向：
低産地における事例分析)

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SUMMARY

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The tea industry has played a predominant role in the Sri Lankan economy from more than a century and “Ceylon Tea” as a beverage has been enjoyed by people all over the world for generations. Tea export is contributing nearly 60% to the total agriculture exports and continued to be the major export crop in Sri Lanka. Its high net foreign exchange earning capability caused country to rely heavily on the tea industry. About 2 million people are employed directly and indirectly in the tea industry therefore it has been recognized as an important sector in Sri Lanka for reducing unemployment and poverty.

However, tea industry has undergoes several changes specially, with the presence of low cost producer countries like Kenya, Vietnam and Turkey and that affect the nature of competition in global market. After 2004, Sri Lanka’s competitive state in the global tea arena has been slipping from leading exporter position to third place due to competitive pressure in the global market and several internal supply issues. Sri Lanka becomes the highest cost producer (it is around US\$ 2.33 per kg) among leading producer countries due to productivity issues in field and factory level. Accordingly Sri Lanka is facing high competition from newly emerging producer countries that produce similar teas at a much lower cost. At present, global demand is inclining toward the more convenient types of tea therefore continual focus on orthodox and bulk tea could affect the country’s competitive position. Further, relative trade performance measured by revealed comparative advantage (RCA) indicated that RCA of tea in Sri Lanka is declining and RCA of Kenya is increasing. It is adversely affect the Sri Lankan tea industry.

Accordingly, Sri Lankan tea manufacturing firms facing difficulties to be remain competitive in the current global environment. Therefore, it is important to have proper strategic focus of tea manufacturing firms in the basis of competitiveness. Study conducted by Gupta and Dey (2010) also suggested the requirement of redesigning strategies to enhance the productivity of labour, material and energy. In this manner, intensification of factors which assist for competitive advantage of tea manufacturing firms is fundamental in improving their own performance and will invariably important in facing the competitive challenges arise with the globalization of the tea industry.

It is evident that innovation is essential to overcome the current problems and sustain the competitive position of Sri Lankan tea in the global market. Therefore, it is essential to enhance the entrepreneurial orientation strategies which help organization to be innovative and remain successful in the global environment since entrepreneurial orientation (EO) reflects the firm’s innovativeness, proactiveness and risk taking behaviors, which are predominant factors in mitigating the challenges arising in competitive market of tea. Further, it is vital to identify what factors influence on firm’s EO and thereby how EO strategies of tea manufacturing firms are facilitating to adopt innovations.

The general objective of this study is to determine the importance of EO related to innovation adoption of tea manufacturing firms and thereby identify the factors promoting competitiveness. Further, this study is

concerned the external and internal determinants of EO. To analyze the external determinant of EO, external relationships and EO will be analyzed. Influence of entrepreneurial competencies will be analyzed in order to discover the internal determinant of EO. This study will also examine how EO affects the innovation adoption of tea manufacturing firms. Thus this study will propose the integrated model to analyze the factors promoting competitiveness by concerning external relationships, entrepreneurial competencies, EO and innovation.

This dissertation consists of eight chapters; the first chapter is introduction. This chapter discusses the overall background of the study. The discussion started by explaining present situation and potential of developing Sri Lankan tea sector. This chapter mentions the general concepts of EO and how EO is crucial for firms to prosper in competitive environment by enhancing innovation. Further, analytical framework and objectives of the study is mentioned in the latter part of the chapter.

To understand the object and area of the study, chapter two describes the conditions of tea industry in Sri Lanka. This study was conducted in the low grown areas of tea where it contributes more than 60% to the national production of tea. This chapter also explains the role of tea industry in the Sri Lankan economy, profile of low grown teas and challenges faced by tea industry. Chapter three describes the profile of tea manufacturing firms and background characteristics of owner/manager in studied sample and descriptive statistics of key variables which are using for further analysis.

As external determinant of EO, the role of external relationships in enhancing EO of tea manufacturing firms was examined in chapter four. The results indicated that external relationships, specifically relationship with supply chain partners and relationship with government facilitating institutions are positively influenced on EO. But, relationships with other tea factories (OTF) and education and research institutions are not significantly influenced since, relationships among firms are depending on the cost and benefits perceived by the firm. Further, findings of entrepreneurial infrastructure implied that benefits received from tea broker companies and government facilitating institutions more likely to have positive relationship with EO. Whereas facilities received from education and research institutions less likely to have significantly correlate with EO. Therefore, policy makers of external institutions should consider about the fundamentals of entrepreneurship when they designing entrepreneurial infrastructure. Findings indicated that among dimensions of EO risk taking behavior of the firm is highly influenced by external relationships than innovativeness and proactiveness. Therefore, well-organized external relationships facilitate to find an optimum solution under the turbulent environment by enhancing firms' EO since by having external relationships, tea manufacturing firms would able to utilize knowledge, physical and emotional resources available outside the firm.

Chapter five analyzes the role of owner/manager's entrepreneurial competencies in improving EO of tea manufacturing firms as internal determinant of EO. This study considered six competency areas; opportunity, organizing, strategic, relationship, commitment, and conceptual competencies. The results revealed that background characteristics of owner/manager, especially training and other business experience positively influenced on entrepreneurial competencies. Further, it is emphasized that owner of tea factories having higher level of competencies than managers. However, background characteristics of owner/managers do not directly influence on EO of the firm. Entrepreneurial competencies are playing critical role in mitigating the challenges arising in business environment. The findings revealed that EO of the firm improved by strategic and commitment competencies of owner/manager. Among dimensions of EO, innovativeness is positively affected by organizing and strategic competencies while, proactive behavior of the firm increased by conceptual and

commitment competencies. Firm's risk taking behavior is positively affected by commitment competency of owner/manager. Accordingly, innovativeness is highly and risk taking behavior is less likely affected by owner/manager's competencies. It can be concluded that owner/managers competencies are highly influenced on successful business strategies which are leading for competitiveness of tea manufacturing firms. Therefore, it is important to enhance the owner/managers competencies to achieve sustainable competitive advantage.

Chapter six examined how EO of firm influences the different types of innovations adopted by tea manufacturing firms. The results imply that market innovation adoptions of Sri Lankan tea manufacturing firms are very low comparing to process and product innovation adoptions. Factors promoting innovation adoption revealed that buyers information as demand factor has more tendencies to enhance the innovation adoption while research and development activities as supply factor is comparatively less significantly increased the innovation adoption of tea manufacturing firms. This study revealed that as dimension of EO, firm's innovativeness is positively affected on product process and market innovation while proactive behavior is enhanced the process and market innovation. However, risk taking behavior is not significantly affected on innovation adoption since tea manufacturing firms tend to adopt innovation than innovation generation. It is evident that innovativeness and proactiveness as dimensions of EO enhance the different types of innovations adopted by tea manufacturing firms in Sri Lanka. That means it is important to enhance EO strategies which are leading for innovation to be competitive in the global market.

For completing the explanation regarding the factors promoting competitiveness in tea manufacturing firms, chapter seven described how the identified theory has been implemented in the practice by using six selected leading tea manufacturing firms. The study revealed that tea manufacturing firms are highlighting two main strategies as quality and quantity to gain the competitive advantage of their firms. Additionally, presence of entrepreneurial parents is also influenced on the firm's business strategies. Thereby all cases confirm that external relationships, owner/managers competencies, EO and innovation are facilitate to improve competitiveness of tea manufacturing firms. Therefore, this study gives the fact that tea manufacturing firms which have better external relationship, competent owner/manager, and good entrepreneurial strategies tend to adopted more innovations and in this manner are competitive in the market.

From this study, it can be concluded that in order to face the market competitiveness as well as contribute substantially to the Sri Lankan economy, it is crucial for the tea manufacturing firms to adopt different types of innovations. It is evident that adopting innovative strategies, depending on the firm's EO and owner/manager competencies and having better external relationships. Therefore, this study confirms that the reasonability of the proposed approach. It means, external relationships, entrepreneurial competencies, EO, and innovation have been confirmed in this study as factors promoting competitiveness of tea manufacturing firms.

This study has three principal theoretical contributions. First, this study proposed alternative integrated approach to improve the competitiveness by enhancing EO and innovation of tea manufacturing firms in Sri Lanka under developing economic context. Second, this research provides empirical evidence to examine identified relationships in the real business practice. Finally, this study is strengthening the existing knowledge related to entrepreneurship specially related to the tea industry. Therefore, such contributions are important for managers and policy makers to enhance the innovation through better business strategies in order to face competitiveness in the market.

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List of Abbreviations

CEO	Chief Executive Officer
CIS	Commonwealth of Independent States
COP	Cost of Production
CQC	Ceylon Quality Certification
CTC	Cut Tear and Curl
EFC	Employers Federation Council
EO	Entrepreneurial Orientation
FAO	Food and Agriculture Organization
FOB	Fright on Board
GDP	Gross Domestic Product
GL	Green Leaf
GMP	Good Manufacturing Practice
HACCP	Hazard Analysis Critical Control Point
NIPM	National Institute of Plantation Management
NSA	Net Sale Average
OTF	Other Tea Factories
RCA	Revealed Comparative Advantage
RPC	Regional Plantation Companies
SLS	Sri Lanka Standards
SLSPC	Sri Lanka State Plantation Corporation
TB	Tea Board
TFP	Total Factor Productivity
TSHDA	Tea Small Holding Development Authority
TRI	Tea Research Institute
UAE	United Arab Emirates
UK	United Kingdom
VP	Vegetative Propagated

Chapter 1

Introduction

1.1 Tea industry in Sri Lanka

Tea industry is considered as the foremost agribusiness sector in Sri Lankan economy more than a century. It contributes 1% to the GDP in 2012 since agriculture sector contribution of GDP decline with the time. Tea industry serves as the main source of employer and directly and indirectly employs around 10% of the Sri Lankan population. This solves the huge employment issues in the country. Tea industry generates more than US \$ 1,000 million annually from year 2008. It contributes nearly 15% of the country's earnings from exports. Figure 1.1 illustrates the country's export earnings contribution of major sectors and tea industry. It implies that tea industry is an important source of export revenue of the country as third largest tea exporter in the world.

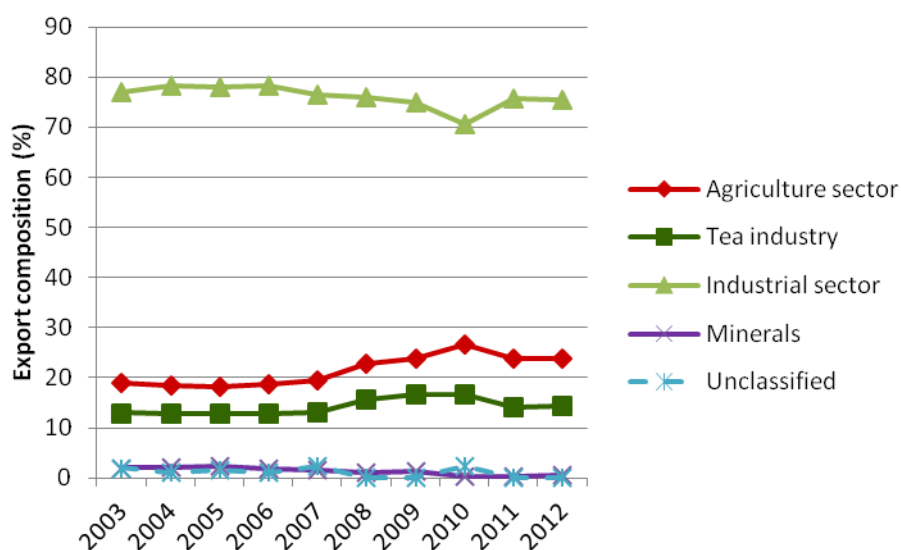


Figure 1.1 Export earning composition of major sectors

Source: Central Bank of Sri Lanka

Based on the elevation of tea growing areas, Sri Lankan tea is classified into up country, mid country and low country teas. Factories that manufacture made tea have to be registered with the Sri Lanka Tea Board and totally 714 tea factories are in operation by 2013. Figure 1.2 shows the elevation wise tea factory distribution in recent years. Accordingly number of tea factories in high and mid elevation decline and tea factories in low elevation increased due to availability of green leaves. Since, up and mid elevation has relatively old tea lands having low yield potential. At present, large plantations and small private estates mainly exist in up and mid elevation area while small holders are dominant in low elevation. Based on ownership structure, tea factories are categorized as private sector, corporate management sector (Regional Plantation Companies) and state sector and respectively they contributed for national tea production as 61%, 37% and 2% in 2012. The principal production method in Sri Lankan tea factories is orthodox production, which accounts for more than 90% of the total production, whereas cut, tear, and curl (CTC) and green tea account for 7% and 1%, respectively. Additionally, instant tea and bio tea production accounts for less than 1%.

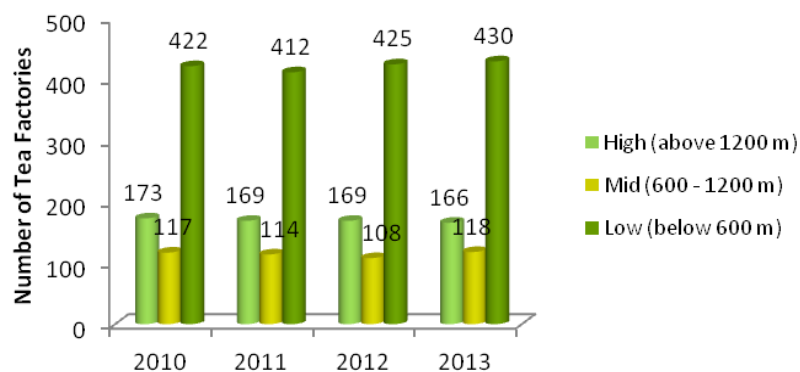


Figure 1.2 Tea factory distributions in different elevations

Source: Sir Lanka Tea Board

More than 90% of the tea produced in Sri Lanka goes to the export market and more than 50% of tea exports are still in the form of traditional bulk tea, while value-added tea such as tea packets, tea bags and instant tea accounting for approximately 40% of total tea exports. The Colombo Tea Auction is the main marketing channel use by tea manufacturers and accounted for more than 95% of total tea sales in 2012. Private sales (3.7%) and direct sales (approximately 1.1%) are other marketing channels used by tea manufacturers. Sri Lanka is the one and only tea exporting country that firmly adheres to ISO 3720 standards (minimum product quality) for each kilogram of tea exported. Additionally, demand for the “Food Factory Concept” and certification systems such as HACCP, ISO 22000, and ISO 9001:2000 among others are increasing (Sri Lanka Tea Board 2012). To meet this demand, factory modernization or process automation is imperative.

As many other developing countries, Sri Lankan government support to tea industry through several institutions namely; Tea Research Institute (TRI), the National Institute of Plantation Management (NIPM), the Tea Small Holding Development Authority (TSHDA), and the Tea Board (TB). Respectively they are responsible for generating and transferring technology and knowledge, conducting formal training programs, improving quality of green leaf and responsible for hygienic tea production.

Sri Lanka recorded the 4th highest production in globally and has a production share of 6.9% in the international sphere. As one of the world’s leading exporter it contributed 16.6% of the global demand of tea in 2013. Major markets for Sri Lankan tea can be found in Russia, Iran and Syria. Further, UAE, Turkey, Saudi Arabia, Egypt and Japan are also major importers of Sri Lankan tea. As one of the leading tea exporting countries in the world, Sri Lanka produces and exports the largest quantity of Orthodox tea of any country (International Tea Committee, 2013).

Global tea consumption has been rapidly increasing as it is a major beverage in different parts of the world (Figure 1.3). Growth has been stimulated with an increase demand in China due to higher per capita income level. However, when considering the global tea production and consumption, gap is becoming wider in recent years as illustrates in Figure 1.3. Further, international tea market is highly competitive as world tea exports grew nearly 20% over last decade from 1397.8 million kg in 2001 to 1750.1 million kg in 2011 (Sri Lanka Tea Board, 2012).

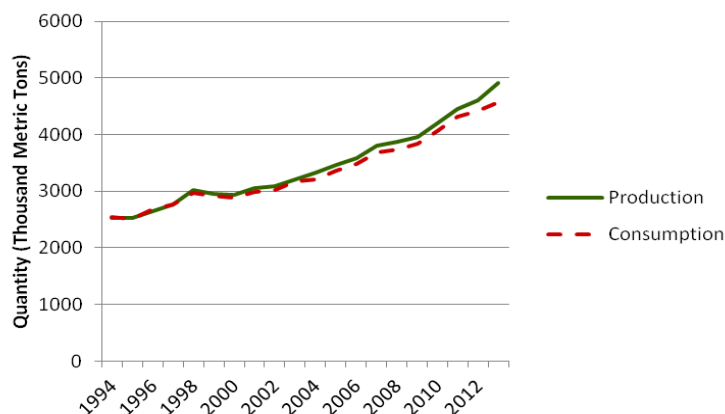


Figure 1.3 Global tea production and consumption

One of the reasons for high competition in global market is the presence of low cost producers such as Kenya and Turkey. It is obvious that some of the Asian countries such as China and India also playing a major role in the market in terms of lower prices due to low production cost and higher efficiency. The unstable economic condition in the Middle East and Europe and movement in exchange rates will play a major role in the global market in terms of pricing the product. Because tea industry has been highly dependent upon the external markets for its viability and profitability Therefore it is essential to be competitive to secure the export share in global market.

During the 1990s, Sri Lanka had market share of 23% in the global market. But at present, Sri Lanka's competitive state in the global tea arena has been slipping due to competitive pressure in the global market and several internal supply issues. Sri Lanka has become the highest-cost producer among the leading tea exporter countries while on average cost of production is US \$ 2.33 per kg of made tea. Therefore, Sri Lanka is facing a high degree of competition from newly emerging low-cost producer countries. Additionally, the Sri Lankan tea industry is experiencing productivity deficiencies at both the factory and field levels (Mohamed and Zoysa, 2006). Further, persistent focus on Orthodox and bulk teas could affect the country's competitive position, since global demand patterns for tea are gradually switching towards more convenient forms. More than 90% of total tea consumption in developed countries is for teabags, and demand for retail packets also high in Middle East countries (Maligaspe, 1998). Further, Fonseka (1997) has shown that firms focused on highly competitive markets tend to supply tea under their own brand names. Therefore, innovation is essential to sustain the competitive position of Sri Lankan tea in the global market (Herath and De Silva, 2011). Consequently, it is vital to identify the innovations of tea manufacturing firms and the influence of a firm's entrepreneurial orientation (EO) on its innovation.

1.1.1 Potential of developing Sri Lankan Tea Sector

Sri Lanka has implemented major economic policy reforms in 1978 and 1989 while it includes following aspects; The private sector was given a greater role in economic development, trade was also liberalized and export promotion and diversification were encouraged. Study conducted to identify the impact of policy reform by using growth accounting approach revealed that such policy reform is favorable for overall agricultural

development even it is negatively impacted on domestic food sector. Since the revenue from the export earnings compensate the negative impact of domestic agriculture sector. Further, it implied that fertilizer price change due to policy adjustment has a great impact on agricultural production and it was negatively affected on domestic food production. Food imports open under policy reform make considerable impact on domestic food production thus creating an outward migration of agricultural labour (Yamaguchi and Sanker, 2004). According to Kumar et al. (2008) the agricultural growth in Sri Lanka was the lowest among the South Asian countries and experienced negative or stagnated Total factor productivity (TFP) growth. While, TFP is defined as the ratio of an index of aggregate output to an index of aggregate input. Therefore, some important policy reorientation were done related to agriculture sector, they are opening of the seed multiplication and distribution section to the private sector, restructuring farmer organizations, introduction of reforms in Agrarian Service Act thereby provide wider crop choice, divesting several government agencies and scaling down government involvement. These new indicatives may act as the source of TFP growth in Sri Lanka (Kumar et al., 2008).

Based on global competitiveness index Sri Lanka is rating at 65th position (score 4.2 from 1 -7 scale) among 148 countries in 2013. This index provides broader image about the country's productivity level and it is calculated by considering 12 pillars, they are; institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, goods market efficiency, labour market efficiency, financial market development, technological readiness, market size, business sophistication and innovation (World Economic Forum, 2013). Accordingly at present Sri Lanka is in transition from factor driven economies to efficiency driven nations.

Tea cultivation was begun as large plantations but land redistribution programs implemented by the government after land reform has caused to increase the number of tea small holders in the country (Ganewatta and Edwards, 2000). Labour cost remains the dominant expense in growing tea, so small growers have become the low-cost model of production. Further, government programs and price effects that reduced revenue uncertainty and relative costs of production have allowed small farmers to significantly increase their share of total production in Sri Lanka (Herath and Weersink, 2007).

Research conducted in tea small holdings in mid grown areas of wet zone revealed that technical efficiency of small holding sector given by Cobb-Douglas model (stochastic frontier estimation) is 63.10 percent. That implies there is scope of further increasing the production of green leaves by 39.90% without increasing the level of inputs. From the factors considered which affect technical efficiency, age of farmer, experience, education level, full time involvement, and use of VP tea were significantly influenced (Basnayake and Gunaratne, 2002). It reveals that there is a possibility of enhance the productivity of tea land by improving entrepreneurial behavior of farmers.

Athukorala (1991) viewed that growth of agricultural exports from developing countries depend predominantly on the world market factors over which they have no control. Therefore, external demand plays an important role and country can expand its exports under given world market conditions by diversifying into new export lines. Ganewatta et al. (2005) found that value-added tea export supply of Sri Lanka is moderately responsive to relative price. That means increase the value-added tea price in world market relative to bulk tea increase the export supply of value-added tea. Thereby policies that enhance the ability to expand the number of varieties of the product would help to increase Sri Lanka's export share in the world market. At present, TRI research studies on tea manufacturing are mainly focus on energy conservation, health benefits of tea and

automation of production process towards establishing food factory concept (Mohamed and Zoysa, 2006). Further, Sri Lankan government has signed several trade agreements to enhance the global trade. Constant market share analysis of Sri Lanka's tea in Indian market reveals that Sri Lanka's tea is not competitive in India with existing low prices in India less than the price of Sri Lanka (Abeywickrama and Rangi, 2004). Therefore, within the framework of Indo-Sri Lanka Free Trade Agreement, it is better to export low price average quality tea for domestic consumption of India.

Additional, the productivity measurement study conducted in Indian tea factory by using productivity accounting model revealed that total factor productivity in 2007 was 1.60 (Monetary value of production / Monetary of all inputs required for production). Accordingly three major inputs namely; labour, material, and energy which from 85% to 92% of the total inputs. Further it identified poor utilization of labour, material and energy responsible for measured total productivity decline in the tea industry. Therefore they suggested following measures to improve the productivity under the existing state of technology; redesigning job rolls, implementing measures to cut down the material cost by shift to organic fertilizer, purchasing green leaf from outside etc. and re-engineering the production plant activities (Gupta and Dey, 2010). This implies that it is possible to improve the performance of tea factories by enhancing EO of the firm.

At present, Sri Lankan tea manufacturing firms are facing challenges in meeting profit targets due to number of reasons like increasing labor wage, interference from trade unions, competition from other countries and lack of support from the government. Sri Lankan tea manufacturing firms facing difficulties to be remain competitive in the current global environment. A theoretical framework needs to be developed which can be used to enhance the competitive edge of tea manufacturing firms. This can be done by identifying entrepreneurial orientation strategies which help organization to remain successful in the global environment since entrepreneurial orientation (EO) reflects the firm's innovativeness, proactiveness and risk taking behaviors, which are predominant factors in mitigating the challenges arising from competitive market of tea. Further, the theoretical model will help in creating a framework that can understand the external and internal factors that influence the development of the Sri Lankan tea manufacturing firms. Thereby this research is intent to propose suitable solutions to assist the tea manufacturing firms to survive and keep the tea industry alive in Sri Lanka.

1.2 General Concepts of Entrepreneurial Orientation

1.2.1 Definition of Entrepreneurial Orientation

Entrepreneurial activity has long been considered as significant factor for socioeconomic development due to creation of wealth and employment. EO is frequently used concept to explain entrepreneurship or entrepreneurial activities as an organizational-level phenomenon. At present, EO has become an important concept within the entrepreneurship studies. Generally, EO refers to the decision making process which provides firms with entrepreneurial activities and strategies. This concept captures the processes, method and style that help firms to enter new or established markets with new or existing good or service (Lumpkin and Dess, 1996).

The roots of EO concept can be traced back to the work of Mitzberg (1973). In theorizing about strategic decision-making, he conceived of an entrepreneurial strategy-making mode (see Table 1.1). Miller (1983) suggested that entrepreneurial firms is one that "engages in product, market innovation, undertake somewhat

risky ventures, and first to come up with ‘proactive’ innovations, beating competitors to the punch”. Further he argued that conservative firms are those in which the style of top-management is characterized by risk avoidance, absence of innovations, passiveness and imitation of competitor’s actions instead of being first in the industry. Based on prior literature and Miller’s definition, numerous scholars have adopted conceptualization of EO with three dimensions as innovativeness, risk taking and proactiveness (Rauch, et al. 2009).

Table 1.1 Selected past definition of Entrepreneurial Orientation

Definition of EO	Authors
“In the entrepreneurial mode, strategy-making is dominated by the active search for new opportunities” as well as “dramatic leaps forward in the face of uncertainty”.	Mintzberg (1973)
“The entrepreneurial model applies to firm that innovate boldly and regularly while taking considerable risks in their product-market strategies”.	Miller and Friesen (1982)
“An entrepreneurial firm is one that engages in product-market innovation, undertakes somewhat risky ventures, and is to come up with ‘proactive’ innovations, beating competitors to the punch”	Miller (1983)
“An entrepreneurial firm is one with decision making norms that emphasize proactive, innovative strategies that contain an element risk”	Morris and Paul (1987)
“Entrepreneurial firms are those in which the top managers have entrepreneurial management styles, as evidence by the firm’s strategic decisions and operating management philosophies. Non-entrepreneurial or conservative firms are those in which the top management style is decidedly risk-averse, non-innovative, and passive or reactive”	Covin and Slevin (1989)
“EO refers to the processes, practices, and decision-making activities that lead to new entry” as characterized by one, or more of the following dimensions: “a propensity to act autonomously, a willingness to innovate and take-risk, and a tendency to be aggressive towards competitors and proactive relative to marketplace opportunities”.	Lumpkin and Dess (1996)
EO is “the sum total of a firm’s radical innovation, proactive strategic action, and risk taking activities that are manifested in support of projects with uncertain outcomes”	Zahra and Neubaum (1998)
“EO constitutes an organizational phenomenon that reflects a managerial capability by which firms embark on proactive and aggressive initiatives to alter the competitive scene to their advantage”	Avlonitis and Salavou (2007)
“EO refers to the strategy making processes that provide organizations with basis for entrepreneurial decisions and actions”.	Rauch, Wirklund, Lumpkin, and Frese (2009)
“An EO is conceptualized as s set of distinct but related behaviors that have the qualities of innovativeness, proactiveness, competitive aggressiveness, risk taking, and autonomy”	Pearce, Fritz, and Davis (2010)

Source: Based on Covin and Wales, 2012 and added by author

Covin and Slevin (1989) studied the firm's behavior with related to EO in different environments. They studied the performance of entrepreneurial firms in hostile environments and found that being in hostile environment, firms become more entrepreneurial oriented in order to achieve higher performance. Lumpkin and Dess (1996) added two additional dimensions to EO they are; "autonomy" and "competitive aggressiveness". They define EO as the process, practice and decision-making styles that lead to the new result and are characterized by the existence of some components, such as autonomy, innovativeness, risk taking, proactiveness and competitive aggressiveness. Further, Lumpkin and Dess (1996) argued that a firm, in order to be entrepreneurial, may not have all the dimensions at the same time and that dimensions can vary independently.

At present, there are many different definitions of EO (see Table 1.1), some of them are shortened and others are extended compared to the classical definition with three dimensions. The example of shortened definition is Avlonitis and Salavou (2007), they describe EO as an organizational phenomenon that reflects managerial capability with the help of which firms start proactive and aggressive in order to change the competition in their advantage. The extended definition is for example, that provided by Lumpkin and Dess (1996) with five dimensions of EO. Several researchers have agreed that EO is a combination of the three dimensions; innovativeness, proactiveness and risk taking. Thus, EO describes a willingness to innovate to revitalize market offerings, take risk to try out new and uncertain products, services, and markets and be more proactive than competitors towards new market place opportunities (e. g. Covin and Slevin, 1989; Knight, 1997; Miller, 1983; Zahra and Covin, 1995).

The selection of definition by researchers depends on the objectives of the study. If it is planned to study the whole integrated concept of EO, the classical definition with three dimensions is frequently used. This study used the classical definition proposed by Covin and Slevin (1989), in which EO has the dimensions of innovativeness, proactiveness and risk taking. These three dimensions explain the core of EO to full extent, and it is very important to consider that all these sides of the construct when conducting empirical research.

1.2.1.1 Dimensions of Entrepreneurial Orientation

This study concerns three dimensions of EO (innovativeness, risk taking and proactiveness), as suggested by Miller (1983) and adopted by several other studies.

- Innovativeness can be defined as the firm's tendency to engage in new idea generation, experimentation, and research and development activities resulting in new products and process (Lumpkin and Dess, 1996). Innovativeness explains the firm's willingness to depart from existing practices and technologies, and open its organizational culture to new ideas and combinations. Without innovation, organizations would have to rely on traditional ways of doing business; traditional product / service, traditional distribution channels etc.
- Firms with an EO typically display risk taking behavior, illustrated by large resource commitments to high-risk and high-return business. The risk taking dimension of EO is a firm's propensity to take business related chance with regard to strategic actions in face of uncertainty (Miller, 1983). The range of firm's risk taking behavior differs from nominal level-"safe" risks, which include money deposit in bank to highly risky actions, such as borrowing big sum of money, investing in new products for the new markets (Lumpkin and Dess, 1996).

- Firm's propensity to take the initiative to compete assertively with other firms is defined as proactiveness (Covin and Slevin, 1989). It means firm's approach to market opportunities and first mover actions such as introduction of new products / services ahead of competitors (Lumpkin and Dess, 1996). Proactiveness is crucial organizational process and it refers to the firm's ability to predict future consumer problems and needs and to make necessary modifications ahead competitors. Proactiveness involves forward-looking perspectives and new opportunities which are accompanied by innovative activities, therefore proactive firm is considering as a leader rather than a follower (Lumpkin and Dess, 1996).

Lumpkin and Dess (1996) have added two additional dimensions – autonomy and competitiveness in addition to three dimensions of EO concept as described above. Autonomy explains firm's independence, freedom and self-direction which are needed to develop new ideas and opportunities. It means autonomous actions executed by individuals or teams to bring forward idea and carry them through to completion. Competitive aggressiveness defines as firm's tendency to do better than its competitors in the marketplace and is more often referred to new firms which have a tendency to behave more aggressively in order to gain the market share or improve situation (Lumpkin and Dess, 1996).

The concept of EO is the entrepreneurship defined at firm level, while it explain the mindset of firms engaged in pursuing new ventures provides framework for researching entrepreneurial activity (Lumpkin and Dess, 1996). EO has mostly concerned under developed economic conditions therefore, it's important to investigate whether these concepts are also applicable for developing economic context.

1.2.2 Importance of entrepreneurial orientation

Many scholars argue that entrepreneurial behavior is crucial for firms to prosper in competitive environment (e. g. Miller, 1983; Lumpkin and Dess, 1996) and economic prosperity of the nation. With entrepreneurial behavior firms looking for innovative and flexible means to make use of opportunities and accomplish desired objectives. EO stands for key entrepreneurial processes that answer the question of how business is undertaken. In this manner, EO contributes to higher performance by facilitating a firm's to identify innovative opportunities with potentially large returns and obtain first mover advantage (Lumpkin and Dess, 1996). EO is closely related to strategic management and the strategic decision making process since it is a firm-level construct (Naman and Slevin, 1993). It is grounded in strategic choice point of view and considers the "intension and actions of key players functioning in a dynamic generative process" (Lumpkin and Dess, 1996: pg 136). Firms can innovate more in their products when they adopt a strategic orientation that center on their markets. Further, firms that center on stakeholder or technology become more proactive in their competitive choice than rivals (Aloulou and Fayolle, 2005). Thereby, entrepreneurial organizations try to obtain competitive advantage by consistently making innovations and taking challenging risk (Miller and Friesen, 1982).

When concerning the individual dimensions of EO, previous studies have shown that each dimension has tendency of positive influence on performance. Innovative firms can create unexpected economic performance by producing new products and technologies (Wiklund and Shepherd, 2005). Proactive firms as market leaders, target finest market segments, charge high price and "skim" the market ahead of rival firms (Zahra and Covin, 1995). They try to dominate the market by establishing brand recognition. The relationship between risk taking

behavior and performance is less obvious. However some studies have shown that risky strategies leading for performance variation since some projects fail while others succeed and may be more profitable in long term (McGrath, 2001).

Therefore, it is important to strengthen the EO of any industry to respond the globalization and changing environment. To face the increasing competition experiencing by Sri Lankan tea industry, tea manufacturing firms must review practices and actively search for new ways to increase its capacity of innovations and be more competitive. Drucker (2002) argues that today's enterprises will not even survive with this rapid change unless they do not maintain entrepreneurial proficiency.

1.2.3 Determinants of entrepreneurial orientation

The level of entrepreneurship within a firm is related with characteristics such as environment, structure, strategy, and strategic leadership. There are several factors constitute EO and propose that it is a strategic orientation for the creation of competitive advantage through combining new resources and seizing business opportunities (Aloulou and Fayolle, 2005) as shown in Figure 1.4. These factors are related to external and internal environments.

When studying determinants of EO, scholars try to find why some firms are more entrepreneurial than others and the drivers of EO of the firm. All factors of EO examined in empirical research can be categorized in two groups as external and internal factors. Among external determinants of EO, previous studies consider the business environment (Alexandrova, 2004), regulatory institutions (Shirokova and Sokolova, 2013) and other factors that affect the level of EO. Further as external environment some studies consider the characteristics such as environmental dynamism, hostility, heterogeneity and abundance (Miller and Friesen, 1982; Aloulou and Fayolle, 2005). The effectiveness and level of EO depends on the firms internal resources other than the external environment, in which firm is operate. Aloulou and Fayolle (2005) had identified organizational structure, competencies of CEO, firm's resources and capabilities, and mission strategy as internal factors. Firm's entrepreneurial behavior is an outcome of variety of environmental factors as well as founder's capabilities. Therefore, this study concerns the external institutions related to tea industry as external factors and owner/managers competencies as internal factors which influence on EO. Normally firms adopt actions and strategies according to the external business environment and owner/managers capabilities.

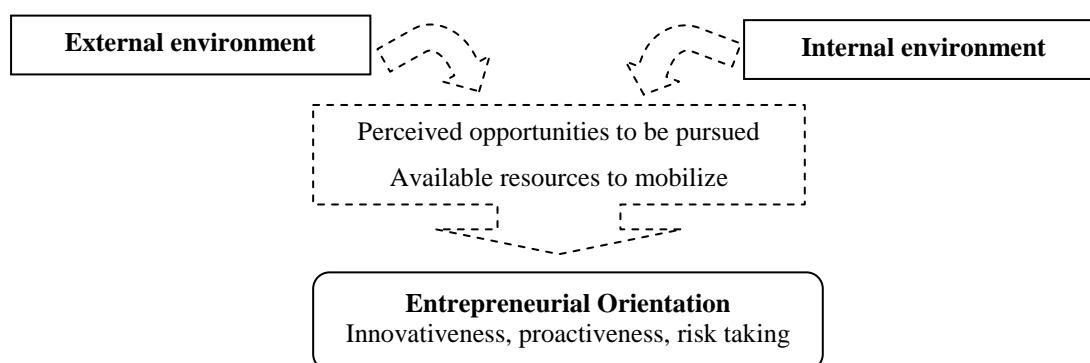


Figure 1.4 Determinants of entrepreneurial orientation (Source: Adapted from Aloulou and Fayolle, 2005)

1.2.3.1 External determinant of entrepreneurial orientation

Entrepreneurial behavior of firm enhances by opportunities and they are rooted in the external environment. From the single firm perspective, a network includes a set of relationships with various institutions including buyers, suppliers, competitors, government institutions and research institutions etc. Social capital is defined as actual and potential resources available to firm through its network of relationship and identify three dimensions as structural, relational and cognitive (Nahapiet and Ghoshal, 1998). This study concerns the relational dimension of social capital. The relational dimension refers to direct relationship of the entrepreneurs (Tsai and Ghoshal, 1998). The social capital that is embedded in external relationships can be considered such a resource, that is unique for each firm. Social capital theory implies that a firm's external relationships form a key contributor to its performance (Leenders and Gabbay, 1999).

External relationships are vital to find out opportunities, testing new ideas and gather resources for business process. Entrepreneurs may benefit from building strong relationship with external parties (Kotabe and Swan, 1995). By building relationships firm would be able to connect own resources to those of other firms. On buyer side, relationships are important means of learning buyer's needs in order to develop marketable offerings. On supplier side, relationships are essential to ensure timely and quality inputs. Since firms having strong relationship with suppliers and other partners in order to acquire external resources to produce product/service at competitive prices, adjusted for quality such they can attract and retain customers (Burt, 1992). Gumusluoglu and Ilsev (2009) findings reveal that technical and financial support received from external institutions can be key contextual influence in improving innovation. Therefore, external relationships supposed to be essential since they open up entrepreneurial possibilities providing access to useful, reliable, exclusive, less redundant information (Bruéderl and Preisendoerfer, 1998). Further, external relationship facilitates to overcome some constraints that faced by entrepreneurs, by enhancing the accessibility of knowledge and resources outside the firm. This network of resources and information offers rich source of explicit and implicit knowledge, experience and privilege access to physical resources which essential for entrepreneurial behavior (Anderson and Jack, 2002).

Normally firms tend to develop external relations to obtain the complementary resources. Further, literature suggested that information acquired from the external environment is an important factor of firm's innovation. Further they stated that availability of slack resources enhance the creative performance. Therefore resource acquire from outside can be important for innovation. While, Wiklund and Shepherd (2005) argued that entrepreneurial behaviors requires large quantity of resources, so having access to those resources through external relationships would increase the entrepreneurial behavior of the firm. In the context of this study, we focus on the external relationships, and consider the relationship with both upstream and downstream partners since entrepreneurial behavior of firm may be affected by suppliers, customers, supporting system and government agencies etc. Maintaining quality relationship with right partners enhances the competitive advantage of the firms (Dyer and Singh 1998). External relationships can provide access to information, resources, markets and knowledge and technologies. By this means, firms would be able to enhance their entrepreneurial behavior and able to compete effectively in the market place.

1.2.3.2 Internal determinant of entrepreneurial orientation

Entrepreneur is known as the person behind the successful performance and caliber required to carry on business successfully under competitive environment is called as competencies. Entrepreneurial competencies are obviously related to managerial competencies as augured by Boyatzis (1982). Behavioral approach of entrepreneurial competencies describes competencies as person's behavior and actions which correspond to the characteristics of competitiveness (Man et al., 2002). To be competitive in the highly dynamic environment, entrepreneurs are required to be competent in different areas like intellectual, attitudinal, behavioral, technical, and managerial. Entrepreneurial competencies are defined as fundamental characteristics possessed by a person that result in effective performance of business (Bird, 1995). This study defines entrepreneurial competencies as, attitudinal and behavioral characteristic of owner/manager which enables to accomplish and sustain the business success. Consequently, six competency areas; opportunity, organizing, strategic, relationship, commitment and conceptual competencies were considered as categorized by Man et al. (2002). Those competencies are supposed to play different roles in process of firm's EO.

The task of creating organizational capabilities by gathering and using resources is seen as a function of entrepreneur's roles and behavior (Man et al., 2002). Therefore, entrepreneurs could be able to enhance the firm's competitiveness by appropriate use of competencies as explain in below. Opportunity recognition and exploitation are considered as the focal concept of entrepreneurship (Shane and Venkataraman, 2000). Opportunity competencies facilitate for scan the environment and identify promising opportunities. For example, identify opportunities for innovation and business growth, and provision of new product or service. Organizing competency is related to the management of internal and external resources (Man et al., 2002). In this manner, utilize the available resources efficiently and develop better organizational capabilities such as cost saving ability, quality and flexibility etc. (Man et al., 2008). Strategic competencies lead to be visionary; goal oriented, and set the direction for the firm in order to ensure long-term performance of the firm. Relationship competency helps to interact with environment to acquire and utilize the resources. For example maintain cooperation with external environment, persuasive ability, and communication and interpersonal skills (Man et al., 2002). An entrepreneur also needs to acquire strong commitment competencies which providing the needed drive and initiative to sustain the efforts. As argued by Man et al. (2002) strategic and commitment competencies are vital to set and sustain the long-term goals. Conceptual competency is facilitating for understand the complex issues; thereby enhance the decision making skills (Man et al., 2002).

The process of achieving competitiveness is strongly influenced by the key players or entrepreneurs (Horne et al., 1992). Entrepreneurial competencies are important to catch the innovative business opportunities and formulate strategies for new directions of the business while imagining one or more realistic scenarios for competition (Chandler and Jansen, 1992). Slevin and Covin (1995) suggested that competitiveness of firm is positively influenced by founder who is responsible for business operations. Zahra (1993) argues that capabilities of senior executives' are important background of a firm's EO. Miller and Toulouse (1986b) found that firm's decision making process and strategic orientation is affected by CEO's behavior. According to Miller et al. (1982) there is a positive relation between top executives who believe in the efficacy of their own behavior and firms innovation propensity. Further, Kotey and Meredith (1997) suggested that owner/manager personal values influence the strategies they adopt in their business and eventually the performance of their business.

Resource base theory of firm implies that capabilities of managers are highly related with the value creation process of firm in acquiring and developing resources (Grant, 1991). Entrepreneur's role become dominant and founding in the business development process (Daily et al., 2002) and entrepreneurial competencies are seen as important to business growth and success. Further, Miller (1983) explained that owner/managers competencies facilitate to succeed difficultly for successful realization of firm's business strategies. Therefore, entrepreneurial competencies are important to meet the arising challengers in tea industry and this study concerns the influence of entrepreneurial competencies on EO of the firm.

1.2.4 Entrepreneurial Orientation and Innovation

Innovation is an essential component for sustained the success of business firm and it protects both tangible and intangible assets against the erosion of market. As literature argues, innovation is now unavoidable for firms which want to develop and maintain the competitive advantage. Innovation is the generation or acceptance of ideas, process, product or service that related adopting firm perceives as new (Garcia and Calantone, 2002). Further, Hult et al. (2004) defines innovation as the capacity to introduce of some new process, product or idea in the firm. It can be new to either the firm or the firm's customers. The degree of newness can be used to distinguish the generation of innovation from its adoption (Damanpour and Wischnevsky 2006). Operational definition of innovation concern in this study is developing new product, process, or market or slight improvement of existing product, process, or market.

Firm's entrepreneurial behavior and attitudes are necessary for prosper in competitive environments (Covin and Slevin, 1989; Lumpkin and Dess, 1996). An EO refers to the procedures, practices and decision-making activities that guide to new entry. These include such processes as adopting new technologies, willing to introduce new products, utilizing market opportunities and having a tendency to undertake risky ventures (Covin and Slevin, 1989). Furthermore, entrepreneurship interacts with other organizational factors to perform successfully (Hult et al., 2004). Studies have found that those businesses that adopt a more EO perform better (Zahra and Covin, 1995). Successful firm demonstrated more adaptability, and higher level of innovation and entrepreneurial behavior under unstable conditions than their less successful counterparts in the same industry. (Miller and Friesen, 1983). Additionally, Tajeddini (2010) found that higher level of EO and innovation are associated with improved business performance. Therefore, Hult et al. (2004) argued that EO as incremental process within the firm through which innovation results. Further to this, Zhou et al. (2005) found that EO positively affects breakthrough innovations which facilitates for both technology and market base innovations.

In the contemporary business environment, future profit streams are uncertain and firms needs to constantly look for new opportunities in the market and maintain their competitive advantage. Therefore, one of the challenge faces in today's business is to remain constantly innovative since capacity of firms innovation is a crucial factor to succeed in the business. Firms would able to enhance the innovation by incorporating EO strategies. EO facilitate to commercialize ideas into new products and services, be engage in risky projects, apply forward-looking perceptions and search new business opportunities (Rauch et al, 2009). In this manner, innovations keep the firm ahead of their rival firms gaining competitive advantage that directs to enhance financial results. Proactiveness gives firm's ability to present new product/service to the market ahead rival firms, which also give them a competitive advantage (Zahra and Covin, 1995). Study of Salavou and Lioukas

(2003) note that EO leads to initiation of product innovation and radical product innovation with high level of risk.

These characteristics of entrepreneurial firm may be beneficial to Sri Lankan tea industry, as it is facing several challenges. Therefore, tea manufacturing firms may benefit from adopting EO strategies. In this manner tea manufacturing firms would be able to enhance the innovation adoption which is fundamental of gaining competitive advantage. Innovation adopting organizations mainly grab opportunities to improve product, service, and technologies available in the marketplace, exploiting their current knowledge, systems and resources (Damanpour and Wischnevsky 2006). For example, at present, Sri Lanka experiencing highest cost of production, therefore it is imperative to adopt technological innovations such as process automation and energy saving technologies to cut down the labour and energy cost in long run. Since, technological innovations lead for maximum utilization of production factors and long term performance. Propensity of developing and adopting innovation is increasingly imperative for tea manufacturing firms to survive in competitive global market.

1.2.5 Conditions for Competitiveness

According to previous literature, several factors influence firms performance to different extent (Chandler and Hanks, 1993). Competitiveness is the concept often related to long-term performance of firms and economies (Man et al., 2002). It is a relative concept and it concerned how firm is competitive compare to rest of the industry (Porter, 1990). Improving firm competitiveness not only benefits the firm itself, also direct impact on the competitiveness of an industry (Sirikrai and Tang, 2006). Firm level competitiveness indicates a firm's ability to design, produce and market products superior to those offered by competitors. Therefore, firm level competitiveness is generally understood by reference to the ability of a firm to increase in size, market share and profitability. In traditional economic theory, a firm level competitiveness is determined by comparative cost of production. On the other hand, recent studies have pointed out non-price underlying determinants of competitiveness. They include;

- Human resource endowments such as skills and worker motivation.
- Technical factors such as research and development capabilities, and the ability to adopt and use technologies.
- Managerial and organizational factors, both internal to the firm and external relationships with other parties such as suppliers, public and private research institutes and other firms (Clark and Guy, 2010).

Accordingly Porter's diamond model can be used to understand the firm level conditions for promote the competitiveness. He argued that nation's success in a particular industry is driven by four interrelated determinants namely; factor conditions, demand conditions, firm's strategy, structure and rivalry, and related supporting institutions.

Factor conditions include the production factors necessary to compete in a given industry such as; human resource, physical resources, knowledge resource, capital resource and infrastructure. Demand conditions are the pressures based on buyer's requirements about quality, price in a particular industry. Demand conditions make the direction of innovation and product development. Firm's strategy, structure and rivalry refer to the conditions in the nation governing how industries are created, organized and managed, as well as nature of domestic rivalry. 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.

Besides these factors, Porter added two additional elements to his model, namely they are government and chance (exogenous influences). Accordingly, “Chance” and “Government” are two factors that influence the four determinants, but are not determinants themselves. Porter argues that the government acts as a catalyst and challenger to increase the competitive performance by stimulating early demand for advanced products, focusing on special factor creation, and stimulating local rival etc. Chance in the model is random events that can either benefit or harm a firm’s competitive position.

Factors of competitiveness can be acquired from internal and external sources. Internal factors of competitiveness arise from a firm. Characteristics such as human resource, capital, technology and managerial or entrepreneurial behavior can be considered as internal sources. Horne et al. (1992) suggests that process of achieving competitiveness is strongly influenced by the key players. While external factors of competitiveness arise from the industry and environment. Therefore, relationships with customers, suppliers and other kinds of cooperation and networks can be considered as external factors of competitiveness.

Based on above theoretical background this study proposed external relationships, entrepreneurial competencies, EO and innovation as factors promoting competitiveness since as those factors determine the ability of a firm to attain and maintain a competitive advantage of firm as explained above sections.

1.3 Analytical Frame and Research Objectives

The general objective of this study is to explore the EO of tea manufacturing firms. Based on available literature, this study proposes the integrated framework (Figure 1.5) to analyze the determinant and outcomes of entrepreneurial orientation. In this research, examine the external and internal determinant of EO. To examine the external factors of EO, the influence of external relationships on EO will be analyzed and to discover the internal factors of EO, this study examine the relationship between owner/managers entrepreneurial competencies and EO of the firm. This study analyzes the outcome of EO by examining influence of EO on innovation. Further, examine the influence of EO and innovation on enhancing competitiveness of tea manufacturing firms.

This study presents the integrated model as shown in Figure 1.5, to examine the EO of firms by combining external and internal determinant and outcome of EO. This can be considering as the contribution of the study. Further, as a developing nation, studies of entrepreneurship in Sri Lanka still in growing state and this is the first that research analyze the EO of tea manufacturing firms in Sri Lanka.

As per Figure 1.5, the research model shows the linkage among external relationships, entrepreneurial competencies, EO and innovation. In order to survive and sustain the competitiveness under the competitive business environment, innovation is essential since innovation is a fundamental component of business success. This study argues that EO strategies of the firm are facilitating for innovation. Innovativeness of firm depart from existing technologies or practices and go beyond current state of art such as try a new product line or adopt new technologies etc. Risk taking behavior of firm reflects the firm’s interest of obtaining high return by capturing new market opportunities or entering to new markets. Whereas, proactive behavior reflects the firm’s idea of acting anticipation of future demand by capitalizing on a novel market opportunity. In order to foster

innovation, it is important to enhance the EO of the firm. Further, this study simultaneously considered external and internal determinant of EO.

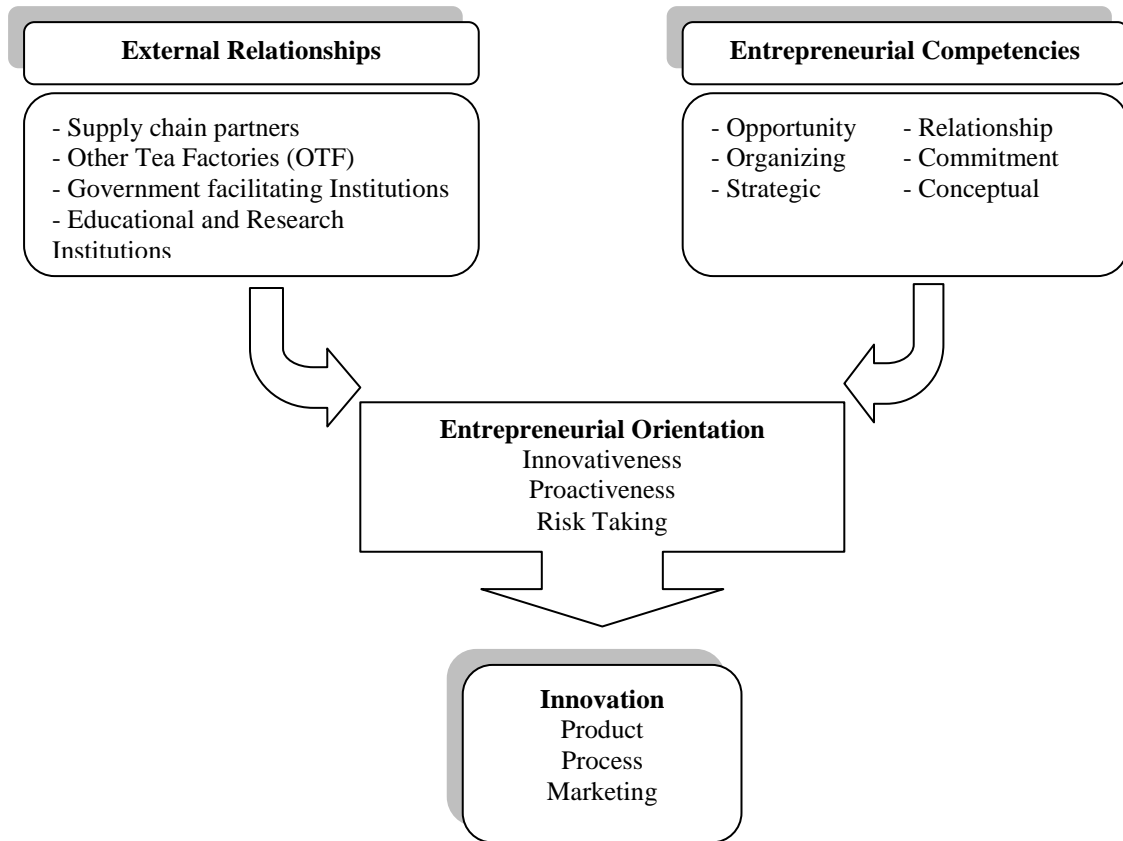


Figure 1.5 Proposed integrated model of the EO of tea manufacturing firms in Sri Lanka

External relationship is considered as external factor which enhancing the EO of the firm. Since external relationships facilitate for identify entrepreneurial opportunities and provide informational, physical and emotional support which required for success the business process. Further, problem of lack of resources faced by the firms can be overcome by developing external relationships. Several studies conducted related to external relationships and EO emphasize that relational capital provide better platform for improve the entrepreneurial behavior of firms. Previous studies emphasized that firms strategic orientation have been influenced by the entrepreneurs behavior. Further, entrepreneurial competencies are defined as individual characteristics that include both attitudes and behaviors enable to achieve and maintain the firm's success. Therefore, this study considered the owner/managers competencies as internal factor which improve the EO of firms.

Based on above explanations, external relationships are considered as external determinant of EO and owner/manager competencies are considered as internal determinant of EO. Therefore, EO itself enhances the innovation and thereby those factors will affect the competitiveness of tea manufacturing firms. In particular, proposed model of this study hypothesizes that tea manufacturing firms can enhance their competitiveness by; establishing better external relationship, enhancing entrepreneurial competencies of owner/manager, being entrepreneurial oriented and being innovative. To sum up above argument, the main objectives of this study attempt to answer following research questions;

1. Is external relationships of tea manufacturing firms an external determinant of entrepreneurial orientation? This research question will be answered by examining the relationship between external relationships and entrepreneurial orientation of tea manufacturing firms.
2. Is entrepreneurial competencies of owner/manager an internal determinant of entrepreneurial orientation? This research question will be addressed by analyzing the relationship between entrepreneurial competencies of owner/manager and entrepreneurial orientation of tea manufacturing firms.
3. Is entrepreneurial orientation facilitating for innovation of tea manufacturing firms? This research question will be solving by examining the influence of entrepreneurial orientation on innovation of tea manufacturing firms.
4. Are external relationships, competencies, entrepreneurial orientation and innovation enhancing the competitiveness of tea manufacturing firms? This research question will be addressed by analyzing the influence of external relationships, competencies, entrepreneurial orientation and innovation on competitiveness of tea manufacturing firms.

1.4 Frame Work of the Study

This study would intend to adopt the following frame work in order to analyze the EO of tea manufacturing firms in Sri Lanka under developing economic context. This thesis contains eight chapters and brief explanation about each chapter is present as follows;

- **Chapter I - Introduction.** This chapter explains the overall background of the study such as tea industry and general concepts of EO. The argument is started by explaining the tea industry background under Sri Lankan context. Then discuss the general concepts of EO as definition, determinant and outcomes of EO. The general objectives and frame work of the study is presented at the end of this chapter.
- **Chapter II – The Sri Lankan Tea Industry.** Chapter II will explain the conditions of tea industry in Sri Lanka, to understand the background and area of the study. This chapter also describes the role of the tea industry in Sri Lankan economy and challenges and issues experiencing the Sri Lankan tea industry at present. Brief profile of tea low grown area also present since this research is conducting in that area. Further, explains the institutional support for tea industry.
- **Chapter III – Research Method and Data Presentation.** First part of the chapter will briefly describe the research approach of the study and study location. Later part of the chapter will devote to describing sample used in the survey and descriptive statistics of key variable which are using for further analysis in chapter four, five and six.
- **Chapter IV – External Relationships and Entrepreneurial Orientation.** This chapter will examine the role of external relationship in enhancing EO, for answer the research question regarding external factors of EO. This chapter will examine the hypothesis that external relationship with institutions related to tea industry and entrepreneurial infrastructure will enhance the EO of tea manufacturing firms. The relationship between variables external relations and EO will be presented in chapter four. Further it explains the role of entrepreneurial infrastructure in the process of EO of the firm.
- **Chapter V – Entrepreneurial Competencies and Entrepreneurial Orientation.** Chapter five will be discussed about the entrepreneurial competencies of owner/manager as the internal factor of EO. This

chapter will examine the relationship among variables similar to previous chapter. Chapter five will explain the effect of owner/manager competencies on implementing EO strategies in the firm. Background characteristics of owner/managers of tea manufacturing firms and their effect on entrepreneurial competencies also assess in this chapter.

- **Chapter VI- Entrepreneurial Orientation and Innovation.** This study intent to find out how EO of the firm influence on the innovation of tea manufacturing firms. This chapter will discuss the different types of innovations adopted by tea manufacturing firms in Sri Lanka. Effect of dimensions of EO on different types of innovation will be assessing in chapter six. Further, examine the relationship between factors promoting innovation adoption and different types of innovation.
- **Chapter VII – A Case study of leading Tea manufacturing firms in low grown Areas.** For completing the explanation regarding determinant and outcomes of EO, proposed integrated model will be used to explain the how external relationships, entrepreneurial competencies, EO and innovation enhancing the competitiveness of tea manufacturing firms. Six success tea manufacturing firms in low grown areas will be used as case studies. Success stories of each tea manufacturing firm will describe based on the integrated model to understand the empirical foundation of the model.
- **Chapter VIII – Conclusion and Implications.** This will be the closing chapter of the study which conclude the explanations of previous chapters and describes the managerial and policy implications of the study.

Chapter 2

The Sri Lankan Tea industry

2.1 Overview of Sri Lankan tea sector

The tea produced in Sri Lanka is popular as “Ceylon Tea” and ranks among the best quality tea in the international trade. The history of Ceylon tea can be traced back over 200 years and tea plantation was firstly introduced by James Taylor in 1867 at Loolkandura Estate in Kandy District in Sri Lanka. Tea is geographically expanded and cultivated in 14 out of 26 administrative districts. Around 3.5% of the total agricultural land in Sri Lanka is devoted to tea. Further it making the single most important crop in wet zone agriculture where plantation crop are confined (Wadasinghe, 1995). The tea grown in Sri Lanka is classified into three different elevation zones: high grown (above 1,200 m), low grown (below 600 m), and mid grown (600–1,200 m). At present, estimated registered tea land in Sri Lanka is 221 969 ha and subsequently 59% is owned by the smallholding sector. Further, 36% is owned by Corporate (Regional plantation companies) and 5% is managed by state sector. Tea cultivation has been scattered mainly in wet zone areas due to prevailing favorable weather conditions required for tea in those areas. Elevation wise tea land distribution is shown in Figure 2.1.

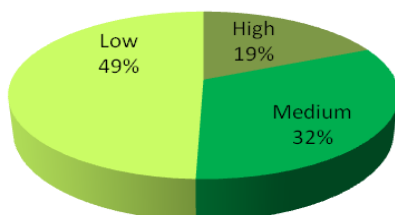


Figure 2.1 Registered tea areas by elevation in 2012

Source: Sri Lanka Tea Board, 2012

Tea produced in Sri Lanka is mainly of Orthodox type, accounting for about 92% of the total production in 2012 and CTC (Crush, Tear and Curl) tea account 7%, which is known to be preferably suited for the tea bag market. The amount of green tea (1%) produced in Sri Lanka is very low compared with total black tea production (Sri Lanka Tea Board, 2012). Further, black tea is categorized based on the region of origin namely; Dimbula, Nuwara Eliya, Uva, Udapussellawa, Ruhuna and Kandy. Accordingly first four types have their unique flavor characteristics and the latter two are preferred for their appearance and dark liquor (Mohamed and Zoysa, 2006). Sri Lanka recorded the 4th highest production in globally and has a production share of 6.9% in the international sphere. As one of the world’s leading exporter it contributed 16.6% of the global demand of tea in 2013. Approximately 40% of world production is CTC tea and 24% is Orthodox tea, while green tea makes up the balance. Sri Lanka mainly competes in the Orthodox tea market and become the leading producer of Orthodox tea. (International Tea Committee, 2013).

2.1.1 Role in the Economy

The tea industry played a vital role in the Sri Lankan economy even though relative contribution to GDP has declined in recent years. Approximately, 10% of the Sri Lankan population is employed directly or indirectly by the tea industry; therefore, it is an important sector for reducing unemployment and poverty in Sri Lanka. (Central Bank, 2012).

Table 2.1 Tea production, Export and Contribution to the national economy

Year	Production Mn kg	Export Mn kg	Export earnings US \$ Mn	Value added as % of GDP
2003	303.2	291.5	653.4	2.0
2004	309.5	290.6	700.6	2.2
2005	317.2	298.8	769.4	1.9
2006	310.8	314.9	830.5	1.4
2007	304.6	294.3	960.2	1.7
2008	318.6	301.2	1195.1	1.6
2009	291.1	279.9	1145.0	1.7
2010	331.4	305.8	1337.5	1.6
2011	327.5	303.2	1372.7	1.3
2012	328.4	306.0	1324.5	1.3

Source: Central Bank, 2003 to 2012

Tea utilizes large quantity of resources and provides relatively high return to the country. Since 1980's, value of industrial export has increased dramatically with the changes of the Sri Lankan economy. Table 2.1 provides information about the importance of tea industry in terms of production, export quantity and earnings and contribution to the GDP over time. Accordingly national production, export quantity and export earnings increasing with time.

2.2 Tea industry

Tea industry mainly consists of green leaf production, made tea production and sales (Figure 2.2). Following section describes the performance and draw backs of each sector.

2.2.1 Green leaf production

In Sri Lanka, tea cultivation was begun as large plantations but currently green leaf is producing in both estates and smallholder farmers. The total number of producers and relative share of total production from smallholder farmers in Sri Lanka have increased significantly over time. Government programs and price effects that reduced revenue uncertainty and relative costs of production have enhanced the competitive position of small farmers relative to large estates (Herath and Weersink, 2007). It is evident that smallholder's contribution for total tea production was 71% while estate sector contribute 29%. Further, when considering the leaf ownership 69% of production come from brought leaf and 31% from own leaf in 2012 (Sri Lanka Tea Board, 2012). The smallholder production system has become more attractive in other leading producer countries like India and Kenya. The costs of production of smallholder farmers remain relatively lower than estates due to hidden family labour cost and also they do not need to bear the any social cost (Wal, 2008).

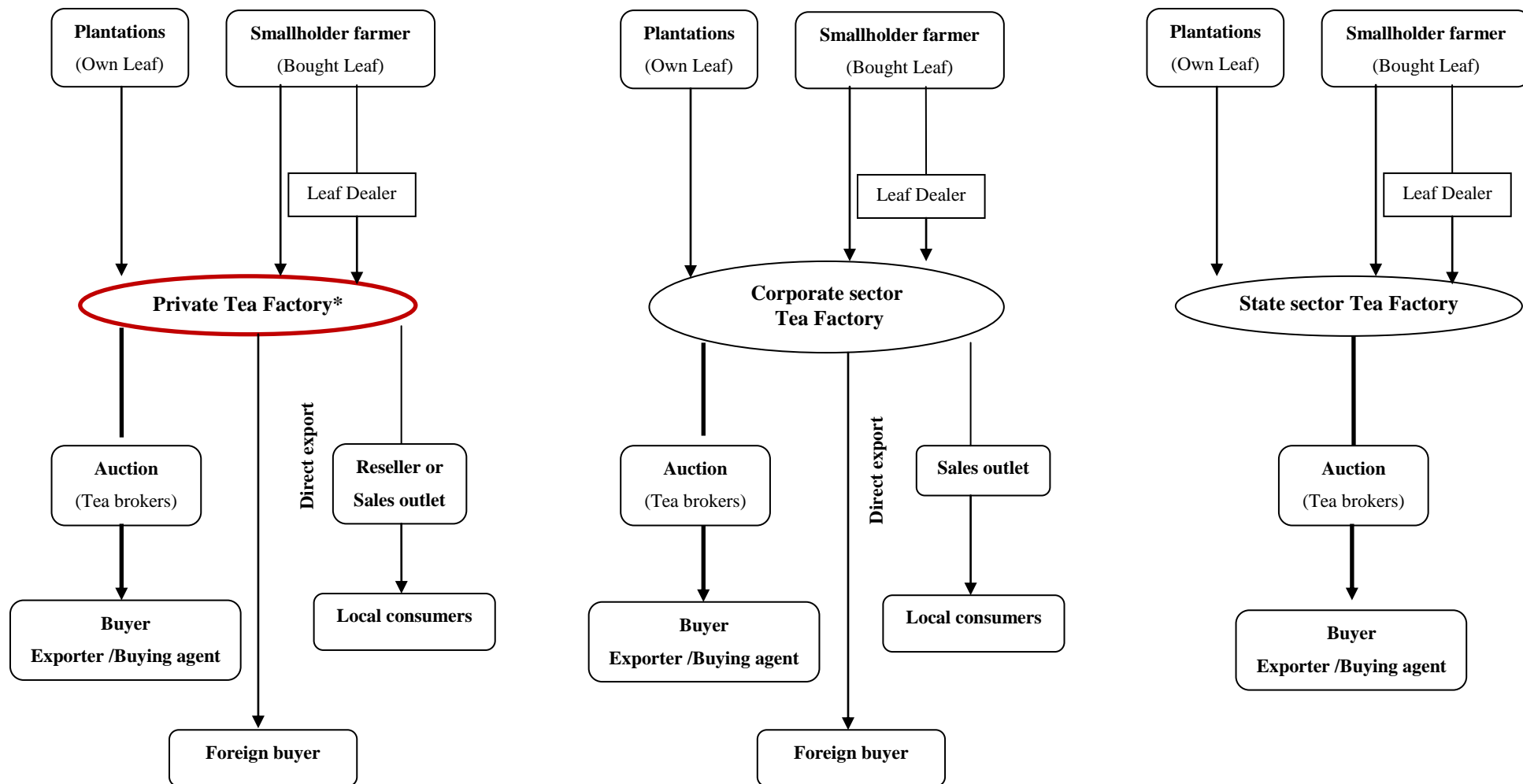


Figure 2.2 Tea industry structure

*This study conducted with private tea factories, corporate sector represent the Regional Plantation Companies

▪ Land productivity

Due to several reasons land productivity among different tea growing areas is not similar. Comparatively low grown areas produce higher yield than mid and high elevations. Since low grown areas experiences longer sunshine hours that enhance the growth of tea flush and eventually produce high yield. Further, high and mid elevation has reasonably aged tea plantations having low yield likely (Ganewatta and Edwards, 2000). Low grown areas have higher percentage of vegetative propagated (VP) tea that having higher potential of yield while mid and high grown areas having comparatively low proportion of VP tea. Another contribution factor for low productivity in mid country tea lands is high infilling rate in tea plantations and degradation of soil. Therefore, land productivity is very low in mid country.

▪ Supply of green leaf

To produce 1 kg of made tea 4.50 – 4.65 kg of green leaf is required. There are two main ways of supplying green leaves to the factory, namely own leaf and bought leaf. The own leaf which belongs to owner of the factory and the bought leaf which is outsource to the factory from others, mainly from smallholder tea farmers. When considering the manufacturing firms, corporate sector factories are depending mainly on own leaf whereas bought leaf becomes the main source of raw material of private factories. Accordingly highest percentage of national tea production comes from bought leaf and which accounts 69% and rest come from own leaf (31%) in 2012.

▪ Price of green leaf

Under provision of the Tea Control Act, factories engage in bought leaf manufacture are required to pay price for bought leaf based on Tea Board's recommended price. The reasonable price payable by factories to green leaf suppliers was determined on the basis of monthly net sale average of those factories.

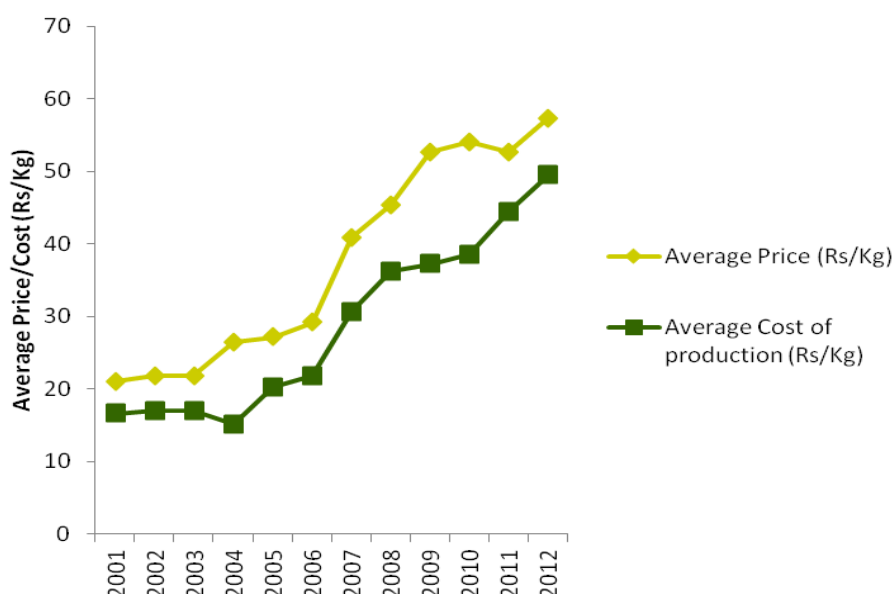


Figure 2.3 Price received and production cost of kilo of green leaf (Source; TSHDA, 2012)

The proceeds from made tea sales are to be split between the leaf supplier and factories in ratio of 68:32. If the factory sales average exceeds the monthly elevation average, the incremental revenues are shared in 50:50

ratios. Figure 2.3 illustrates the average price and average cost of production of a kilo of green leaf. Accordingly in 2007 cost of production of green leaf increased drastically due wages and fertilizer prices increased substantially during the year. The minimum daily wage of an estate worker increased in June 2007 to Rs. 260 from Rs. 189 reflecting a 38 % increase. However, during the year, average export price and Colombo Auction price increased by 31.7 % and 40 %, respectively (Central Bank, 2007). Therefore, average price paid to smallholders for bought leaf increased.

2.2.2 Tea Production

Sri Lanka produces tea throughout the year and growing areas are mainly concentrated in the central highlands and southern inland areas. Tea produce in Sri Lanka vary according to the elevation, while high grown teas are reputed for their unique taste and aroma. The medium grown teas provide a thick colour variety which is popular in Australia, Europe, Japan and North America. The teas produced in low grown areas are mainly preferred in Western Asia, Middle Eastern countries and CIS countries (Commonwealth of Independent States). Most factories in low grown areas produce leafy grades of tea with long particles. Sri Lankan total production of tea has gradually increased after mid 80's and reached 327.5 Mn kg in 2012. The production increases mainly came from the low grown areas where small holders are prominent. Tea production in low elevation contributed more than two third (62%) of national production while high and middle accounted for 22% and 16% respectively in 2012 (Sri Lanka Tea Board, 2012).

All factories that manufacture made tea are essential to be registered with the Sri Lanka Tea Board to ensure that building, equipments and manner of operations of the factory is standard conducive to the manufacture of good quality teas. Presently total 714 tea factories are in operation. Those tea factories are located in different elevations zones as; 166 in up country, 118 in mid country and 430 in low country. Based on management structure, tea factories are categorized as private sector, corporate management sector (tea factories of regional plantation companies) and state sector (Sri Lanka State Plantation Corporation (SLSPC), Janatha Estate Development Board, Tea Shakthi, TRI and Kalubowitiyana Ltd tea factories considered as state sector). They are respectively contributed for national tea production as 61%, 37% and 2% in 2012 (Sri Lanka Tea Board, 2012). Classification of tea factories in operation based on elevation and management structure is shown in Table 2.2. Further, Figure 2.4 illustrates that contribution of private sector factories to national production are increasing over the time while contribution of corporate management sector declining.

Table 2.2 Classification of tea factories based on management structure

Management Structure	High grown	Medium grown	Low grown
Private tea factories	8	47	338
RPC tea factories	156	57	66
State sector factories	2	14	26
Elevation wise total factories	166	118	430

Source: Sri Lanka Tea Board, 2013

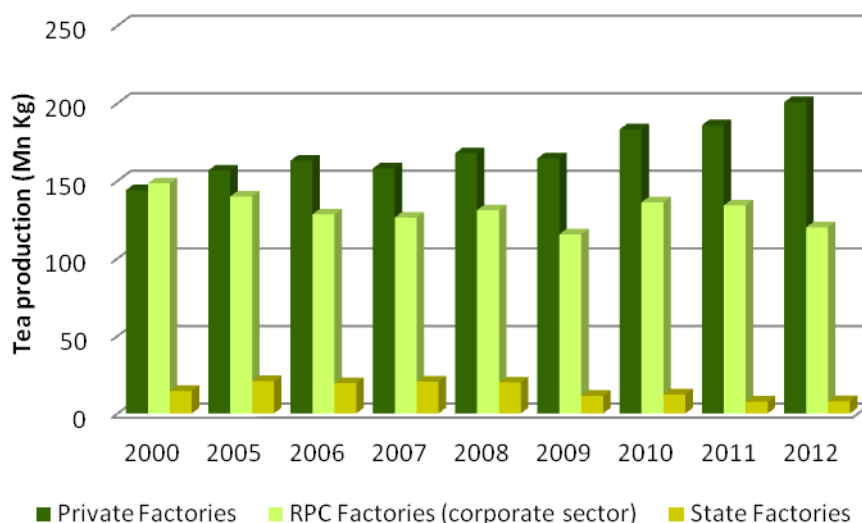


Figure 2.4 Made Tea Productions (Mn kg) by Manufacturer

Source: Sri Lanka Tea Board, 2012

2.2.2.1 Production by processing method

Sri Lanka's tea manufacturers are the custodians of the traditional orthodox method of black tea production. However, black teas are processed in either of two ways, orthodox or CTC. The unit operations involved in black tea processing could be categorized as withering, rolling, roll breaking, fermenting, drying, grading and packing. Processing technology varies according to type of teas produced. Sri Lanka mainly produces orthodox type of black tea and it accounts more than 90% of the total national production. In 1990s, global demand indicated that preference towards tea bags. Therefore, FAO indicated that there is higher preference for CTC teas in global market compared to orthodox teas. According to Maligaspe (1998), teabags account for more than 90% of the total consumption in developed countries. Therefore, a policy decision was made by the Sri Lankan government to convert 20% of national production into CTC. However, the production of CTC teas still remains around 7% of total; as a result of higher demand for orthodox teas produced in Sri Lanka. From total CTC production, 55% comes from RPC factories while private and state factories respectively contributed 33% and 12% in 2012. Additionally, Sri Lanka produces green tea, instant tea and bio tea whereas respectively they contributed to national production as 0.9%, 0.5% and 0.3% in 2012. Therefore, it is minute comparing to black tea production.

2.2.2.2 Cost of production of made tea

Increase cost of production (COP) continues to be crucial issues in tea sector. Productivity and COP are inter-related and labour productivity in tea has a greater relationship with COP as tea production is high labour intensive. Labour wages constitutes about 60% of the COP of tea. Sri Lanka has highest COP among major tea producing countries. This has affected the country's competitive position in the global arena. The COP for per kilogram of made tea has rapidly increased during last decade as reveals in figure 2.5. Increased in labour cost and high input prices had specially influenced on production costs of tea. As explain earlier COP and input cost of green leaf increased drastically in 2007 due to increasing wages and fertilizer cost.

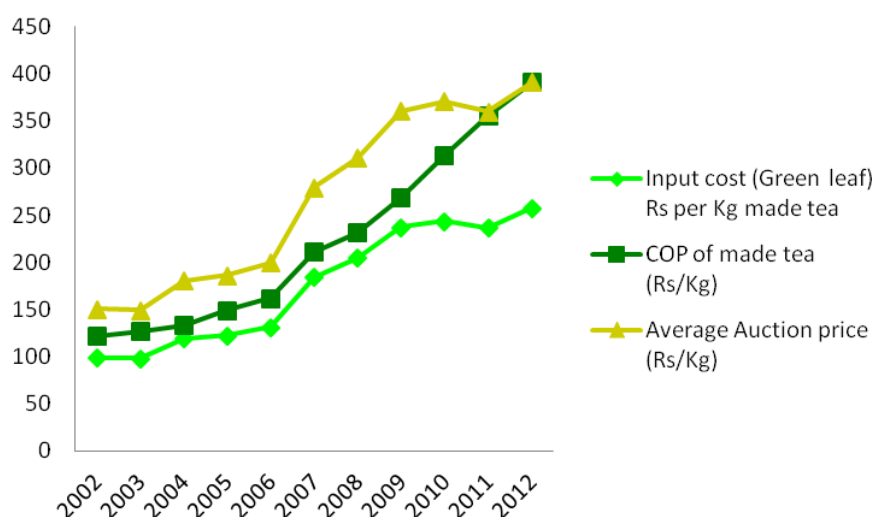


Figure 2.5 Cost and price of made tea (Rs)

Source: Sri Lanka Tea Board, 2012

Note: Input cost of green leaf was calculated multiplication of average green leaf requirement of production of 1 kg of made tea by price of 1kg of green leaf (TSHDA, 2012)

2.2.3 Tea Sales

Public auction is the main mode of disposal of teas manufactured in factories. More than 95% of total sales of Sri Lanka take place through auction. Private sales and direct sales are other main methods of sales. In private sales, produces sell to the buyer bypassing the auction. Other method call forward contract or direct sales, under this system, producer supplies a specific quantity of tea over a period. However, less than 5% of teas are marketing through these channels.

▪ Tea prices

Tea prices at Colombo auctions relatively fluctuate over time. As one of vital export earner of the country, changing tea prices are greatly impact on the economy. Therefore, price changes highly influence the entire economy and living standards of the people directly and indirectly involve in the industry. As shown in Table 2.3, there is a considerably higher margin between average Colombo auction price and F.O.B. price. It implies that tea exporters enjoy reasonably higher margin compare to the tea manufacturers.

Table 2.3 Tea price received by producers and exporters.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Average Auction price (Rs/kg)	149.05	180.74	186.2	199.84	279.52	310.53	360.67	370.61	359.89	391.64
Average FOB price (Rs/kg)	216.36	243.95	258.82	274.16	360.97	429.76	470.24	494.59	500.64	552.26
Price difference	67.31	63.21	72.62	74.32	81.45	119.23	109.57	123.98	140.75	160.62

Source: Sri Lanka Tea Board, 2012

2.2.4 Tea exports

Tea industry is an important contributor to the country's exports, accounting for nearly 14% of its total export in 2012 (Table 2.4). Export revenue from tea has been rising compound annual growth rate of nearly 12% since 2000. It is supported by strong demand for Ceylon tea that has resulted in increasing price (Sri Lanka Tea Board, 2012).

Table 2.4 Tea sector export performance

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Contribution to total exports (%)	13	12.8	12.8	12.8	13.2	15.7	16.7	16.7	14.1	14.4
Export earnings (US \$ Mn)	653.4	700.6	769.4	830.5	960.2	1195.1	1145.0	1337.5	1372.7	1324.5

Source: Sri Lanka Tea Board, 2012

The global demand is rapidly shifting into more convenient types of tea. Therefore, in order to maintain its traditional market position in the globe it is important to adopt these market changes. Export of value added teas such as tea packets, tea bags and instant teas recorded as a share of 38.3% of the total export volume and it is account more than 60% of total tea exports revenue in 2012. Figure 2.6 illustrates the price of various forms of tea exports. Accordingly value added forms enjoy higher price premiums compared to bulk tea and thereby leading for better profits.

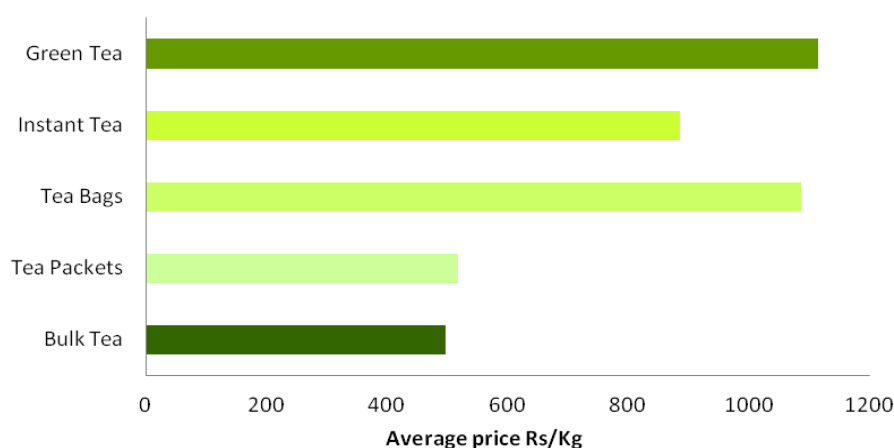


Figure 2.6 Price of various forms of tea exports (Source: Sri Lanka Tea Board, 2012)

Historically, Europe including UK was the main export destination for Sri Lanka tea. However, Sri Lankan bulk tea exports have now tilted towards the Middle East since Europe shifted to use of tea bags. Russia as the world largest tea importer, it become the largest individual buyer of Sri Lankan tea, Accounting for nearly 15.4% of export volume share with 15.9% of export earning share during 2012.

Iran and Syria continued to be second and third in the list of main destination of Ceylon Teas. As a region, Middle East is the Sri Lankan's largest export destination; demand has been expanding robustly on the back of strong oil price. Top 10 pure Sri Lanka tea export destinations are account for around 70% of the totality. However, only Iran and Japan maintain the significantly greater F.O.Bs with respect to the average unit F.O.B. price attained (see Table 2.5).

Table 2.5 Main Destinations of Sri Lankan tea exports 2012

Country	FOB (Rs/Kg)	% Share Volume	% Share value
Russia	568.5	15.4	15.9
Iran	586.47	12.5	13.2
Syria	535.57	8.1	7.8
Iraq	452.93	7.7	6.3
Turkey	495.41	7.6	6.8
Libya	395.2	5.3	3.8
UAE	535.36	3.8	3.7
Azerbaijan	538.14	3.5	3.4
Japan	638.83	3.1	3.6
Jordan	479.28	3.1	2.7
Total	530.04	70.0	67.2

Source: Sri Lanka Tea Board, 2012

2.3 Global Tea industry Background

Tea is one of the widely consumed beverages over the world. Among the tea producing countries, global production is mainly concentrated in 4 countries; China, India, Kenya and Sri Lanka which together account for nearly 75% of world's production in 2012 (Figure 2.7). Accordingly Sri Lanka is in 4th place next to China, India and Kenya. Although China and India are still the largest producers, these two nation's considerable domestic consumption has rendered Kenya and Sri Lanka the largest global exporters of tea. Historically Sri Lanka dominated the export, while it handed over this position to Kenya after 2004. Since, Kenyan production has been increased rapidly due to expansion of its cultivation and improving production skills (RAM Ratings (Lanka) Ltd, 2010).

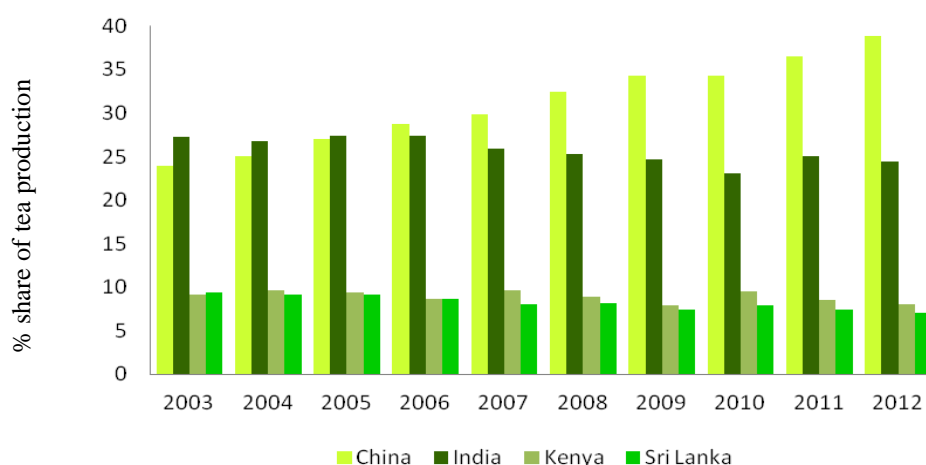


Figure 2.7 World percentage share of tea production (Source: Sri Lanka Tea Board, 2012)

A global tea export implies three major exporters; Kenya, China and Sri Lanka accounted for more than 60% of global exports (Figure 2.8). As Figure 2.8 illustrates, Kenya is the leading tea exporter in global market. However, Sri Lanka maintains the highest export earning position (Table 2.6) by maintain the best quality and increasing its share of value added forms of tea export over time. Progress of Sri Lanka not only as a producer

but also as a value added tea product exporter is vital to gain higher export revenue to the country from tea industry.

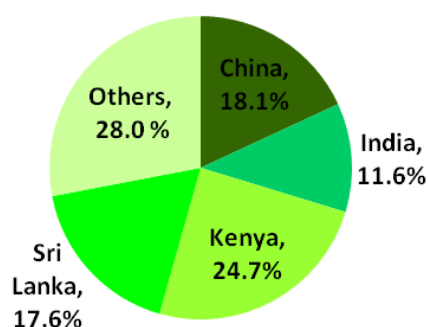


Table 2.6 Export revenue (US \$ Million)

Country	2011	2012	2013
Sri Lanka	1,357.9	1,324.6	1,462.9
Kenya	1,231.9	1,328.0	1,328.4
China	887.6	1,115.7	1,304.2
India	685.3	683.3	713.5
Vietnam	200.0	227.0	226.1

Figure 2.8 Contribution of major tea exporters in the world (2012)

When considering the global tea consumption, during the three years period of 2009-2011, it revealed that the annual consumption was highest in China, recording 1, 279.3 Mn kg. It was followed by India with 871.67 Mn kg. According to the country-wise per capita tea consumption, Kuwait, Libya, Turkey and United Kingdom are recording the highest vales. Respectively they are 3.25 kg, 2.39 kg, 2.04 kg and 1.97 kg in period of 2010-2012.

Sri Lankan tea ranked among the world's prime quality teas due to its strong flavor and aroma. As such, Colombo auction is lifted the position as the leading auctions center by handling the high sales volume (Table 2.7). While Mombasa and Kolkata auctions also handling comparatively higher volumes. Price at Colombo tea auction has consistently been higher than those in other major auctions in the world. Also it was the only auction centre that exceeds US \$ 3.00 per Kg during the period of 2010- 2012.

Table 2.7 Statistics of major tea auctions (Quantity in Mn Kg, Average unit price in US \$/kg)

Auction Centre	2010		2011		2012	
	Quantity	Price	Quantity	Price	Quantity	Price
Chittagong	56.8	2.61	53.9	2.14	58.1	2.41
Cochin	61.0	1.71	58.8	1.73	57.4	1.80
Colombo	322.4	3.28	323.3	3.26	325.4	3.07
Guwahati	121.5	2.43	125.8	2.33	119.3	2.47
Jakarta	38.5	1.82	32.8	1.97	32.0	1.97
Kolkata	154.9	2.86	165.9	2.78	151.0	2.81
Limbe	15.8	1.58	13.3	1.61	12.5	1.70
Mombasa	348.1	2.54	333.9	2.72	321.5	2.88

Source: Sri Lanka Tea Board, 2012

2.4 Innovations adopted by Tea manufacturing firms

Innovations adopted by tea manufacturing firms can be categorized to product, process and marketing innovations.

2.4.1 Product Innovations

Mainly Sri Lanka produces orthodox type teas; it accounts more than 90% of the total production. As innovations it adapted to produce CTC tea and green tea. Respectively they account 7% and 1% of the national production. At present, 37 tea factories producing CTC tea and 21 tea factories producing green tea. Additionally, 10 factories produce Bio tea and 2 factories produce instant tea while contribution to national production is negligible comparing to orthodox black tea production. Sri Lanka government had taken policy decision to convert 20% of the national production into CTC type in order to cater the global demand. However, still country fails to attain the target due to high capital investment for conversion.

Some tea factories differentiate the product by producing different range of orthodox tea. Under that they produce golden tips and silver tips as white teas. Exclusively those tea grades are produce from tea buds and based on buyers special requirement. Also produce flavored teas, special tea grades and extra special tea grades. As product innovations some tea factories are work on designer teas and produce unique tea grades. In addition to bulk tea production, some factories produce value added tea such as tea packets and tea bags depending on market they cater.

2.4.2 Process Innovations

Process innovations adoption of tea factories are more towards automation of tea processing and energy conservation towards establishing food factory concept. Sri Lanka can be proud of being only tea exporting nation which firmly adheres to ISO 3720 standard (minimum product quality) for each kilogram of tea export. At present, there is increasing demand for “Food Factory Concepts” and certification systems. Therefore, tea factories are adopting following innovative strategies. Improve their production process and modernize the factory according to obtain the quality certifications such as Hazard Analysis and Critical Control Point (HACCP), ISO 22000, ISO 9001:2000 etc. As initiation for international quality standards, some tea factories adopted Ceylon Quality Certification (CQC) and Sri Lanka Standards (SLS) certifications. Further, according to Sri Lanka Tea Board, they have been assessed 211 tea factories in 2012 for establishment of good manufacturing practices under this scheme tea factories were evaluated and actions were taken to improve the standard of manufacturing process.

Tea produced in Sri Lanka is mainly orthodox type. The orthodox process is labour intensive therefore labour productivity plays an important role. In order to minimize the COP in long run and decrease the over depend on workers, automated the production process. Thereby enhance the quality of end product by enhancing homogeneity and hygienic condition. Some tea factories adopted semi-automated production process that means they automated only selected part of production process such as rolling, weathering or drying. Tea factories which are producing CTC teas, implement fully automated CTC production line while factories producing instant tea also implement new production line.

The cost of energy in tea processing has become critical because tea processing is highly energy intensive (according to energy audit it is required 0.46 KWh/kg of made tea). Some Tea factories adopted different strategies to cut down the energy cost, thereby try to decline the COP and enhance the efficiency. They use technologies to reduce the cost of energy used in withering and tea drying. For instance, reduce the cost of electrical energy for withering by controlling the hygrometric difference of the air supplied and using speed controlling. Further, adopt alternative energy sources for tea drying. Further, some factories adopted different

strategies to reduce post harvest losses of green leaves. They are using plastic crates and nylon bags with special rack system for transporting the green leaf and implementing computerizing weighing system.

2.4.3 Marketing Innovations

All the tea factories utilize the auction as their main disposal method. In national level, more than 95% of the productions are sales through auction while additionally using direct sale (0.5%) and private sales (1.1% in 2012) too. As innovative marketing strategies some tea factories adopt different marketing strategies. Some factories are serving to local market by introducing their own brands. They utilize their own sales outlets such as tea centers and resellers.

Additionally some factories directly export their own brand to foreign niche markets by maintain direct relationship with foreign buyers. Further, some are participating for international trade exhibitions as a strategy to expand their foreign market and promote their own tea brands. As innovative marketing strategy some factories provide opportunity to foreigners to get the real experience of tea manufacturing. Thereby enhance the relationship with foreign delegates.

2.5 Institutions support for tea industry

Effective institutional support for production and marketing of agricultural goods is common all over the world. The following institutions are dedicated to improving the Sri Lankan tea industry.

2.5.1 Sri Lanka Tea Board

The Tea Board (TB) is the apex regulatory and administrative organization of the Sri Lankan tea industry. First set up in 1976, it comprises representatives from both private and government bodies involved in the industry, including cultivators and manufacturers, traders, exporters and plantation employees. Tea board is responsible for sustainable development and promotion of Ceylon tea, satisfying the need of growers, small holders, manufacturers, exporters and global consumers while ensuring the interests of other stakeholders.

Factories that manufacture made tea have to be registered with the Tea Board to ensures that the building, equipments and manner of operations of the factory is of a standard conducive to the manufacture of good quality teas, assist in monitoring of quality of tea produce by the factory, enables control over the disposal of refuse tea and implementation of reasonable price formula. Sri Lanka Tea Board is caring out following actions in order to enhance EO of tea manufacturing firms. Since, Sri Lanka Tea Board is the responsible authority for hygienic production of tea and factory modernization. As an organization they believe EO is key factors of enhance the productivity of tea factory by reducing cost of production and improving the quality of tea.

- Registration and renewal of tea manufacturers and factories
- Information sharing; Compiling and circulation market data and other information about the Sri Lanka tea industry.
- Financial support; providing subsidies for factory modernization and replanting
- Education and Training; conducting series of seminars and training program to make aware the all the stake holders before implementing special quality enhancing programs.
- Consultation service; based on requirement and request of each factory owner or manager.

- Quality Improvement support; improvement of green leaf standard by B-leaf 60 program, implementing several programs such as good manufacturing practice (GMP), quality monitoring system, factory base development programs etc.
- Monitoring and controlling the quality and purity of tea exported from Sri Lanka
- Promoting the sale and consumption of Ceylon tea worldwide

(For further information, Website: www.pureceylontea.com)

2.5.2 Tea Small Holding Development Authority

Tea Small Holding Development Authority (TSHDA) looks after the operations of the smallholder sector in the country. The Government having recognized the importance of this sector in increasing employment and productivity levels of tea sector. TSHDA was established in 1977 to increase the productivity and quality of tea smallholding sector through provision of excellent support services. Thereby they are responsible for providing quality green leaf for manufacturer as their main raw material. They carry out following functions to enhance the quality green leaf production of smallholding sector.

- Implementing incentive schemes for enhance the yield of tea lands; replanting, new planting and in-filling.
- Provision of support service such as distribution of fertilizer, planting material etc.
- Conducting extension services to disseminate technical know-how to small holders on cultivation and production of quality green leaf.
- Implementation of price supervision activities of tea factories processing leaf of tea smallholders.

(For further information, Website: www.tshda.gov.lk)

2.5.3 Tea Research Institute

The Tea Research Institute (TRI) has been the only national body in Sri Lanka for generating and disseminating new technologies related to tea cultivation and processing. They are responsible for generate and transfer scientific knowledge and technologies appropriate for the stakeholders to improve productivity and quality of Sri Lankan tea in most profitable manner. TRI views that innovation and proactiveness are key factors behind the sustainability and profitable tea industry so they are providing following facilities to manufactures;

- Research and development; developing/ modifying machinery related to tea processing in order to improve the quality of the product, and reduce cost of processing by conserving electrical and thermal energy.
- Consultation and professional support; provides advisory services to stakeholders of tea industry.
- Quality assurance support.
- Enhancing technical knowhow and knowledge dissemination through trainings.
- Information sharing; through extension service and annual publications.

(For further information, Website: www.tri.lk)

2.5.4 National Institute of Plantation Management

National Institute of Plantation Management (NIPM) provide learning/ training opportunities for the plantation sector personal towards enhancing productivity of resources while increasing the qualities of end

products. By this means, enhance the professional competencies of all human assets in the tea industry towards perfection through quality training. NIPM views that knowledge and technical knowhow is essential to become a successful entrepreneur. In the framework of the implementation of training management strategies, they always, endeavor to use acceptable international standards to certify the quality of their service. Based on their main objectives provide following facilities to tea manufacturers;

- Education and training; NIPM is working as a trainer and teacher to all categories of personal, both executive and non executive workers in tea sector.
- Consulting service based on request of client.
- Information and knowledge dissemination through various publications.

(For further information, Website: www.nipm.gov.lk)

2.5.5 Sri Lanka Tea Factory Owners Association

The Sri Lanka tea factories owners association was formed in 1990 mainly to protect the interest of tea factories. They represent the forums and government institutions of tea sector in Sri Lanka. Thereby negotiation with government and other main stakeholders of tea sector to develop tea manufacturers and smallholder farmers as their main raw material suppliers. Further, they enhance the entrepreneurial qualities of tea manufactures as follows;

- Organizing seminars and training program for tea manufactures to update market condition and new technology.
- Assist in providing facilities such as financial, storage etc.
- Develop smallholder farmers to obtain the quality raw materials; assistance for extension and financial facilities.

(For further information, Website: www.slftfoa.org)

2.5.6 Tea Brokering Company

The tea produced at the factory, are sold at the Colombo auction through tea brokering companies. At present, seven Tea brokering companies are functioning in Sri Lankan market. A nominal sum of 1% on the sale price per each kilogram is charged by the company. Prior to selling teas at the auction, tea samples are sending to the prospective buyers through Broker Company, giving adequate time for the buyers to assess the quality of tea in order to bid at the auction. Further, tea brokering companies are playing vital role in the tea industry of Sri Lanka by providing entrepreneurial infrastructure such as advisory service, valuation report about sample, market information, warehouse facilities and credit facilities to manufacturer.

(For further information, Website: www.ceylonteabrokers.com)

2.6 Profile of Low grown teas

Small holders are dominant in low elevation and large plantations and small private estates mainly exist in high and mid elevations. Low grown areas has much higher tea yield than mid and high elevations due to favorable weather conditions and having higher percentage of VP tea in that area. Recent performance of the production mainly comes through the contribution of the small holder sector especially in low grown areas.

Higher producer price for green leaf continued for the low grown tea has attracted many small landowners for tea planting in low country. Low elevation average price of green leaf is Rs. 59.66 per kg in 2012, where it higher than national average price of Rs. 57.27 per kg.

Tea production can be dispersed geographically in to three elevations according to the altitude that is high, medium and low elevations. The contribution to the total production from different elevation has been changed over the time with the changes of tea land area in respective regions. Accordingly, high and mid elevation contribution to the total production remain same and show slight decline during the period of 2000 – 2012. Low grown production has considerably increased over the time and it accounts 62% of the national production in 2012 (Figure 2.9).

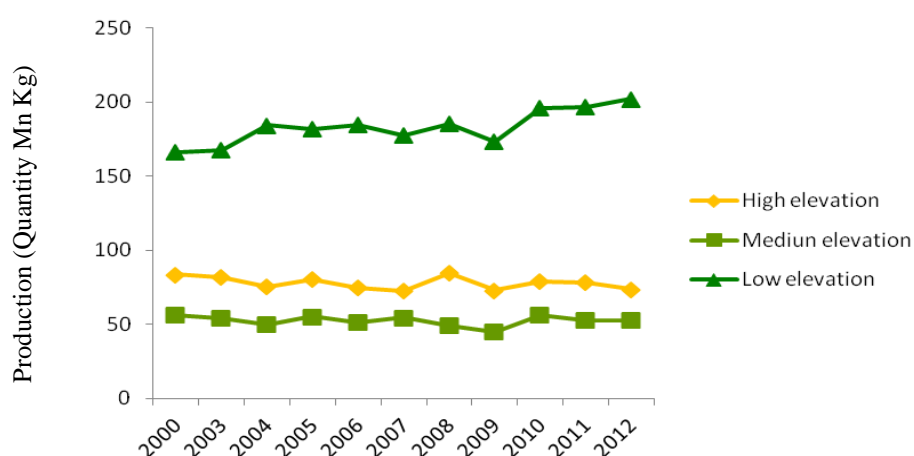


Figure 2.9 Elevation wise tea productions (Source: Sri Lanka Tea Board)

Tea produced in low grown areas is mainly orthodox type; it is 64% of national orthodox tea production in 2012. Additionally, they contributed 38% for CTC and 17% for green production of country. Currently 430 tea factories are functioning in low grown areas. Table 2.8 shows the recent year's monthly production distribution of tea factories in low grown area. Accordingly more than 50% of tea factories produced 25 000 to 75 000 kg and nearly 24 % of them produce 10 000 to 25 000 kg of made tea per month.

Table 2.8 Monthly production distribution of Low grown tea factories

Production Category (kg)	2011		2012		2013	
	Number	Frequency (%)	Number	Frequency (%)	Number	Frequency (%)
< 10 000	40	9.71	45	10.59	38	8.84
< 10 000 - 25 000	101	24.51	102	24.00	104	24.19
25 000 - 75 000	233	56.55	234	55.06	240	55.81
75 000 - 100 000	21	5.10	25	5.88	29	6.74
> 100 000	17	4.13	19	4.47	19	4.42

Source: Sri Lanka Tea Board

In last decade, annual average auction price for tea remained the highest for low grown (Figure 2.10). Further, generally national average price was higher than high and medium elevational price and below the low grown price. The price fetched at the auction for three different elevations were parallel with the quantity of tea

production for respective elevations. Taste of teas, type of production, weather conditions, demand for different tea types, and manner of operation have contributed to the price differences among the elevations.

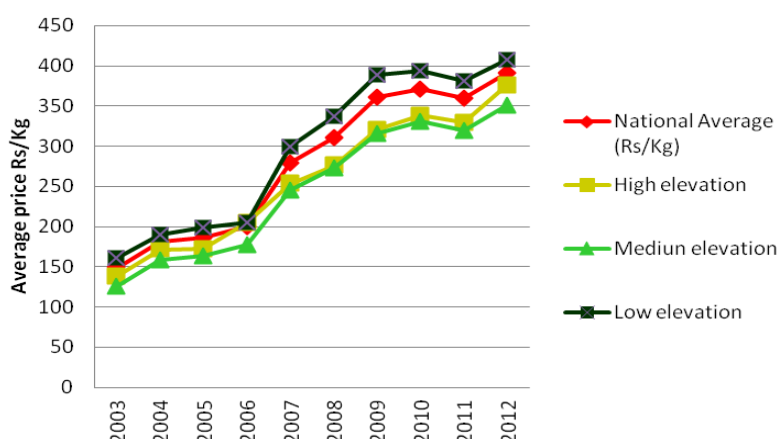


Figure 2.10 Elevation wise tea price

As explained above normally price reflects the quality of made tea. Table 2.9 illustrates the factory wise average Net Sale Average (NSA) of low grown area in year 2013.

Table 2.9 Distribution of NSA in 2013

Category of NSA (Rs/kg)	Number	Percentage (%)
< 300	5	1.21
301 - 350	9	2.17
351 - 400	27	6.52
401 - 450	101	24.40
451 - 475	111	26.81
476 - 500	90	21.74
501 - 550	62	14.98
> 550	9	2.17

Source: Sri Lanka Tea Board

2.7 Issue faced by Sri Lankan tea industry

This section describes the main challenges faced by Sri Lankan tea industry. Those issues are discussed under green leaf production, cost of production of made tea, and export performance. This study mainly focuses on tea manufacturing firms in low grown areas. Therefore, proposed research model is applicable to improve the competitiveness of manufacturing firms. Improve competitiveness not only benefits the firm itself, also direct impact on the competitiveness of an industry (Sirikrai and Tang, 2006). Therefore, in here, Sri Lankan tea industry is compared with other leading producer countries and tries to understand the competitive position of Sri Lankan tea in the global market.

2.7.1 Comparatively low yield

Different countries have been recording variable yield, while it is depend on range of factors such as weather condition, labour productivity, fertility and topography of the land, quality of seedling and management practices. Other producing countries have acquired reasonable increase in their productivity compare to

stagnation and slow growth of the production in Sri Lanka (Figure 2.11). This is a critical issue related to green leaf production. Old vegetative stocks (especially in high and mid grown areas) and low agricultural standard attributed for poor land productivity in Sri Lanka.



Figure 2.11 Tea yield in main producing countries

As indicated by figure 2.11, tea yield in Sri Lanka have been declining. That is mainly due to irregular replanting and in-filling. Replanting involves uprooting old bushes, rehabilitating soil, planting and maintaining until maturity. It conformity to national policy, 2% of the existing tea extent has to be annually replanted in order to maintain the tea extent obtaining the maximum yield. However, replanting stand 0.7%, due to heavy capital outlay associated with the exercise. Meanwhile, it is evident that over 50% of the tea plantation in Sri Lanka over 100 years old thereby rendering the less land productivity. This scenario is mainly evident in high and mid elevations. The use of low-yielding seeds and less intention for soil fertility and improvement also contributed to decline the yield.

Presently, most of tea factories are running under capacity due to low availability of green leafs and this lead for high COP of made tea too. Further tea factories are purchased green leaves without adhering to strict quality measures. National level on average tea factories receives 33% best (tender leaf), 32% below best (damage tender leaf) and 35% poor (mature and course leafs) green leaves. Ultimately it negatively impact on the quality of made tea, reduce the percentage of main grades and its improvements. Therefore it requires replacing old seedling stock with high yielding vegetative stock and producing high quality leaf.

2.7.2 High cost of production

As tea production system requires large quantity of labour, labour productivity in tea has higher relation with cost of production (COP). Sri Lanka records the highest COP among major tea producing countries as shown in Figure 2.12. This becomes a critical issue in both green leaf production and tea manufacturing. The COP of made tea for Sri Lanka approximates US \$ 2.33 per kg. This has affected the country's competitive position in global market. Primary determinant of COP in tea sector include low labour productivity at field and factory level. For example, in Sri Lanka, labour cost comprises approximately 60% of the cost of production, while it comprises only 40% to 50% in India and Kenya.

The wages of the country's plantation industry is determined every 2 years, through a collective agreement between the sectors trade union and Employers Federation Council (EFC), which represent the plantation companies. Given the power exercised by the trade unions, minimum wage rate have increased significantly over last decade (RAM rating Lanka (Ltd), 2010). That highly impact on COP of tea. Moreover, increasing energy cost also attributed for COP, since energy cost accounting for almost 13% of the tea sector's total COP. The highest COP impacts on future prospects of tea industry as follows. First, it is impossible to bring down the price to attract buyers in a competitive market. Secondly, new investments are reducing due to lowering the profit (see figure 2.5).

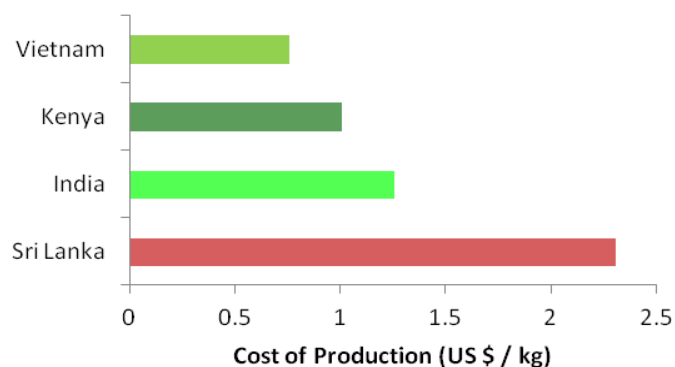


Figure 2.12 Cost of production of main producing countries

Source: RAM rating Lanka (Ltd), 2010

2.7.3 Declining Trend of export Performance

Regardless of superior quality of “Ceylon Tea”, at present Sri Lanka's position in the global tea arena has been slipping in last few years. This has been largely due to competitive pressure in the global market from low cost producer countries and country's continued focus on orthodox bulk tea. Once the largest tea exporter, now Sri Lanka shifted to third place next Kenya and China (see Figure 2.13). Kenya tea production has expanded by expanding the cultivation extent and better production skills.

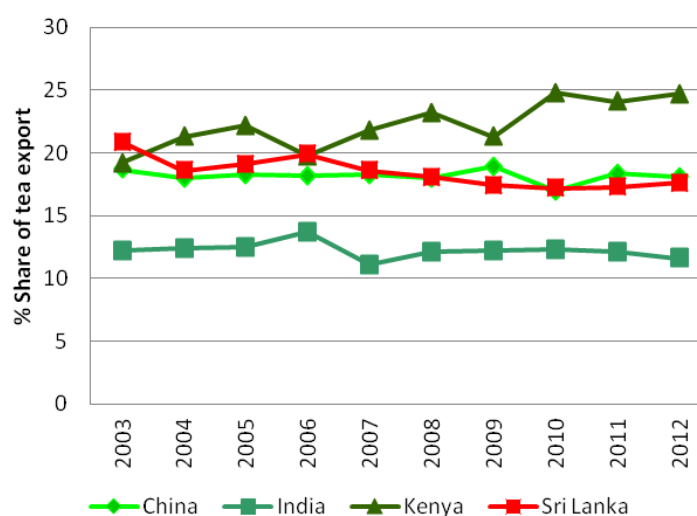


Figure 2.13 World percentage shares of tea exports

As shown in Figure 2.13 and Table 2.10, Sri Lanka is experiencing critical issue of maintaining its market share in the global market, compared to other tea exporting countries like Kenya, and China. It should be noted that Kenya is primarily competed with Sri Lanka's high grown varieties while India and Vietnam compete against low grown varieties. The revealed comparative advantage (RCA) index was introduced by Balassa (1965) to identify the relative trade performance of country. Accordingly, the RCA index implies that Sri Lanka is losing its tea export competitiveness, while the RCA of Kenya has been increasing during the past 10 years (see Table 2.10).

Table 2.10 Revealed comparative advantages and World market share of tea

Year	Revealed Comparative Advantages ^a			World Market share of tea (%)		
	Sri Lanka	Kenya	India	Sri Lanka	Kenya	India
2002	344.31	254.64	16.35	19.9	19.0	13.8
2003	345.90	471.75	13.19	20.9	19.2	12.2
2004	360.05	464.31	13.57	18.6	21.3	12.4
2005	371.75	471.37	10.93	19.1	22.2	12.5
2006	370.90	542.10	9.83	19.9	19.8	13.7
2007	407.60	525.16	9.11	18.6	21.8	11.1
2008	456.75	552.85	9.13	18.1	23.2	12.1
2009	373.70	453.28	7.09	17.4	21.3	12.2
2010	386.83	529.16	7.41	17.2	24.8	12.3
2011	377.07	514.21	7.34	17.3	24.1	10.9
2012	420.87	507.91	6.65	17.6	24.7	10.3

Source: Compiled by researcher based on International Trade Centre Statistics (2013)

^a RCA = Share of the commodity tea in total exports of the country / Share of the commodity tea in the total world exports

Global demand patters for tea is gradually switching towards the more convenient forms of this beverage such as tea bags. Shift in consumption pattern become a threat to Sri Lanka's competitive position since continued to focus on orthodox type teas which accounts more than 90% of national production. In this condition, country is facing difficulty of exploit opportunities such as raising demand for value-added tea. Sri Lanka has gradually lost the Europe market since they have been turn to tea bags while CTC tea producers (CTC tea is more suitable for tea bags) such as Kenya enter to that market. Financial constraints of tea factories also impact on this situation, as implementing new production methods required substantial capital outlay. Similarly, High COP of Sri Lanka tea also affects the country's competitive position. As example, traditional importers of Sri Lankan tea such as Egypt and Pakistan already shifted to cheaper exporters as Vietnam. This clearly emphasize that Sri Lanka is losing its tea export competitiveness compared to other major producing countries. Therefore, Sri Lanka needs to adopt best strategies which help to protect the tea industry.

2.8 Conclusion

The tea industry initiated by the British, still it has been play a vital role in the country's economic and social development. Tea is a significant contributor to Sri Lanka's export earning and also it is the largest employer in the country. Since early day's Sri Lankan tea has been considered the best in the world. This has enabled to get the higher price in the global market and earn highest export revenue among global peers. Even

though Sri Lanka has given up its position of largest exporter of tea in 2004, it has retained its status as one of leading exporters (currently in 3rd position). In recent time, demand for Sri Lanka tea largely comes from CIS countries and Middle East while historically catering to the European region.

Sri Lanka has lost the position it had as major producer with the poor performance of the industry. Country's competitiveness has been eroded due to high competitive pressure in the global market and several internal supply issues. As result of low field and factory productivity, Sri Lanka's cost of production remains the highest among the leading producer countries in the world. Inadequate focus on replanting and soil rehabilitation due to financial constrains has decline the green leaf yield comparison to other competitive countries. Further, competition arises from other newly emerging producer countries that produce similar type of teas at lower cost. Meantime, persistent focus on orthodox and bulk tea could have an effect on the country's position as global consumption patterns growingly incline towards more convenient form of tea. This is adversely impact on producer incomes and on the national economy too. Sri Lanka tea industry now facing two big challengers that are; how to preserve its current market position and how to expand tea export competitiveness compared to main competitors.

To ensure the continuity of Sri Lanka as a dominant force in the global market, it is essential to concern the EO of tea manufacturing firms. EO reflects the firm's innovativeness, proactiveness and risk taking behaviors, which are predominant factors in mitigating the challengers arising from competitive market for tea. In this study, consider the how external institutions related to tea industry and entrepreneurial competencies of owner/manager shape the EO tea manufacturing firms and how EO enhance the competitiveness of firm via innovations. Tea industry has undergone series of changes; smallholder sector has emerged as a leading group, low grown area has improved the production capacity substantially. Therefore, this study conducted in the low elevation tea manufacturing firms in Sri Lanka.

Chapter 3

Research Method and Data Presentation

3.1 Research Method of the Study

The aim of this research is to examine the external and internal determinant of EO with the level of firms EO and evaluate the outcome of EO in terms of innovation. Finally analyze how those factors are facilitating for competitiveness of tea manufacturing firms. The results obtain in the research will identify the influence of external and internal factors on EO and will identify the impact of EO on innovation.

The research methodology is based on both quantitative and qualitative methods. First, quantitative method is selected based on the research questions and aim of this research. Since research questions describe the investigation of relationships among variables of external relationships, competencies, EO and innovation. To analyze the relationships between variables, it is required to collect big amount of data and quantitative data analysis. In order to answer research questions, a survey is conducted. This research examines the primary data.

The data for research has been collected from tea manufacturing firms in low grown tea areas in Sri Lanka. The data has been collected during the period from February to March 2013. As of 2012, 702 tea factories were in operation in Sri Lanka, of which 425 were registered as producing low-grown tea. Purposive sampling technique was used to select the 109 sample based on two criteria. First, a chosen firm must be a private-sector firm. The Sri Lanka Tea Board categorizes each tea manufacturer, based on its ownership structure, as private sector, plantation, or state sector. These categories contributed 61%, 37%, and 2%, respectively, of national tea production in 2012 (Sri Lanka Tea Board, 2012). Second, a chosen firm must have been established for more than five years to ensure sufficient data for analysing the proposed relationships. This research intends to study about EO of tea manufacturing firms but it is hard to find published secondary data about background information of tea factories (population data) and owner/managers of those factories. Therefore, it will become one of research objectives in this study.

The information about tea manufacturing firms has been collected with structured questionnaire (Appendix 1). The questionnaire developed for empirical research, consist of the following;

- General information about the firm and background characteristics of owner/manager
- External relationship related to tea industry
- Owner/managers competencies
- EO measurement
- Innovations of tea manufacturing firms

A subjective measurement method that incorporated five point Likert scales was used to measure the each variable. In Management literature, subjective measurements were used to measure both dependent and independent variables (e.g. Man, et al., 2008; Stam and Elfering, 2008; Chandler and Jansen, 1992). Self-reported perceptions of business owners and managers are frequently used in entrepreneurship research, because those individuals are usually knowledgeable about the company's past and present plans and business situation (Hambrick, 1981). Further, empirical evidence has confirmed the validity and reliability of single-respondent, self-reported data. For example, Chandler and Hanks (1993) empirically found that self-assessments made by

owners and CEOs about business volume (earnings, sales, etc.) were highly correlated with historical sales figures.

The data about the firms is collected by one-to-one interview with owner or manager of the tea manufacturing firms. Before data collection, a pre-test was conducted to verify the face validity and content validity of the survey instrument. Accordingly, the questionnaire was modified to reduce the vagueness of the questions and the complexity of the responses. The relationships between variables are examined using statistical quantitative methods and techniques, which are performed with usage of SPSS software. Descriptive statistics shows the general information about variables and hierarchical multiple linear regression analysis is used to test the propose hypotheses.

Qualitative method is concerned about investigating the reasons behind specific phenomenon. Also it can be used to propose a new theoretical framework within any discipline. A case study method allows to investigate a contemporary phenomenon within a real-life context and in which multiple sources of evidence are used (Yin, 2003). Further case studies offer the opportunity for holistic view. Therefore, case study method is adopted to develop the theoretical model of the factors of competitiveness in tea manufacturing firms since case studies can be useful for theory generation. It means theory or theoretical framework first emerges through the inductive approach of studying an empirical case (Patton and Appelbaum, 2003). The following activities are undertaken in order to conduct useful case study emerges.

- Determine the aim of the study and tentative hypotheses
- Strategically select six successful tea manufacturing firms as cases that is relevant to the objective of the study and that will allow the subject to be fully investigated.
- Building initial theory through literature review
- Collecting and organizing the data; required data gather through conducting interviews with owners of tea manufacturing firms by using semi structured questionnaire, observing events, reviewing documents. Field work was carried during July to August 2014.
- Finally analyzing the data based on proposed model and developing theoretical model.

3.1.1 Study Location

This study was conducted in low elevation tea manufacturing firms in Sri Lanka. Low grown teas (low country teas) are generally cultivated below 600 m elevation and mainly found in Kalutara, Galle, Matara, Ratnapura, and Kegalla districts. According to the census conducted by TSHDA and Department of Census and Statistics, 109,814 Ha of tea lands are belonging to low elevation and it accounts 49.5% of the total tea extent of the country. Purposively Kalutara, Galle, Matara, and Ratnapura districts were selected as study location depending on highest extent of cultivation and production contribution by each district in low elevation. (See Table 3.1).

Tea cultivation was begun as large plantations but with the gradual changes of the economy, tea planting in small land blocks has become increasingly popular leading to the development of small holder sector in the country. At present, large plantations and small private estates mainly exist in high and mid elevations while small holders are dominant in low elevation. According to the censuses conducted by TSHDA, number of small holdings and extent rapidly increased during the period between 1994 and 2005. Main contributing factor was encouragement provided by government through subsidy and incentive schemes. Smallholdings extent increased

rapidly in districts of Ratnapura, Matara, Galle and Kalutara. Accordingly 69% of small holders owned tea land are located in Ratnapura, Matara, and Galle districts.

Table 3.1 Extent of tea cultivation and production in Low elevation

District	Total Extent ^a (Ha)	Extent of Smallholdings ^b (Ha)	Tea Production (kg)	Contribution to Low elevation production
Kalutara	7,171	7,587	17,357,166	8.59 %
Galle	25,629	25,325	48,793,613	24.41 %
Matara	23,704	22,971	44,289,223	21.91 %
Ratnapura	38,352	28,232	67,855,547	33.57 %
Kegalle	6,658	5,753	11,216,887	5.55 %

^a Source: Department of Census and Statistics, 2002, ^b Source: TSHDA Census, 2005
Source: Sri Lanka Tea Board, 2012

Kalutara district is located approximately 40 km south of the economic capital of Colombo. It covers 1,598 km² and population density is 772/ km². Galle and Matara districts are located in Southern province of the country. Galle district is situated on the southwestern tip of Sri Lanka, 119 km from Colombo. Its area is 1,652 km² and population density is 655/ km². Matara district is located on the southern coast of Southern Province, 160 km from Colombo. It covers 1,283 km² areas and population density is 637/ km². Ratnapura district is located in Sabaragamuwa province approximately 100 km south east of capital Colombo. Its area is 3,275 km² and population density is 334/ km². Comparatively it has low population density due to Sinharaja forest reserve and Udawalawe National park. Ratnapura is very famous for gem trade. Major export crops grown in these regions are Tea and Rubber while Cinnamon is grown as minor export crop.

The diversity of soil, altitude, climate, wind speed, change of seasons play important role in forming the taste of tea. Therefore, tea grown in Sri Lanka categorized in to main tea regions as Nuwara Eliya, Uva, Dimbula, Uda-Pusselava, Kandy, Sabaragamuwa and Ruhuna. Two regions namely Sabaragamuwa and Ruhuna are found in low elevation. Accordingly Ratnapura district belongs to low elevated agro-climatic zone of Sabaragamuwa. A large amount of rainfall and rapidly growing tea bushes contribute to produce variety of tea with a soft juicy tinge. Grade Sabaragamuwa enjoys a high reputation in locally and abroad due to unique qualities, mild taste and pleasant appearance. A distinct dried black leaf is one of the distinguishing features of this variety of tea. When brewed, it gives a deep red color with soft and mellow tinge. The best varieties of tea produced in these areas have found their niche in the tea markets of most European countries. Kalutara, Galle and Matara districts belongs to low elevation agro-climatic zone refers as Ruhuna. Teas grown in this region attribute to the distinct black tea leaves and special strong taste. Grade Ruhuna also has its special form of leaves and large granules. When brewed, it gives liquor with rich red color and strong flavor. Therefore, Ruhuna teas are excellent for those who like strong sweet tea with or without milk. Teas from these areas are very famous in the West and in the Middle East countries.

Table 3.2 Total number of Tea Factories in each District

District	Total number of Tea Factories in each District	Sample size
Kalutara	30	10
Galle	115	30
Matara	105	39
Rathnapura	110	30

Total 425 tea factories were registered at Sri Lanka Tea Board in 2012. As shown in Table 3.2, depending on the number of tea manufacturing factories in each district and willingness of the owner / manager of the firm to be interviewed, a proportionate sample was purposively selected respectively 30, 30, 39, and 10 from Rathnapura, Galle, Matara and Kalutara districts.

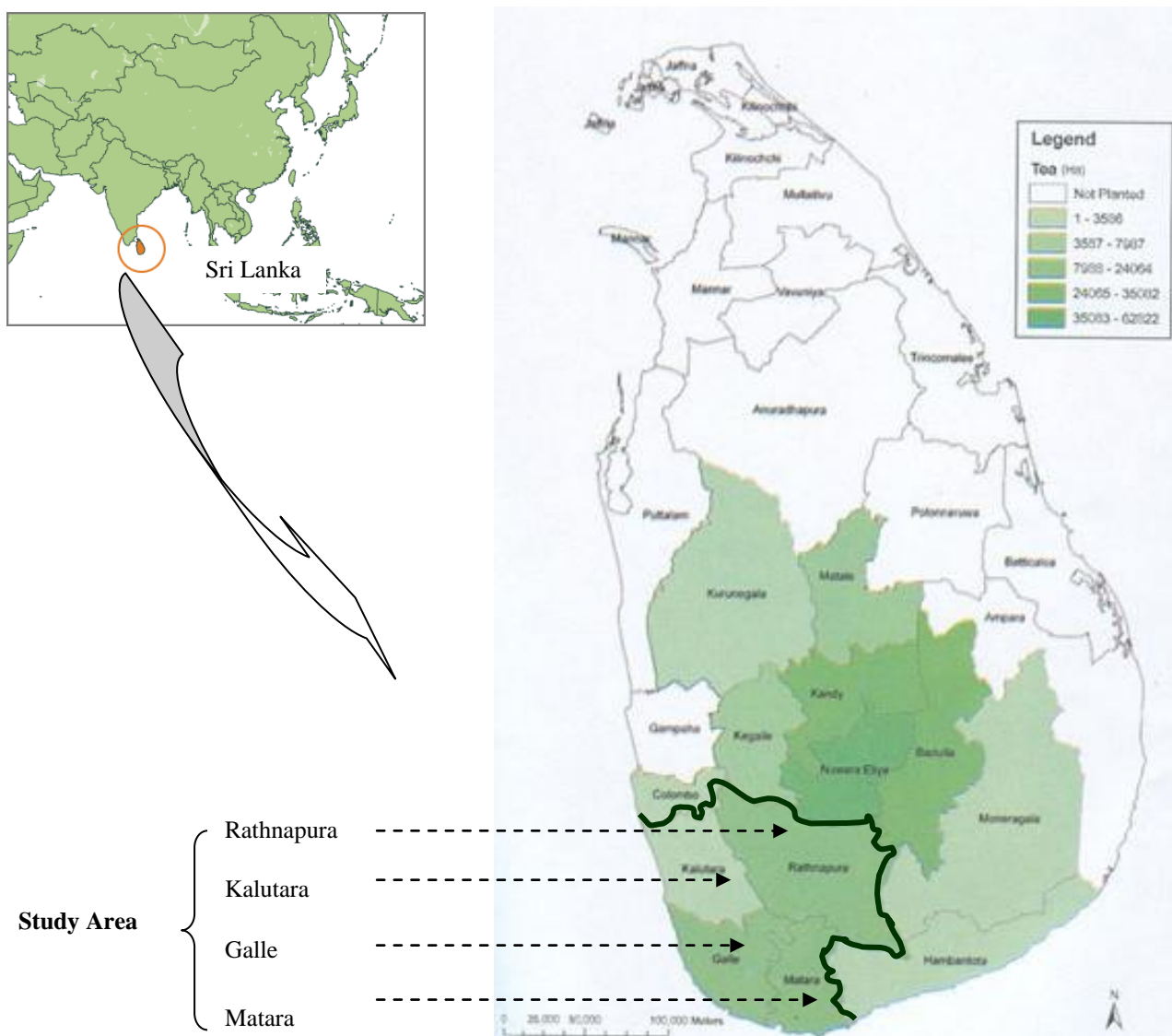


Figure 3.1 Research locations of low elevation tea grown areas in Sri Lanka

3.2 Data Presentation

3.2.1 Profile of tea manufacturing firms

This section describes certain characteristics of tea manufacturing firms used in this research as shown in Table 3.3. Smallholder farmers are dominant in low grown areas and they become the main supplier of green leaf to tea factories. Among them, 62% of the tea factories that engaged only in manufacturing bought green leaf, whereas the others use both own and bought green leaf.

Table 3.3 Basic Characteristics of tea manufacturing firms

Characteristics	Frequency	Percentage (%)
Category of tea factory		
Both own leaf and bought leaf	41	37.61
Bought leaf only	68	62.39
Method of tea manufacturing		
Only Orthodox	98	89.91
Both orthodox and CTC	11	10.09
Main products		
Black tea as Bulk	109	100.00
Tea packets	17	15.60
Green tea	2	1.83
Quality certificates ^a		
HACCP	21	19.27
CQC and SLS ^b	38	34.86
ISO 22000	18	16.51
ISO 9001	8	7.34
Other	15	13.76
Total number of employees		
< 50	7	6.42
50 – 100	48	44.04
101 – 150	29	26.61
151 – 200	13	11.93
> 200	12	11.01
Size (Monthly sales kg)		
< = 25 000	13	11.93
25,001 – 75,000	62	56.88
75,001 – 100,000	24	22.02
> 100,000	10	9.17
Ownership Structure		
Sole proprietorship	47	43.12
Partnerships	23	21.10
Private limited Company	39	35.78
Stage of business development		
Introductory	12	11.01
Growing	70	64.22
Maturity	23	21.10
Declining	4	3.67

Notes: ^a Some factories have more than one quality standard; therefore, the number of firms and the shares do not necessarily total.

^b CQC is Ceylon Quality Certificates and SLS is Sri Lanka Standards

Source: Author's survey data (2013)

When considering the green leaf purchase, all tea factories directly purchase green leaf from small holder farmers and additionally, 75% of them purchase from leaf collectors too. In compliance with the national situation, the tea produced in these factories is principally the orthodox type, and only 10% of factories also produce CTC tea. Their main product is black tea in bulk, whereas 15.6% and 2% of factories produce tea packets, and green tea respectively, as other products.

Similar to the national situation, all tea factories utilize the tea auction as their main marketing channel. In addition, 5% engage in direct export and 6% and 8% of factories utilize direct sales and resellers respectively, as the mode of disposal in the local market. Sri Lanka can be proud of being the one and only exporting country, which strictly adheres to ISO 3720 standard (minimum product quality) for each kilogram of tea export. Accordingly 43% of tea factories have achieved some type of quality standard. Moreover, 19% and 17% of factories have Hazard Analysis and Critical Control Point (HACCP) or ISO 22000 food safety certifications, respectively. In addition, 15% of factories are in the process of acquiring quality standards.

In terms of firm size, 70% of factories are medium size in accordance with the definition of SMEs by the National Development Bank of Sri Lanka, indicating that they have between 30 and 149 employees. Further when considering the amount of tea manufactured, majority (57%) of tea factories produce 25,001 to 75,000 kg of made tea per month and only 12% of them produce less than or equal 25,000 kg per month. While other (31%) tea factories produce more than 75,000 kg of made tea per month. With respect to ownership, 43% of firms are sole proprietorships, 21% are partnerships, and 36% are limited liability companies. In low country tea industry, 64% of the respondents consider that their industry is in the growing stage while only 4% of them mentioned that their tea factories are in declining stage.

3.2.2 Background characteristics of Owner/Manager

In this section we would like to describe the background characteristics of respondents of tea manufacturing firms in low country Sri Lanka in this research (see Table 3.4). Among them, 71% of were managers and 29% of were owners of tea manufacturing firms. Present age of owner/managers indicated that 62% of the respondents were between 36 to 55 years old, 17% belongs to 25 to 35 years old and only few (nearly 4%) of owner/managers are above 65 years. That implies majority of owner/managers are now in middle age of their career. When considering the starting age of their career, 49% of owner/managers were at below or near 35 years, 47% were between 36 to 55 years and only 4% of them were above 55 years old. That means half of owner/managers started their career as owner or manager in quite early age.

Education level of the respondents indicated that 77% have advance level qualification whereas 15% have University degrees and only 8% of them having ordinary level qualification. This indicates that nearly 90% of owner/managers are having better educational background. When considering the training received by the owner/manager before reaching the current position, it indicated that respectively 25%, 17% and 28% of them had received managerial, technical and both kind of training and 29% of them did not receive any training. That means majority (71%) of owner/managers received training before they become owner or manager of the tea manufacturing firm. Further, findings indicated most (60%) of owner/managers did not under gone any kind of training after they became to current position. However, respectively 15%, 9% and 15% of owner/managers have received managerial, technical and both kind of training. Findings emphasized that there is more tendency

to receive training before they becoming owner or manager in order to enhance their knowledge and technical knowhow in the tea industry.

Table 3.4 Background Characteristics of Owner/Managers

Characteristics	Frequency	Percentage (%)
Position of respondent		
Owner	32	29.36
Manager	77	70.64
Present age of Owner/manager (Years)		
25 - 35	19	17.43
36 - 55	68	62.39
56 -65	18	16.51
Above 65	4	3.67
Age at starting career as owner or manager (Years)		
Below or equal 35	53	48.62
36 – 55	51	46.79
Above 55	5	4.59
Level of Education		
Ordinary Level (1)	9	8.26
Advance Level (2)	84	77.06
Graduate (3)	13	11.93
Post Graduate (4)	3	2.75
Training received prior current position		
Managerial	27	24.77
Technical	19	17.43
Both	31	28.44
Neither	32	29.36
Training received after current position		
Managerial	17	15.60
Technical	10	9.17
Both	17	15.60
Neither	65	59.63
Prior business start-up experience		
Yes	28	25.69
No	81	74.31
Involvement of other business		
Yes	52	47.71
No	57	52.29
Active involvement of owner/manager (hours)		
Less than or equal 8 hrs	21	19.27
More than 8 hrs	88	80.73

Source: Author's survey data, 2013

Normally in most industries the experience of entrepreneur may helps to enhance the current business performance. Concerning the prior business experience of the entrepreneurs, only 26% were having business start-up experience prior to the current business. Majority of entrepreneurs in this study implies that tea manufacturing firm is their first business. Further, results showed that 48% of the entrepreneurs have been involved in other business in addition to tea manufacturing firm. It indicated that 30 entrepreneurs (27% of sample) are involving business related to tea industry such as having other tea factory, tea plantation, or

providing other inputs as packing material or fertilizer. That means they have tendency to expand their business by having forward and backward integration. When considering the active involvement of owner/manager to activities of tea manufacturing firm, it revealed that majority of owner/managers working more than 8 hours in tea manufacturing firm. That means they are highly committed to their business.

3.2.3 Entrepreneurial Orientation

The aim of this study is to understand the importance of EO to enhance the competitiveness of tea manufacturing firm by adopting innovations. Here, external relationships and entrepreneurial competencies were considered as the determinants of EO. Accordingly, EO was operationalized as innovativeness, proactiveness and risk taking and was measured by nine items, which were developed and test for reliability by Covin and Slevin (1989) by using five point Likert-scale ranging from 1 = strongly disagree to 5 = strongly agree as shown in Table 3.5.

Table 3.5 Measures and items of EO

Variables	Items	Min	Max	Mean	Stand. Dev.	Factor loadings*
Innovativeness	In general, my firm favors a strong emphasis on research and development, technological leadership, and innovations	1	5	3.30	1.190	.808
	In the past 5 years, my firm has introduced many new product lines	1	5	2.67	1.210	.760
	In the past 5 years, changes in my firm's product lines have been quite dramatic	1	5	3.29	1.328	.833
Proactiveness	In dealing with competition, my firm is often the first to initiate actions to which competitors then respond	1	5	4.04	.990	.821
	Very often, my firm is the to introduce new products, process, technologies, and administrative methods	2	5	4.09	.845	.900
	In general, my firm has a strong tendency to be ahead of others in introducing novel ideas or products	1	5	4.01	1.118	.808
Risk-taking	My firm has a strong preference for high-risk projects	1	5	3.28	1.434	.549
	I believe that, owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives	1	5	4.08	1.148	.918
	When confronted with a decision-making situation involving uncertainty, my firm typically adopts a bold, aggressive posture to maximize the probability of exploiting potential opportunities	1	5	4.17	1.169	.893

Source: Survey data, 2013, * Factor loading values of Principle component analysis

The scores of all respondents with respect to each dimension of EO were statistically summarized by using mean value in order to explain the behavior of dimensions of EO. As illustrated in Table 3.6, tea manufacturing firms have been classified in to high, moderate and low in all EO dimensions and overall EO according to their mean values. Accordingly, tea manufacturing firms are having comparatively higher proactive behavior and low level of innovativeness. Only 17% of firms show higher level of innovativeness while 47% of tea factories show higher level of proactive behavior and 39% of tea factories represent higher level of risk taking. Majority of tea manufacturing firms (48%) show moderate level of EO whereas, 34% of firms show higher degree of EO level.

Table 3.6 Categorization of Tea Manufacturing Firms based on level of EO

Dimensions of EO	Avg. Mean	Group by EO	Number of Firms	Percentage %
Innovativeness	3.09	Low	50	45.87
		Moderate	40	36.70
		High	19	17.43
Proactiveness	4.05	Low	7	6.42
		Moderate	51	46.79
		High	51	46.79
Risk-taking	3.85	Low	14	12.84
		Moderate	52	47.71
		High	43	39.45
EO	3.66	Low	20	18.35
		Moderate	52	47.71
		High	37	33.94

Note: Key used to categorize the firm; mean value <3 – Low, mean = 3 to 4 – Medium, mean > 4 – High

3.2.4 External Relationships

This section describes the external relationships of tea manufacturing firms with related to the tea industry. Accordingly, concern the relationships with tea brokering companies, green leaf suppliers, other tea factories, TSHDA, TB, NIPM, TRI and universities. Those relationships were categories in to four groups for study purpose according to the main services provided by each institution and way they involve to activities of tea manufacturing firms. Accordingly tea brokering companies and green leaf suppliers were categorized as supply chain partners. Other factories are competitors, so relationship with them was study as it is. TSHDA and TB were categorized as government facilitating institutions while NIPM, TRI and university were grouped as education and research institutions.

As depicted in Table 3.7, three measures as intensity, frequency and reciprocal service (Granovetter, 1985) was used to measure the relationship with each institution. Five point Likert scales was used to measure the extent of intensity, frequency and reciprocal services where 1 = no extent and 5 = very high extent. In questionnaire above measures were described as; Intensity (I) – Extent of concentration on each institution; Frequency (F) – Frequency of contact or getting service from each institution; Reciprocal Service (RS) – To what extent your firm engage in mutual or interactive service with each institutions.

Table 3.7 Operationalization of External Relationships

Variables	Institutions	Item code	Min	Max	Mean	Standard deviation	Factor loading*
Supply chain partners	Broker companies	BI	3	5	4.50	.675	.817
		BF	2	5	4.50	.555	.685
		BRS	2	5	4.39	.693	.779
	Suppliers	SI	3	5	4.51	.603	.676
		SF	2	5	4.46	.674	.682
		SRS	3	5	4.38	.664	.844
Other tea factories (OTF)		OtfI	1	5	2.45	.986	.863
		OtfF	1	4	1.95	.644	.814
		OtfRS	1	4	2.08	.722	.799
Government facilitating Institutions	TSHDA	TshI	1	5	2.30	1.101	.930
		TshF	1	4	1.77	.633	.898
		TshRS	1	5	2.01	.897	.819
	TB	TbI	1	5	3.86	.897	.853
		TbF	1	4	3.91	.442	.666
		TbRS	1	5	3.34	.863	.867
Education and Research Institutions	NIPM	NipI	1	5	2.96	.981	.893
		NipF	1	4	1.99	.500	.746
		NipRS	1	4	2.32	.744	.705
	TRI	TriI	1	5	3.11	.975	.889
		TriF	1	3	2.13	.546	.815
		TriRS	1	5	2.62	.803	.840
	University	UniI	1	4	1.30	.646	.949
		UniF	1	2	1.22	.416	.920
		UniRS	1	3	1.26	.534	.758

Source: Survey data, 2013, * Factor loading values of Principle component analysis

Table 3.8 summarized the mean values of intensity, frequency, reciprocal service and overall strength of external relationships. Accordingly, tea manufacturing firms having strong relationship (mean value = 4.46) with supply chain partners since suppliers provided the raw material and tea brokers mainly facilitating for sales. Additionally tea broker companies provide market information, valuation report about sold teas, storage facilities, financial assistance and consultation based on tea manufacturing firm's requirement.

Table 3.8 Mean values of External Relationships

Variables	Mean values			
	Intensity	Frequency	Reciprocal Service	External Relationships
Supply chain partners	4.51	4.48	4.38	4.46
Other tea factories	2.45	1.95	2.08	2.16
Government facilitating Institutions	3.08	2.84	2.67	2.87
Education and research Institutions	2.46	1.78	2.07	2.10

Source: Survey data, 2013

Relationships with government facilitating institutions are normal level (mean = 2.87). TB as the apex body, responsible for hygienic production of tea and they carried out several activities enhance quality of made tea. TSHDA is responsible for providing high quality green leaf for tea manufacturers. Tea manufacturing firms have low level of relationship with OTF as their main competitors. Further, tea manufacturing firms have low tendency to have good relationship with education and research institutions. It is clearly depicted by the mean value (2.10) which shows that relationship is low level. That emphasizes tea manufacturing firms normally not keen on involving research and development activities.

Table 3.9 External Relationships and Level of EO of tea manufacturing firms

Level of EO*	Mean of EO	Mean values of External Relationship			
		Supply chain partners	OTF	Government facilitating Inst.	Education and Research Inst.
Low	2.49	4.03	1.85	2.48	1.76
Moderate	3.53	4.48	2.00	2.81	1.91
High	4.48	4.65	2.55	3.29	2.55

*Key used to categorize the firm; mean value <3 – Low, mean = 3 to 4 – Medium, mean > 4 – High

Source: Survey data, 2013

Tea manufacturing firms were categorized in to three groups as low, moderate and high based on the firm's level of EO. Levels of external relationships of each category are shown in Table 3.9. Accordingly, firms which are having low level of external relationships illustrates low level of EO compare to firm's which having better (higher) external relationships. Since, availability of competitive information, physical and emotional support for their business process is depending on the strength of relationship and thereby influence on firm's EO strategies.

3.2.5 Entrepreneurial Competencies

Entrepreneurial competencies are important to react proactively in order to mitigate the arising challengers in business environment. Further, the policies and strategies of a business basically depend on the personal competency of entrepreneur. In this study, we defined entrepreneurial competency as abilities or underlying characteristic of an entrepreneur which required completing business successfully. An entrepreneur is describing as the person behind the successful strategies of the firm. We used categorization of entrepreneurial competencies by Man et al. (2002) as opportunity, organizing, strategic, relationship, commitment and conceptual competencies. The measures were selected and customized from survey tool developed by Man (2001). Competencies were measured using a five point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree (see Table 3.10).

Table 3.10 Measures of Entrepreneurial Competencies

Entrepreneurial Competency	Item code	Min	Max	Mean	Stand Dev.	Factor loading*
Opportunity Competencies						
Identify customers wants	OP1	2	4	3.13	.654	.800
Perceive unmet consumer needs	OP2	2	4	2.83	.664	.822
Actively look for products that provide real benefit to customer	OP3	1	3	2.46	.570	.723
Seize high-quality business opportunities	OP4	2	4	3.17	.674	.743
Relationship Competencies						
Develop long-term trusting relationship with others	R5	3	5	4.55	.553	.786
Interact with others	R6	3	5	4.64	.570	.517
Maintain personal network of work contacts	R7	3	5	4.51	.571	.671
Communicate with others effectively	R8	3	5	4.47	.646	.677
Conceptual Competencies						
Apply ideas, issues and observations to alternative contexts	Cp9	2	4	3.35	.762	.681
Integrate ideas, and observations into more general contexts	Cp10	2	4	3.24	.804	.792
Take reasonable job related risks	Cp11	1	4	3.31	.790	.532
Monitor progress toward objectives in risky actions	Cp12	1	4	3.56	.630	.594
Look at old problems in new ways	Cp13	1	4	3.28	.771	.742
Treat new problems as opportunities	Cp14	1	4	3.12	.825	.711
Organizing Competencies						
Plan the operations of business	Og15	3	5	4.40	.579	.704
Plan the organization of different resources	Og16	3	5	4.47	.537	.738
Keep organization running smoothly	Og17	3	5	4.39	.592	.695
Coordinate tasks	Og18	3	5	4.39	.576	.506
Organize people	Og19	3	5	4.43	.644	.652
Motivate people	Og20	2	5	4.08	.771	.748
Delegate effectively	Og21	2	5	3.93	.813	.589
Strategic Competencies						
Determine long-term issues, problems or opportunities	St22	3	5	3.80	.620	.756
Aware how industry changes might impact the firm	St23	3	5	3.55	.553	.638
Prioritize work in alignment with business goals	St24	3	5	4.31	.504	.683
Redesign the organization to meet long-term objectives	St25	3	5	4.14	.396	.613
Align current actions with strategic goals	St26	4	5	4.27	.444	.772
Link day-to-day tasks in the context of long-term direction	St27	3	5	4.03	.346	.572
Monitor progress towards the strategic goals	St28	3	5	4.17	.462	.672
Determine strategic actions by weighing cost and benefits	St29	3	5	3.59	.513	.697
Commitment Competencies						
Dedicate to make the venture work whenever possible	Cm30	2	5	4.42	.628	.826
Refuse to let the venture fail whenever appropriate	Cm31	3	5	4.21	.639	.788
Possess an extremely strong internal drive	Cm32	3	5	4.42	.657	.791
Commit to long-term business goals	Cm33	2	5	3.81	.601	.743

Source: Survey data, 2013, * Factor loading values of Principle component analysis

The scores of all respondents with respect to each variable were statistically summarized by using mean value in order to explain the behavior of each entrepreneurial competency as depicted in Table 3.11. According to the results, owner/managers shows highest competency in relationships and organizing while they have high commitment and strategic competencies too. However, their conceptual and opportunity competencies were rated near middle level. That implies owner/managers of tea manufacturing firms having ability to maintain better relationships with internal and external parties. Also they are competent to organize the human, physical, financial and technological resources of firm to achieve their objectives. Further, they have high capabilities to define, implement and evaluate the business strategies and highly committed to accomplish the success of business process. On the other hand, ability of recognizing promising opportunities and understanding complex information is normal level.

Table 3.11 Means of Entrepreneurial Competencies

Entrepreneurial Competencies	Mean Value
Opportunity Competencies	2.89
Relationship Competencies	4.44
Conceptual Competencies	3.31
Organizing Competencies	4.30
Strategic Competencies	3.98
Commitment Competencies	4.22

Source: Survey data, 2013

Table 3.12 shows the owner/managers personal competencies based on the firm's level of EO. Accordingly, firm's which owner/manager's having higher level of entrepreneurial competencies illustrates the higher level of EO.

Table 3.12 Entrepreneurial Competencies and Level of EO of tea manufacturing firms

Level of EO*	Mean of EO	Mean values of Entrepreneurial Competencies					
		Opportunity	Relationship	Conceptual	Organizing	Strategic	Commitment
Low	2.49	2.36	4.27	2.99	4.12	3.68	3.64
Moderate	3.53	2.70	4.33	3.17	4.15	3.84	4.10
High	4.48	3.43	4.69	3.68	4.60	4.34	4.69

*Key used to categorize the firm; mean value <3 – Low, mean = 3 to 4 – Medium, mean > 4 – High

Source: Survey data, 2013

3.2.6. Innovations of Tea manufacturing firms

3.2.6.1 Motivation for innovation adoption

Many theories suggested that innovation is essential to be competitive in a changing business environment. That is also applicable to tea industry and tea manufacturing firms that are not actively pursuing innovation are likely to lose in the competition. Each firm has their own reason or motivation for innovation adoption. As shown in Table 3.13, this study considered the following reasons as motivation for innovation adoption. To measure the level of importance of each reason five point scale was used where 1 = not important and 5 = very important. Findings revealed that commercial development is the main reason for innovation adoption. Other

important factors are financial rewards and new product idea and development. Competitor's actions and personal satisfaction are comparatively less important than above factors (see Table 3.13).

Table 3.13 Measures of Motivation for innovation adoption

Motivations	Item code	Min	Max	Mean	Standard Deviation
Commercial development	MI1	2	5	4.23	.715
Competitor actions	MI2	1	5	3.84	.945
Financial rewards	MI3	2	5	4.09	.800
New product ideas and development	MI4	1	5	4.06	.926
Personal satisfaction	MI5	1	5	3.80	1.169

Source: Survey data, 2013

3.2.6.2 Factors promoting Innovation adoption

In terms of factors promoting innovation adoption, this study concerns mainly two categories; buyer's information as demand side factor and research and development activities as supply side factors. Internal research and development and activities of research institutions were used to measure the research and development activities. Importance level of each factor was evaluated by using scale where 1 = not important and 5 = very important. As depicted in table 3.14, buyer's information is considered as important factor for promoting innovations adoptions in tea factories. However, research and development activities are rated at normal level.

Table 3.14 Measures of Factors promoting innovation adoption

Factors promoting innovation adoption	Item code	Min	Max	Mean	Standard Deviation	Factor loading*
Research and development activities						
Internal research and development	RD1	1	5	3.36	1.288	.884
Research institutions	RD2	1	5	3.26	1.125	.884
Buyers information	BI3	3	5	4.39	.609	

Source: Survey data, 2013, * Factor loading values of Principle component analysis

3.2.6.3 Level of Innovation adoption

This study concerned the three types of innovations as product, process and marketing as defined by Sundbo (2003). Different items were used to measure the level of innovation adoption in each type, as illustrated in Table 3.15. Respondents were asked to mention the newness or modification in product, process or marketing aspects during the last 5 years using the description below. For that five point scale was used where 1 = very low and 5 = very high. Results revealed that tea manufacturing firms were adopted process innovation (mean value = 2.83) comparatively higher than product and marketing. Adoption level of the product innovation rated at low level (mean value = 2.18) while marketing innovation adoption is very low (mean value = 1.59).

Table 3.15 Measures of Level of innovation adoption

Level of innovation adoption	Item code	Min	Max	Mean	Standard Deviation	Factor loading*
Product innovation adoption						
The volumes of modifications to existing products and products developed	P1	1	4	2.26	.956	.924
The speed of product modification and development.	P2	1	5	2.09	.938	.947
The speed to market of modified or new products	P3	1	4	2.19	.918	.896
Process innovation adoption						
The degree to which my firm develops new technology to improve operating processes	Pr1	1	5	2.80	1.129	.937
The degree to which my firm adopts new machines or methods to improve operating processes.	Pr2	1	5	2.86	1.166	.934
The degree to which my firm adopts new management practices to improve operating performance.	Pr3	1	5	2.82	1.056	.913
Marketing innovation adoption						
Modifications of existing marketing activities and new marketing activities we have conducted during the past 5 years	Mr1	1	5	1.59	1.029	

Source: Survey data, 2013, * Factor loading values of Principle component analysis

Sri Lanka tea industry is generally viewed as mature, slow-changing and relatively low technology industry. However, it is clear that innovation is essential to be competitive in the global market. As process innovations tea manufacturing firms have adopted following modifications such as automate the production process, implementing food factory concept and acquiring quality certificates, implementing new machinery, computerizing green leaf weighing system and information management system, implementing energy conserving techniques and reducing postharvest losses. As depicted in Table 3.15, tea manufacturing firms have low tendency to modify their products. As product modifications most of tea factories increase the quality of tea grades while only few of factories produce special tea grades, flavored tea, green tea, tea packets and unique tea grades. However, tea manufacturing firms have very low tendency to adopt alternative marketing channels other than main marketing channel of selling through auction. Further, Table 3.16 illustrates the level of innovation adoption of tea manufacturing firms according to different categories of firm's EO. That indicated that firm's which having higher level of EO facilitating for higher level of innovation adoption and vice versa.

Table 3.16 Level of EO and Innovation adoption of tea manufacturing firms

Level of EO	Mean of EO	Mean values of level of Innovation adoption		
		Product	Process	Marketing
Low	2.49	1.42	1.95	1.00
Moderate	3.53	1.89	2.48	1.17
High	4.48	3.00	3.78	2.49

*Key used to categorize the firm; mean value <3 – Low, mean = 3 to 4 – Medium, mean > 4 – High

Source: Survey data, 2013

In summary, the first part of this chapter provided the research design and research methodology of this study. Further, described the monograph of study location. In order to perform advanced statistical analysis, it is useful to have a reasonable understanding about the data set which is used in the analysis. The presentation of frequencies of data especially central tendency measurements used to explain the collected data. Therefore, data presentation section began with describing profile of tea manufacturing firms and back ground characteristics of owner/managers. Later part of this chapter presented the descriptive statistics of the measures and variables concern in this study such as external relationships, entrepreneurial competencies, EO and innovations. By using the data presented in this chapter, chapter four, five and six will test the hypothesis raised in the study.

Chapter 4

External Relationships and Entrepreneurial Orientation of Tea Manufacturing Firms

4.1 Introduction

Searching for new opportunities to increase firms' competitiveness is necessary when facing fierce competition. The entrepreneurial literature argued that entrepreneurial firms display more innovative, risk taking, and proactive behavior than rival firms because of their EO. Entrepreneurial action has been identified as vital component in economic growth (Schumpeter, 1947). This chapter examines the influence of external relationships on enhancing the EO of a firm.

Accordingly, upgrading the EO of tea manufacturing firms is essential because doing so will reflect their innovativeness, proactiveness, and risk-taking qualities—predominant factors in mitigating the challenges arising in the competitive tea market. Enterprise development is almost universally promoted in developing countries, and is a reasonable effort based on the emergence of entrepreneurs as an imperative mechanism to enhance economic growth (Kodithuwakku and Rosa 2002). According to Dasanayaka (2011), effective institutional support in Sri Lanka is primarily organized by product line. The following institutions are dedicated to improving the Sri Lankan tea industry: the Tea Research Institute (TRI), the Tea Small Holding Development Authority (TSHDA), the National Institute of Plantation Management (NIPM), and the Tea Board (TB). TRI is responsible for generating and transferring scientific knowledge and technologies appropriate for stakeholders to improve productivity and quality. Formal training programs are conducting by NIPM, adding to the accumulated knowledge available through work experience. TSHDA increases the productivity and quality of the tea smallholding sector through the provision of excellent support services, thereby providing quality green leaf to manufacturers. As the apex authority of the tea industry, the TB is responsible for hygienic tea production and factory modernization.

This study raises two guiding firm-level theories: the EO of the firm and the relational dimension of social capital theory. Entrepreneurial firms have been conceptualized as seizing the three main uniqueness characteristics of innovativeness, risk taking, and proactiveness (Covin and Slevin 1991; Miller and Friesen 1982). EO reflects the organizational process, methods, and styles that firms use to act entrepreneurially (Lumpkin and Dess 1996). The relational dimension of social capital concerns the types of relationships that individuals have developed through a history of interactions. Further, relational capital takes into custody the level at which an entrepreneur actually obtains informational, physical, and emotional support in the business process (Liao and Welsch 2005). Entrepreneurs who are able to establish strong relationships with external parties may develop competitive advantages over competitors that are unable or unwilling to develop such relationships (Dyer and Singh 1998). This study focuses on relationships with external institutions as related to the Sri Lankan tea industry.

Limited understanding exists about entrepreneurship in developing countries (Fairoz et al. 2010). Furthermore, studies on entrepreneurship in the Sri Lankan tea industry are rare and still in the growth stage. Hence, more in-depth studies emphasizing external relationships and entrepreneurship would assist in enhancing EO toward global competition in the tea industry. Empirical evidence exists on the independent effect of EO on

performance (e.g., Zahra and Covin 1995) and its contingent relationship with the external environment (e.g., Covin and Slevin 1989). However, only few studies have examined the extent to which a firm's embeddedness in inter-firm networks influences its EO (Simsek et al. 2003). Therefore, identifying how particular relationships enhance entrepreneurial behavior represents an important research agenda (Lee et al. 2001). According to Stam and Elfring (2008), studying the effect of different access to social capital on EO is worthwhile. This study seeks to fill this gap by examining how the relational dimension of social capital influences the EO dimensions of proactiveness, innovation, risk taking, and overall EO in a developing economy context.

This study investigated the degree of EO of tea manufacturing firms, the strength of their relationships with supply chain partners, other tea factories (OTF), government facilitating institutes, and educational and research institutes. This study also considers the level of entrepreneurial infrastructure received from each institution to enhance the EO of tea manufacturing firms. Therefore, the aim of this chapter is to understand the role of external institutions related to the tea industry to improve the entrepreneurial orientation of tea manufacturing firms in Sri Lanka. The specific objectives of this chapter are;

- To examine the relationship between external relationships and EO and its dimensions as related to tea manufacturing firms; and,
- To understand the relationship between entrepreneurial infrastructure and the EO of tea manufacturing firms

4.2 Theoretical Background and Hypotheses

4.2.1 Entrepreneurial orientation

It is evident that entrepreneurship has to do with combining resources in new ways such as introduction of new product with higher quality, new production methods, and breakthroughs in new markets etc. that disorder the market equilibrium in economic systems (Aloulou and Fayolle, 2005). Entrepreneurial firms strive to acquire competitive advantages by typically developing remarkable innovations and taking demanding risks (Miller and Friesen 1982). The concept of entrepreneurship described at the organizational level is called EO (Covin and Slevin 1991, Lumpkin and Dess 1996). Lumpkin and Dess (1996) argued that a firm's EO discloses the level at which it is capable of taking risks and engaging in innovation or being competitively aggressive.

In line with prior research, EO is defined as the process, structure, and behavior of firms characterized by innovativeness, proactiveness, and risk taking (Covin and Slevin 1989). Further, from the theoretical viewpoint, scholars have suggested that the dimensions of EO should be viewed as separate but allied constructs rather than as a single unifying characteristic (Lumpkin and Dess 1996, Lyon et al. 2000). According to Naldi et al. (2007) firms can vary in their degrees of innovativeness, proactiveness, and risk taking, making them not equally entrepreneurial across all dimensions. Accordingly, this research employed both the one-dimensional and the multi-dimensional aspects of EO.

Scholars have argued that innovation is the heart of entrepreneurship. The organizational imperative to introduce newness by adding value is described as an attribute of innovativeness. According to Lumpkin and Dess (1996), innovativeness reveals a tendency of a firm to actively seek new ideas, novelty, experimentation, and inspired solutions in pursuit of a competitive advantage. The concept of risk taking is well associated with entrepreneurship and can be described as the willingness of entrepreneurs to engage in calculated business-related risk (Brockhaus 1980). The tendency to take the initiative to compete aggressively with other firms is

called proactiveness (Covin and Slevin 1989). Proactiveness is an important organizational process because it entails a forward-looking perspective of the firm. Being a pioneer by anticipating and pursuing new opportunities and participating in emerging markets is a property of entrepreneurship (Lee et al. 2001). Therefore, EO may contribute to stronger performance by assisting a firm's capability in identifying innovative opportunities with potentially large returns and target market segments, and by obtaining first-mover advantages (Lumpkin and Dess 1996).

4.2.2 External relationships and EO

External relationships perform a vital role in identifying entrepreneurial opportunities. This identification encompasses relationships with various entities, such as customers, suppliers, competitors, or research institutions. External relationships provide advice, information, financial support, and other resources to entrepreneurial firms. Kale et al. (2000) used the notion of relational capital to express the quality of a network. Relationships obviously matter to entrepreneurs; however, to identify how they function requires an understanding of social capital (Cope et al. 2007). Nahapiet and Ghoshal (1998) defined social capital as "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social units." Further, they proposed that social capital is comprised of three dimensions: the structural dimension, the relational dimension, and the cognitive dimension. This study refers to the relational dimension of social capital.

The nature of the relationships that develop between parties is referred to as the relational dimension. This dimension is manifested in strong versus weak relationships (Nahapiet and Ghoshal 1998). Further, Tsai and Ghoshal (1998) argued that the relational dimension refers to entrepreneurs' direct relationships with others and the assets rooted in these relationships, such as trust. In addition to trust, the strength of a relationship is an important element within the relational dimension (Nahapiet and Ghoshal 1998), and is address in this study. The strength of a relationship is reflected in the combination of characteristics, such as frequency, emotional intensity, intimacy, and reciprocal services (Granovetter 1985). Parties are more willing to employ cooperative activities when developing mutual trust (Mair and Marti 2006). Cooke and Wills (1999) argued that relational capital facilitates the tacit exchange of information. Further, Lechner and Dowling (2003) emphasized that increasing relational capital can greatly enhance an enterprise's opportunities.

According to Gumusluoglu and Ilsev (2009), firms develop a wide range of relationships with different parties, such as cooperating with universities and research institutions for technical assistance and consulting and with public and private organizations to receive financial and technical assistance for their innovative projects. Further, collaboration with universities and research institutes provides a means to develop technical knowledge (Santoro and Gopalakrishnan 2000). According to Zimmerman and Zeitz (2002), external relationships facilitate access to valuable resources that support business growth and survival. In this study, relationships with external institutions are categorized as those with supply chain partners, OTF, government facilitating institutes, and educational and research institutes. On the basis of previous research, this study proposes receiving either knowledge or resource-based support from external institutions to enable interaction with other EO factors.

4.2.2.1 Entrepreneurial infrastructure

This study also focuses on the issue of entrepreneurial infrastructure for the entrepreneurial process. Covin and Slevin (1991) confirmed that entrepreneurial activities need to utilize large quantities of resources. According to Suzuki et al. (2002), entrepreneurs seek better and more professional services and financial and institutional support. Therefore, the infrastructure needs to be constructed to strengthen the technical and business expertise to help entrepreneurs take advantage of continually emerging venture opportunities. Further, government and policy makers need to remove barriers that prevent entrepreneurs from acquiring the needed management resources by creating or facilitating public and private institutions that support the business.

4.2.3 Research Hypotheses

The following research model (Figure 1) is proposed on the basis of the aforementioned theoretical background and that considers the objective of the research. This study attempted to examine the role of external institutions in improving EO of tea manufacturing firms in Sri Lanka. Thus, the following hypotheses are proposed.

H₁ Strong external relationships may enhance EO and its dimensions of tea manufacturing firms.

H₂ An entrepreneurial infrastructure has a positive influence on the EO of tea manufacturing firms.

Figure 4.1 depicts the association between external relationships and EO and its dimensions. The entrepreneurial infrastructure, such as financial support, information sharing, education and training, innovation development, consultation, research and development support, and networking facilities, and except for suppliers, are provided by external institutions

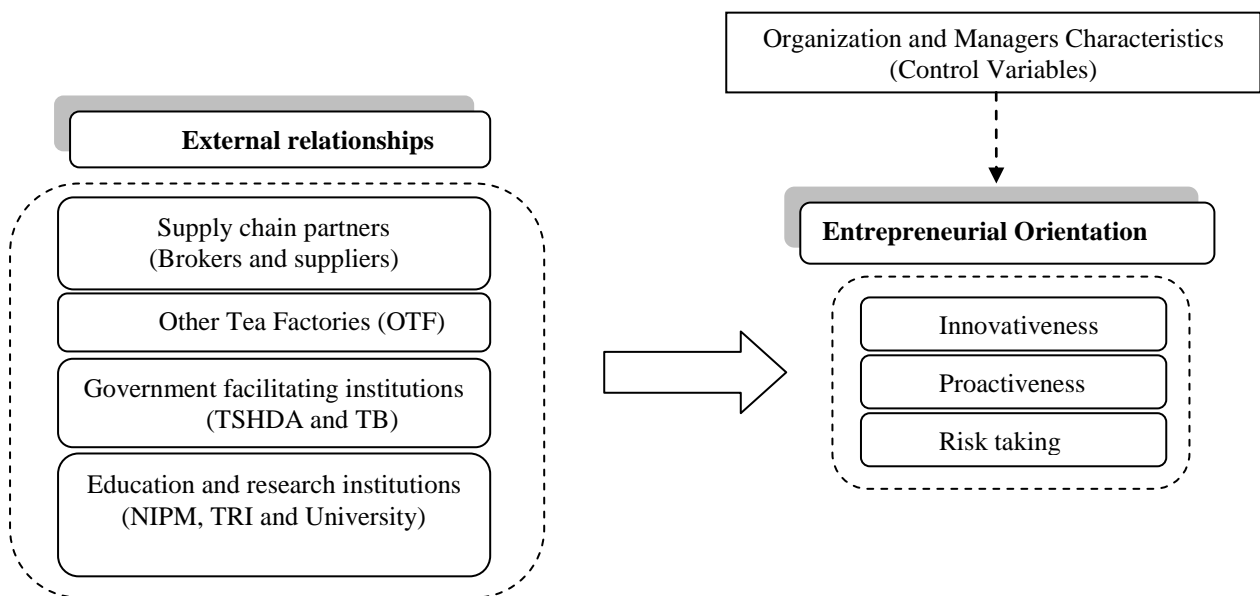


Figure 4.1 Model of associations between external relationships and the EO of the firm

4.3 Materials and methods

4.3.1 Sample and data collection

4.3.1.1 Instrument of measurement

Primary data were collected during a survey using a pre-tested self-administered structured questionnaire. A subjective measurement method that incorporated five point Likert scales was used to measure the each variable. Before data collection, we conducted a pilot study in which the owner/managers of four tea factories verified the understandability and content validity of the survey instrument.

This study defined external relationships through four variables, including relationships with supply chain partners, other tea factories, government facilitating institutions, and educational and research institutions. Green leaf suppliers and tea broker companies were categorized as supply chain partners. Government facilitating institutions have relationships with TSHDA and TB. The variable relationships with educational and research institutions consist of relationships with TRI, universities, and NIPM. Each relationship was operationalized as a compound of three measures: intensity, frequency, and reciprocal services (Granovetter 1985). To measure the extent of the intensity, frequency, and reciprocal services of each institution, a Likert scale was used, where 1 = no extent and 5 = very high extent.

We adopted the three dimensions of EO—innovativeness, proactiveness, and risk taking—to measure the EO that numerous studies documented as a high level of reliability and validity (e.g., Kreiser et al. 2002, Knight 1997). EO was measured using nine items, which were developed and tested for reliability by Covin and Slevin (1989) using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. This study used three items to measure innovativeness, three items to evaluate proactiveness, and three items to measure risk taking.

To measure the level of entrepreneurial infrastructure received from each institutional category, the infrastructure used by Suzuki et al. (2002) was adapted, including financial support, information sharing, education and training, innovation development, research and development, consultation, and networking facilities. A Likert scale, where 1 = very little extent and 5 = very high extent, was used to measure the level of benefits received from each institutional category.

4.3.1.2 Analysis unit and sampling technique

In line with the research objectives, a tea manufacturing firm is considered to be the unit of analysis. The target population of the study was tea manufacturing firms located at low elevations with the highest contribution (60% in 2012) to total tea production, in contrast to high and middle elevations. In 2012, 425 tea factories were registered with the Sri Lankan tea board. First, we selected four main districts—Rathnapura, Galle, Matara, and Kalutara—that make the highest contribution of low elevation production. A sample of 109 tea factories were proportionately taken from each district depending on the number of tea factories in each district and on the willingness of the owner or manager of the firm interviewed.

Empirical data were obtained through purposive sampling, which allowed the sample to fulfill two criteria. First, the firm should be a private sector tea factory. Second, the factory should have been established for more than five years. The respondents involved in this research are comprised of 109 owners or managers who had good awareness about past and present organizational practices. Those who agreed to participate were asked to answer the questionnaire.

4.3.2 Data analysis

Regression analysis was used to test the hypothesized relationship in the research model. This analysis allows for an assessment of how well the dependent variable can be explained by the values of the independent variables. Hypothesis H₁ was tested using hierarchical regression analysis, which allows for an examination of the set of independent variables and the dependent variable after controlling for the effects of other independent variables on the dependent variable. In stage 1, the control variables were entered as predictors of EO. Then, the main effect predictor variables of relationships (supply chain partners, OTF, government facilitating institutions, and education and research institutions) were entered. Hypothesis H₁ was tested by examining the significance of the model and the F-test associated with changes in multiple squared correlation coefficients (the R² values) of the two-step equations.

Before the proposed hypothesis was tested, regression analysis was performed to identify the control variables. Initially, organization and owners'/managers' characteristics, including size, availability of green leaf, stage of the firm, having other businesses, owners'/managers' education level, present age, training, and previous business experience were used as predictors of EO. Among them, the variables that significantly influenced EO and its dimensions were selected as controls in further analysis. Thereby, size, availability of green leaf, and owners'/managers' present age were used as control variables to test hypothesis H₁. Further, correlation analysis was used to test hypothesis H₂ and, thereby, determine the relationship between entrepreneurial infrastructure and EO.

As previously declared, the scales used to measure all of the variables discussed in this study appear in the literature and were used in several studies. Therefore, the validity and reliability of the scales is not a main issue in this study. Before proceeding to the main hypotheses, we assess whether the questionnaire yielded reliable results across population. To assess the reliability of the scale items, this study used Cronbach's alpha (see Table 4.1), which is a widely used measure of internal consistency. The Cronbach alpha coefficient of external relationships; supply chain partners (0.780), OTF (0.752), government facilitating institutions (0.806) and education and research institutions (0.834) surpass the 0.70 threshold recommended by Nunnally (1978). The results revealed that EO (0.833), innovativeness (0.720), proactiveness (0.783) and risk taking (0.682). Accordingly, the Cronbach's alpha coefficients for the variables were higher than or approaching the recommended level in Nunnally (1978) and indicated better internal consistency.

Construct validity of the scale items were tested by exploratory factor analysis using principle component method. Individual item reliability was examined using correlation between the items and constructs, as shown in the loading factors. Therefore, used scale items which factor loadings higher than 0.50 (see Appendix 2) to measure the each variable (Gumusluoglu and Ilsev, 2009).

4.4 Results and Discussion

4.4.1 External relationships and EO

This section describes the empirical evidence on external relationships and EO, and the dimensions of EO of tea manufacturing firms in Sri Lanka. Table 4.1 provides the descriptive statistics of the variables used in the analysis. A two-stage hierarchical regression analysis was used to test hypothesis H₁. In stage 1, the control variables (size, availability of green leaf, and owner/managers present age) were entered as predictors of EO. Next, the main effect predictor variables were entered. Table 4.2 shows the results of this analysis.

Table 4.1 Descriptive statistics of variables used for analysis

Variable	Mean	Standard deviation	Min	Max	Alpha value	No. of Items
EO	32.94	6.890	16	45	.833	9
Innovativeness	9.27	2.990	3	15	.720	3
Proactiveness	12.14	2.481	6	15	.783	3
Risk taking	11.54	2.949	3	15	.682	3
Relationship with supply chain partners	26.74	2.675	20	30	.780	6
Relationship with OTF	6.49	1.956	3	12	.752	3
Relationship with government facilitating institutions	17.19	3.560	7	27	.806	6
Relationship with education and research institutions	18.92	4.186	9	31	.834	9
Size (lnmonthly sales)	10.89	.590	9	13	n.a.	n.a.
Availability of green leaf ^a	258.19	14.464	238	277	n.a.	n.a.
Present age of owner/manager	46.66	11.334	25	85	n.a.	n.a.

Note: ^a Availability of green leaf = Extent of tea cultivation in district / Number of tea factories in each district

n.a. not applicable

As model 1 illustrates, the coefficient for the relationship between supply chain partners' relation and EO is positive and significant. Similarly, the coefficient for the relationship between the relation with government facilitating institutions and EO is positive and significant. These findings indicate that relationships with supply chain partners and government facilitating institutions have a significant influence on the EO of the firm. Further, the results of model 1 illustrate that the coefficient of the relationships with OTF is negative and the coefficient of the relationship with educational and research institutions is positive but does not significantly influence the EO of tea manufacturing firms. Normally, firms tend to build relationships with external parties for knowledge acquisition and resource acquisition. According to Brüderl and Preisendörfer (1998), social networks are supposed to be vital because they open up entrepreneurial possibilities by providing useful and reliable information. Therefore, by acquiring relational capital, firms tend to receive informational, physical, and emotional support for the business process. Although networks may facilitate the performance of entrepreneurial firms, not all relations do so equally (Peng and Luo 2000), as revealed by the findings of this study.

This section would describe how each relationship influence on EO of the tea manufacturing firms based on results of Table 4.2. As per model 1, the relationship with supply chain partners (coefficient = .259, $p < 0.01$) is positively and significantly related to the EO of tea manufacturing firms. Further, the results of models 2, 3, and 4 imply that the relationship with supply chain partners (the coefficients are .146, $p < 0.1$; .208, $p < 0.05$; and .281, $p < 0.01$) is positively and significantly related to the firm's innovativeness, proactiveness, and risk taking. Tea manufacturing firms have strong relationships with supply chain partners (mean value = 4.46) because they are tea brokers and green leaf suppliers. Tea manufacturers use the auction as their main marketing channel through tea brokers. Therefore, they are able to obtain detailed information from tea brokers' companies through tea valuation reports, weekly and monthly average tea prices, and buyers' special requirements. Having this information enhances the competitive behavior directed toward rival firms. This concept is in line with Hitt et al. (2001), who noted that information received from external relationships helps identify potential entrepreneurial opportunities. Further, tea broker companies have the propensity to provide financial support whenever tea

manufacturing firms undertake risky decisions, such as committing resources to ventures with uncertain outcomes or borrowing heavily, because doing so tends to increase the risk-taking behavior of the firm. Additionally, tea brokers facilitate the discovery of opportunities related to the tea industry and, thereby, enabling tea manufacturing firms to enhance their EO.

Table 4.2 Results of the analysis of external relationships and EO

	Dimensions of EO			
	EO Model 1	Innovativeness Model 2	Proactiveness Model 3	Risk taking Model 4
<u>Control variable</u>				
Size (lnmonthly sales)	.083 (.867)	.209** (2.185)	-.016 (-.155)	-.006 (-.056)
Availability of green leaf	.302*** (3.471)	.291*** (3.324)	.197** (2.095)	.245** (2.613)
Owner/manager present age	-.180** (-2.176)	-.179** (-2.149)	-.128 (-1.430)	-.132 (-1.480)
<u>External Relationships (Main effects)</u>				
Supply chain partners	.259*** (3.124)	.146* (1.755)	.208** (2.328)	.281*** (3.151)
OTF	-.111 (-1.256)	.043 (.488)	-.013 (-.139)	-.291*** (-3.071)
Government facilitating Institutions	.387*** (3.783)	.306*** (2.971)	.342*** (3.093)	.307*** (2.783)
Educational and research institutions	.016 (.137)	.001 (.009)	.084 (.669)	-.034 (-.276)
F Statistic	7.892***	7.632***	4.657***	4.832***
R ²	.354	.346	.244	.251
Adjusted R ²	.309	.301	.192	.199
Change in R ² ^a	.180	.094	.161	.166

Notes: Standardized coefficients are displayed in the table and t values are in parenthesis

Significance level * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

^a Difference in adjusted R² with and without external relationships in the model

Another supply chain partner concern in this study is green leaf suppliers who are primarily tea smallholder farmers that provide green leaf, the main raw material in the tea manufacturing process. To ensure a continuous supply of good quality green leaf, tea factories tend to develop their suppliers by providing financial support, fertilizer, transport facilities, technical expertise, and welfare facilities, ultimately enhancing the EO of tea factories. As revealed by the results indicated in Table 4.2, the availability of green leaf is positively and significantly related to EO and its dimensions of tea factories. Dyer and Singh (1998) argued that the ability to select the correct partners and maintain relationships with them is required to gain a competitive advantage through inter-firm relationships. Therefore, maintaining better relationships with supply chain partners is important because doing so tends to enhance the EO and its dimensions of firms.

Tea factories have weak relationship with OTF where mean value is 2.16. As illustrated in model 4, the relationship with OTF (coefficients is -0.291 , $p < 0.01$) is negatively and significantly related to the risk taking of tea manufacturing firms. Because OTF are competitors, information that indirectly reaches them through such relationships may mislead and be distorted (Ingram and Roberts 2000). As revealed by models 1, 2, and 3 (respectively, the coefficients are -0.111 , $p \geq 0.1$; 0.043 , $p \geq 0.1$; and -0.013 , $p \geq 0.1$), the relationship with OTF does not significantly relate to the EO and dimensions of innovativeness and proactiveness. When considering the benefits received from OTF, Table 4.3 revealed that information, innovation development, and research and

development support were not significantly correlated with EO, indicating that the relation with OTF tends to decrease the risk-taking behavior of tea manufacturing firms. Further, the findings of Nieto and Santamaria (2007) revealed that collaboration with a competitor negatively impacts the novelty of innovation.

When considering the relationship with government facilitating institutions, the direct actions or inactions of governments influence the level of entrepreneurship, particularly as a result of the government's regulations and policies. Government facilitating institutions related to the tea industry in Sri Lanka execute several programs that were geared to its development, such as financial support for tea factory modernization and process improvement, human resource development, enhancement of the quality of manufactured tea and green leaf, and others. As evident from models 1 to 4, the relationship with government facilitating institutions (the coefficients are, respectively, .387, $p < 0.01$; .306, $p < 0.01$; .342, $p < 0.01$; and .307, $p < 0.01$) is positively and significantly related to EO and its dimensions of tea factories' innovativeness, proactiveness, and risk taking. Therefore, the relationship with government facilitating institutions has a significant influence on EO and its dimensions. This result is in line with the findings of Doloreux (2004), who stated that cooperation with the government has a significant influence on a firm's innovation.

The relationship between tea manufacturing firms and educational and research institutions typically occurs with TRI and NIPM. In addition, tea factories tend to also have relationships with universities. The results of models 1, 2, 3, and 4 illustrate (the coefficients are .016, $p \geq 0.1$; .001, $p \geq 0.1$; .084, $p \geq 0.1$; and -.034, $p \geq 0.1$) that relationships with educational and research institutions are not significantly related to overall EO and its dimensions of the firm. Santoro and Gopalakrishnan (2000) argued that collaboration with universities and research institutions is a way to develop technical knowledge, an objective that a firm cannot accomplish singlehandedly. However, in this context, the findings show that the relationship with educational and research institutions does not significantly influence EO, possibly because tea manufacturing firms have weak relationships (mean value = 2.101) with educational and research institutions.

4.4.2 Entrepreneurial infrastructure

This section illustrates the level (mean values) of entrepreneurial infrastructure received by tea manufacturing firms from external institutions related to the tea industry in Sri Lanka. Correlation analysis was performed to identify the relationship between entrepreneurial infrastructures and a firm's EO, and results are shown in Table 4.3. Tea manufacturing firms received higher financial support from tea brokers (mean value = 3.99); however, this fact does not significantly correlate with EO because its intention is not specified. Yet, the objective of government financial support (mean value = 1.64) is clearly defined as enabling upgrades of the production processes of tea factories. The results of Table 4.3 revealed that financial support received from government institutions has a positive and significant relationship with EO.

The results of Table 4.3 indicated that information shared by brokers has a positive and significant relationship with EO because the detailed information that they share helps improve forecasts of future demand and estimated customer preferences, as revealed by Uzzi (1997). Further, Shane and Venkataraman (2000) argued that social capital might make it possible to obtain information, which is an essential factor of entrepreneurial opportunities. However, information shared by other tea factories and government facilitating institutions is not significantly correlated with EO. Normally, education and training assists in enhancing the managerial and technical expertise of owners, managers, and other employees. This finding shows that

education and training support received from government facilitating institutions is significantly correlated with EO.

Table 4.3 Level of benefits received and its correlation between EO

Benefits	Institutions	Brokers	OTF	Government Facilitating Ins	Educational and Research Ins
Financial support		.043 (3.99)	n.a.	.407** (1.64)	n.a.
Information sharing		.298** (4.02)	.155 (2.74)	.158 (3.30)	n.a.
Education and training		n.a.	n.a.	.216* (2.80)	.123 (3.16)
Innovation development support		.220* (3.28)	.047 (1.71)	.306** (2.46)	.137 (2.72)
Consultation		n.a.	n.a.	n.a.	.095 (3.00)
Research and development		.236* (2.20)	.049 (1.23)	.193* (1.47)	.324** (2.05)
Networking facilities		n.a.	n.a.	.321** (1.80)	.127 (1.59)

Notes: n.a. not available, significance level of correlation * $p < 0.05$, ** $p < 0.01$, mean values are in parenthesis
Scale: 1 = No extent and 5 = very high extent

The results of Table 4.3 illustrate that the innovation development support received from brokers and government facilitating institutions has a positive and significant relationship with EO. Government facilitating institutions launched several programs to upgrade the input (green leaf) quality and ensure the quality of manufactured tea as regulatory bodies. Similarly valuation report about teas provided by tea brokering companies facilitate for product and process improvements.

Research and development support received from tea brokers, government facilitating institutions, and educational and research institutions have a significant relationship with the EO of the firm, as shown in Table 4.3. Obviously, research and development support will accumulate technical and managerial expertise, which helps to enhance EO. Likewise, networking facilities initiated by government facilitating institutions are significantly correlated with EO because they assist in enhancing the accessibility of information and resources. Additionally, note that the entrepreneurial infrastructure provided by educational and research institutions are not significantly correlated with EO, except for research and development support in this context. This lack of correlation might be the result of the entrepreneurial infrastructure provided by institutions that is not in line with the requirements of tea manufacturing firms. As explained in this section, it is revealed that how entrepreneurial infrastructure received from external institutions facilitating for enhance the EO of tea manufacturing firms.

4.5 Conclusion

This chapter addressed the external relationships and EO of tea manufacturing firms in tea low grown areas of Sri Lanka. The findings indicate the importance of external relationships; in particular, relationships with supply chain partners and government facilitating institutions enhance the EO of tea manufacturing firms. However, relationships with OTF and educational and research institutions do not significantly influence firms' EO in the context of the Sri Lankan tea industry. This study reveals a positive and insignificant influence of relational capital on the EO of firms. Therefore, these findings are partially in line with previous research (e.g., Lee et al. 2001, Stam and Elering 2008) that stated that social capital allows firms to enhance their EO. This phenomenon can be explained within the context of the Sri Lankan tea industry. At present, significant competition exists for green leaf among tea factories. Further, the findings indicate that the availability of green

leaf is a strong influence on EO and its dimensions of tea factories. According to Schmitz (1995), cooperation among firms depends on their perceived costs and benefits. Therefore, we conclude that the relationship with supply chain partners and government facilitating institutions positively influence EO. In the Sri Lankan context, the relationship with competitors and educational research institutions does not significantly influence the EO of tea manufacturing firms.

When considering the dimensions of EO, innovativeness, proactiveness, and risk-taking behavior are significantly influenced by the relationship with supply chain partners and government facilitating institutions. Furthermore, risk-taking behavior is negatively influenced by the relationship with OTF. Therefore, among the dimensions of EO, risk taking is highly influenced by external relationships.

With respect to entrepreneurial infrastructure, the benefits received from tea brokers and government facilitating institutions are more likely to have positive relationships with EO, whereas the facilities received from educational and research institutions are less likely to be significantly correlated with EO. Therefore, governmental and institutional policy makers should consider the fundamentals of entrepreneurship and ensure that infrastructure requirements are created to strengthen firms' technical and business expertise.

The findings of this study show that relational capital provides external networks for the discovery of opportunities to test new product ideas and to attain resources, similar to the prior study of Lee et al. (2001). Therefore, relationships with external institutions can also improve a platform to enhance a firm's EO under favorable industry context is concluded. Aloulou and Fayolle (2005) argued that strengthening entrepreneurship is essential to responding to a changing globalized environment.

This study indicates that external relationships enable firms to enhance their EO, whereas research findings indicated that external relationships positively and negatively influence EO and its dimensions, particularly related to the tea industry in Sri Lanka. Further, the entrepreneurial infrastructure is positively linked with EO. Such empirical data make important contributions to the existing literature, particularly in explaining the role of external relationships with EO and its dimensions under a developing economic context.

This study has several limitations. We only examine the low country tea manufacturing firms; therefore, the results and recommendations are limited to within the industry context. Additional research that considers other industries would complement this study and enhance the generalizability of these findings. Further, the cross-sectional nature of this study may not have been the most appropriate approach because it fails to capture the dynamic interplay between relational capital and EO. Regarding the most advantageous external relationships, possibilities exist that institutions may want to have relationships with more entrepreneurial firms. Because this study did not analyze such trends, a longitudinal study may offer further remarkable insights.

4.6 Managerial and policy implications

The present study offers valuable insights for owner/managers and policy makers. The findings reveal that entrepreneurs can enhance their firms' EO by acquiring relational capital. To enhance the degree of EO of tea manufacturing firms in Sri Lanka, developing effective institutional support to obtain financial, human, and information resources for use when initiating new business opportunities to develop their external environment is necessary. Doing so enables firms to overcome the obstacles they face in the entrepreneurial process. Further, the findings imply that some entrepreneurial infrastructures provided by external parties are positively correlated with firms' EO. Therefore, government and non-government sectors need to arrange their facilities in line with

promoting the level of EO. At the same time, the findings reveal that external relationships with OTF have a negative influence on risk taking. Consequently, entrepreneurs need to fairly manage external relationships to minimize such effect.

Research institutions and universities are capable of sharing information and developing the technical knowledge that is important to enhance firms' EO strategies. However, the findings indicated that relationships with educational and research institutions are not significantly related to EO. Therefore, in the context of the Sri Lankan tea industry, the government needs to encourage research institutions and universities to assist tea manufacturing firms by focusing on their special requirements. Additionally, enhancing collaboration among government agencies and all stakeholders of the tea industry to enhance the productivity of tea lands and to ensure the quality of green leaf is needed because the availability of green leaf significantly influences the EO of firms and their dimensions. Further, government policies and rules need to be strengthened to avoid unhealthy competition among tea factories for green leaf.

Chapter 5

Entrepreneurial Competencies and Entrepreneurial Orientation of Tea Manufacturing Firms

5.1 Introduction

It is necessary to look for new opportunities since uncertainty of the future profit flows from current operations. Therefore, tea manufacturing firms possibly will advantage from adopting an “entrepreneurial orientation” (EO). It explains the firm’s motivation to innovate new market offerings, being more proactive for new marketplace opportunities than rival firms, and testing new and uncertain products and markets by risk taking (Covin & Slevin, 1989).

The environment is becoming ever more complex where the tea manufacturers are work today. Therefore, in order to diminish the negative consequence of the challenging business environment it is important that the entrepreneurs act proactively with the environment. Entrepreneurial competencies are becoming more important in order to take such proactive move towards the environment. During past few decades significance of entrepreneurial competencies has been increased due to the strategic role take part by the entrepreneur of a business enterprise. In practically, different levels of entrepreneurial competencies are revealed by entrepreneurs who found the business or add value through their effort (Bird, 1995). The hypothetical link between competencies and start, survival and growth of business implies the interest of entrepreneurial competencies (Bird, 1995).

One way of inspiring the economic growth of developing nations is supporting for entrepreneurial activities (Harper, 1991). This has led the Sri Lankan government to place emphasis on programs and policies to develop the tea industry. Although, the efficiency of these policies and programs are depend on a thorough understanding of owner/managers and how they operate. Of particular importance are owner/managers competencies. Man et al. (2002) mentioned that the most influential factors of small and medium sized enterprises performance are entrepreneurial characteristics such as, attitudinal, behavioral, managerial and technical competencies. Additionally Miller and Toulouse (1986b) found that strategic orientation of a business firm is affected by the influence of the chief executive officer (CEO). Further, business strategies are largely depending on entrepreneur’s personal competencies (Morris et al., 2005). Therefore, this study focuses on the entrepreneurial competencies which required carrying the business successfully.

In this study, entrepreneur is described as the person behind the booming strategic orientation and competency is defined as the abilities required accomplishing the business successfully. The competency approach is used to determine the influence of an entrepreneur through behavioral perspective. The total capability of entrepreneurs’ to perform the job role successfully is described as entrepreneurial competencies by Man et al. (2002). Additionally, competencies can be seen as behavioral and noticeable (Bird, 1995). As a result, competencies are learnable and possible to change. Therefore, it allows interference in term of the training and development of entrepreneurial process.

Entrepreneurs are challenged to set up their competencies in order to succeed in entrepreneurial actions. In the entrepreneurial literature discussion of competencies still in its early stage (Brinckmann, 2008). At present, a

few researches have been conducted to identify the relationship between managerial or entrepreneurial competencies and performance of the firm (e.g. Chandler & Jansen, 1992; Chandler & Hanks, 1994; Man et al., 2008). Hence further statistical validation is clearly the way ahead (Man et al., 2002). Further, according to Porter (1991), management will always have some authority on strategy and he explained that eventually, managers can generate and carry on competitive advantage by the constant innovation and upgrading of resources. It is still rare empirical studies which examine the link between owner/manager competencies and EO. This is the research gap seeks to fill by examining how entrepreneurial competencies influence on EO and its dimensions of proactiveness, innovation and risk taking in developing economic context.

In this chapter we examine the competencies of owner / managers of low country tea manufacturing firms in Sri Lanka in six competency areas as opportunity, organizing, strategic, relationship, commitment and conceptual competencies. Additionally examine the background characteristics of owner/manager and extent of EO of tea manufacturing firms. In this study owner/manager's basic capabilities are considered as background characteristics. Specifically, the objective of this chapter is to study the influence of owner/managers competencies on EO of tea manufacturing firms in Sri Lanka. The objectives of this chapter are;

- To examine the relationship between owner/managers background characteristics (basic capabilities) and entrepreneurial competencies.
- To analyze what extent entrepreneurial competencies have affect on overall EO and the dimensions of EO.

5.2 Theoretical Background and Hypotheses

5.2.1 Entrepreneurial Competencies

In a competitive business environment, the entrepreneurs are needed to be well competent in different areas such as attitudinal, intellectual, behavioral and managerial since the business process is considered to be very complex today. Therefore, role of entrepreneur in business venture is considered as curtail and it is studied through the competency approach. As a way of studying entrepreneurial characteristics, the competency approach has become popular (e.g. Bird, 1995; Chandler & Jansen, 1992; Men et al., 2002; Schmitt-Rodermund, 2004). Bird (1995) defined entrepreneurial competencies as primary characteristics such as basic and specific knowledge, motives, traits, self-image, roles and skills which required for business startup, survival and/or growth. Further she suggested competencies can be seen as behavioral and observable. Thus it can be learnable and possible to change through intervention such as selection and teaching of entrepreneurship (Man et al., 2002). The nature of entrepreneurial competencies indicated it as an important concept for improving entrepreneurship.

Additionally, previous researches have attempted to categorize these entrepreneurial characteristics into means of competency areas. Huck and McEwen (1991) found that most vital competency areas for Jamaican entrepreneurs are planning and budgeting, and marketing. Whereas, Chandler and Jansen (1992) emphasized that capability of identify and forecast taking advantage of opportunities and make to see firm creation through to end results are two competencies that essential for entrepreneurial role. By viewing the real behavior of an entrepreneur, the characteristics of entrepreneurial competencies can be investigated from process perspectives. Man et al. (2002) defined the entire capability of the entrepreneur to execute the job role fruitfully as the entrepreneurial competency and their work identified six major competency areas as; opportunity, organizing,

strategic, relationship, commitment and conceptual competencies. We exploit this categorization of entrepreneurial competencies for current study because of its comprehensiveness. Brief descriptions of these competencies are as follows;

- **Opportunity competency** - According to Man et al. (2002) opportunity competencies are relate to identify and developing market opportunities through different ways. Chandler and Jansen (1992) implied that the skill to spot and visualize taking advantage of opportunities as one of most vital entrepreneurial roles. Further, Shane and Venkataraman (2000) proposed that crucial notions of entrepreneurship are opportunity recognition and utilization.
- **Relationship competency** - According to Man et al. (2002) relationship competencies speak about to interactions, e.g., cooperation with environment, using relations, persuasive ability, communication and interpersonal skill. As described by Bird (1995) the relationship building is considered as entrepreneurial bonding, which comprises relationship making and reforming.
- **Conceptual competency** - Divers conceptual talents that are reflected in the entrepreneurial behaviors that are decision skills and consideration of complex information is described as conceptual competencies by Man et al. (2002). Further, Bird, (1995) express that ability in making cognitive and analytical thinking, learning, problem solving, sustaining temporal tension, and dealing with uncertainty are belong to this category.
- **Organizing competency** - Man et al. (2002) defined that competencies associated to the organization of diverse internal and external human, physical, financial and technological resources as organizing competencies. Further Chandler and Jansen (1992) found the implication of managerial tasks of an entrepreneur in human competence. Organizing competencies are generally alike to the managerial competencies recognized in the literature.
- **Strategic competency** - Entrepreneurs need to set the direction for whole company as the owner/manager. Man et al. (2002) describes setting, evaluating, and executing the strategies of the firm as strategic competencies. These competencies are comparable to strategic management; according to David (2013) it involves 1) setting mission, 2) define objectives based on this mission, subsequent an internal and external analysis, 3) originating strategy to accomplish these objectives, and 4) executing and appraising the strategy.
- **Commitment competency** – Having strong competency in committing, determining and taking positive actions towards their responsibilities and tasks is characterized by successful entrepreneurs. This equivalent to the entrepreneurial role of drive to see end results of the firms (Chandler & Jansen, 1992). Accordingly, Man et al. (2002) defined commitment competencies as the forces that entrepreneur to progress in advance with the business.

5.2.2 Antecedents of Entrepreneurial competencies

This study seeks to distinguish the influence of the antecedents of entrepreneurial competencies that have received attention in the entrepreneurship literature. It is important to observe education, previous work and industry experience as aspects that could influence the progress of entrepreneurial competencies (Bird, 1995). Maxwell and Westerfield (2002) argued that level of formal education and previous managerial experience influenced on the entrepreneur's innovativeness, which is part of competencies. Further, Krueger and Brazeal

(1994) mentioned that prior work experience could potentially improve skills and abilities of entrepreneurs mostly in identifying business opportunities. However, there is only little research that empirically observes the antecedence of entrepreneurial competency. For example, Chandler and Jansen (1992) found that education level of the business founder slightly contribute to the progress of own competencies while, self-assessed entrepreneurial competencies are not related with prior experience as founder. Based on these arguments, this study examines the influence of antecedence on entrepreneurial competencies of the owner/manager.

5.2.3 Outcomes of Entrepreneurial Competencies

Most of previous research empirically explored the relationship between entrepreneurial competencies and the performance of business firms (Chandler & Jansen, 1992; Chandler & Hanks, 1994; Baum et al., 2001). Further, some models were proposed by Herron and Robinson (1993) and Man et al. (2002) to clarify relationship of entrepreneurial competencies and performance. Previous studies have focused on identifying which skills are essential for successful entrepreneurial action; e.g., Chandler and Jansen (1992) have proposed that core of entrepreneurial competency is comprise the ability to recognize and pursue an opportunity. Specifically Chandler and Hanks (1994) emphasized that gaining entrepreneurial competencies requires entrepreneurs to accomplish the ability to spot and pursue distinctive opportunities and the capability to utilize the resources needed to be able to do so successfully. Further, Westerberg et al. (1997) suggested that CEOs importance in obtaining and developing knowledge, skills and abilities vital to a firm's success.

Some scholars have empirically identified the significant relationship between entrepreneurial competencies and firm performance. Chandler and Jansen (1992) investigated that founder's self-assessed entrepreneurial competencies have positive relationship with firm's growth. Chandler and Hanks (1994) also found growth of a business enterprise was directly correlated with the entrepreneurial competencies. Further, study of Baum et al. (2001) found that industry skill and technical skill which known as CEOs definite competencies have significant direct impact on growth of business, while organizational skill and opportunity recognition skill named as CEOs' general competencies have significant indirect influence on business enterprise growth.

5.2.3.1 Entrepreneurial Competencies and EO

Bird (1995) argues that critical factors of achieving the entrepreneurial success are outward look toward future, strategic focus and intentional postures. Further entrepreneurs make decisions about their entrepreneurial action depend on the judgments of their competencies. Therefore, it can be argued that competencies become critical in attaining better performance and/or success of a business firm (Bird, 1995; Chandler & Hanks, 1994). Increased levels of competencies do not automatically result in capability. Bird (1995) proposes that highly effective entrepreneurs are those that go beyond launch into business survival and growth and competencies essential to start on a venture or carry out a business idea may be visualized as "baseline". Some empirical studies have verified that CEO's personality behavior have vital impact on the decision making process and more or less directly on the firms strategic orientation (Miller & Toulouse, 1986 a, b; Miller et al., 1982). Further, Kotey and Meredith (1997) found that strategic orientation of a business was corresponded to certain profiles of personal values.

5.2.4 Research Model and Hypotheses

Based on the above literature, we suggest that entrepreneurial competencies of owner/manager influence on the EO of the firm. Therefore, the influence of the owner/manager is considered as critical and this is address through the competency approach. The present study describes individual characteristics that include both attitudes and behaviors as the entrepreneurial competencies, which permit entrepreneurs to achieve and maintain business success (Bird, 1995). Operationally, the categorization of entrepreneurial competencies by Man et al. (2002) is utilized in this study. Namely, there are; opportunity, relationship, conceptual, organizing, strategic, and commitment competencies. While the owner/managers basic capabilities such as experience, education, training, age can be seen as the antecedent of entrepreneurial competencies. Figure 5.1 explains the relationship between entrepreneurial competencies and EO.

As literature explains entrepreneurial competency is a personal construct and EO is a firm level construct. One way of improving entrepreneurial success is improving competencies. It implies that by utilizing owner/managers competencies properly can plan and work towards a firm's long term performance by adjusting entrepreneurial competencies which imitate motivation to innovate to new market offerings, be more proactive than rival firms for new market opportunities and take risks to test uncertain products and markets. The firms can hardly survive in fierce competition where those owner/managers are not capable enough. We propose the following hypothesis based on this argument;

- H₁ Background characteristics of owner/managers have positive influence on entrepreneurial competencies
H₂ Entrepreneurial competencies of owner/ manager would be enhancing the EO of tea manufacturing firms in Sri Lanka.

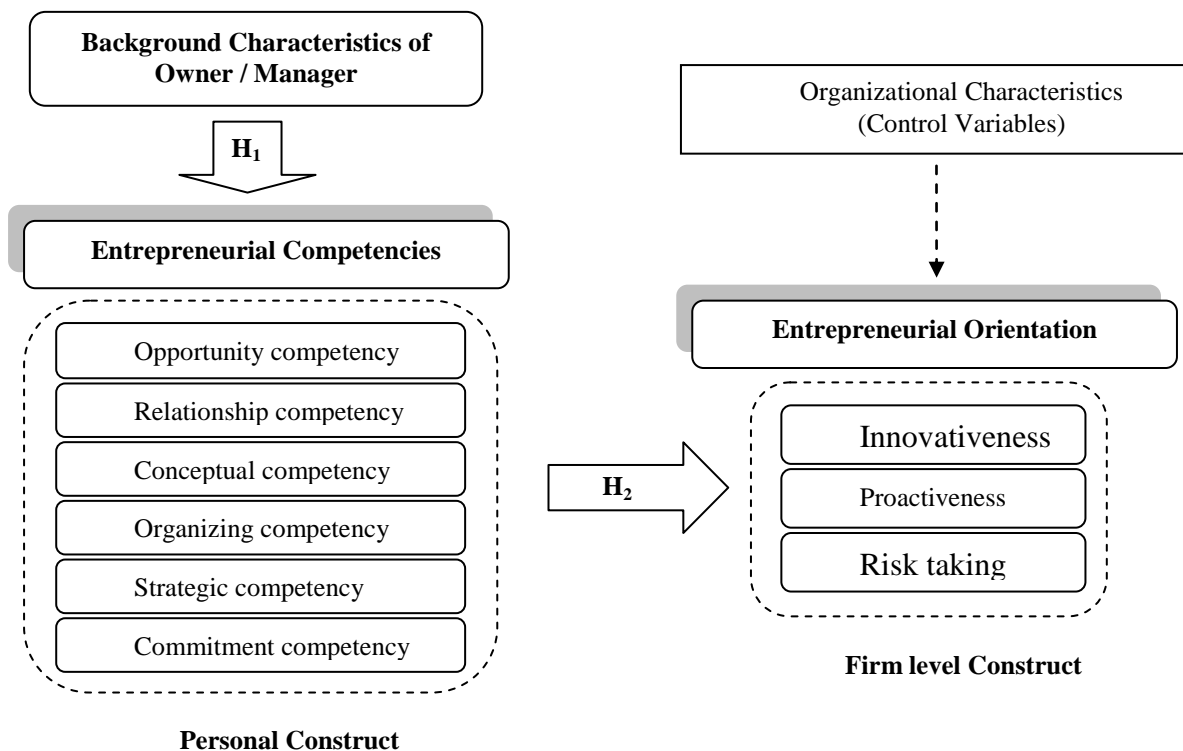


Figure 5.1 Research model of relationship between entrepreneurial competencies and EO

5.3 Materials and Methods

5.3.1 Sample and data collection

To examine the influence of entrepreneurial competencies on EO of tea manufacturing in Sri Lanka, this research was performed in selected low elevation tea manufacturing firms. As explained in chapter 4, same sample was used for data collection. Empirical data were obtained through purposive sampling, which allowed the sample to fulfill two criteria as described chapter 4. According to Hambrick (1981) self-reported perception of business owner/managers were used by entrepreneurship researchers since those individuals are usually quite knowledgeable about company strategies and business situation. Therefore, the respondents involved this research comprised of 109 owner / managers.

5.3.2 Instrument of Measurements

Primary data was collected by direct interviews with pre tested structured questionnaire. Since respondents were unwilling to provide information through other communication methods such as mail survey. To confirm the understandability and content validity of the survey instrument pilot study was carried out with owner/managers of four tea factories in study area.

All measures of entrepreneurial competencies and EO dimensions variables were drawn from the literature (measurements of EO were described in chapter four). Entrepreneurial competencies were operationalized as opportunity, organizing, strategic, relationship, commitment and conceptual competencies as categorized by Man et al. (2002). The measures used in this research were estimated to be behavioral in nature. Accordingly, the measures were selected and customized from survey tool developed by Man (2001). Previous researches that conducted in relation to entrepreneurial competencies were asked respondents to self-assess their own competencies (Chandler & Jansen, 1992; Chandler & Hanks, 1994; Lerner & Almor, 2002). Therefore, this approach was adapted in the present study. Competencies were measured using a five point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Further, owner/managers background characteristics (basic capabilities); present age, education level, prior training, training, prior business experience and having other business were assessed by using objective measurements.

5.3.3 Data analysis

Hypothesized relationships in the research model were tested by using regression analysis as explain in chapter four. The hypothesis H_1 was tested using multiple regression analysis while hypothesis H_2 was tested using hierarchical regression analysis which allows examining the set of independent variables and dependent variable after controlling for the effects of some other independent variables on the dependent variables.

As mentioned earlier, the scales used to measure the competencies drawn from literature. Before proceed main hypotheses, assess whether questionnaire yielded reliable result across population. As an indicator of internal consistency and reliability of the scales, coefficient alpha was calculated. It was revealed that all scales had coefficient alpha greater than 0.70 levels except relationship competencies (see Table 5.1). It implies that the reliability of the measurements was achieved as recommended by Nunnally (1978). Construct validity of the scale items were tested by exploratory factor analysis using principle component method as explain in chapter 4 (see Appendix 2).

5.4 Results and Discussion

5.4.1 Antecedents of Entrepreneurial Competencies

This section provided empirical evidence of background characteristics (basic capabilities) and entrepreneurial competencies of owner/managers. For informational purpose, Table 5.1 presented the descriptive statistics of variables which were used for analysis. Basic capabilities of owner/manager was measured by background characteristics such as present age, education level, prior training, training, prior business experience and having other business. The influence of the personal and background characteristics of owner/manager's on entrepreneurial competencies and EO are investigated by using multiple regression analysis and the results are shown in Table 5.2.

Table 5.1 Descriptive statistics of variables using for analysis

Variable	Mean	Standard deviation	Min	Max	Alpha value	No. of Items
EO	32.94	6.890	16	45	.833	9
Innovativeness	9.27	2.990	3	15	.720	3
Proactiveness	12.14	2.481	6	15	.783	3
Risk taking	11.54	2.949	3	15	.682	3
Opportunity competencies	11.58	1.983	8	15	.774	4
Relationship competencies	18.17	1.557	15	20	.577	4
Concept competencies	19.86	3.113	10	24	.764	6
Organizing competencies	30.08	3.000	24	35	.781	7
Strategic competencies	31.84	2.495	29	38	.795	8
Commitment competencies	16.86	1.988	11	20	.795	4
Present age	46.66	11.334	25	85	n.a.	n.a.
Education level	2.09	.553	1	4	n.a.	n.a.
*Prior Training ^a	.71	.458	0	1	n.a.	n.a.
* Training ^b	.40	.493	0	1	n.a.	n.a.
*Prior business experience	.26	.439	0	1	n.a.	n.a.
*Having other business	.48	.502	0	1	n.a.	n.a.
*Respondent - Owner	.29	.458	0	1	n.a.	n.a.
Size (Lnmonthly sales)	10.89	.590	9	13	n.a.	n.a.
Availability of green leaf ^c	258.19	14.464	238	277	n.a.	n.a.
*Ownership - Sole proprietorship	.43	.498	0	1	n.a.	n.a.
*Ownership - Partnerships	.21	.410	0	1	n.a.	n.a.
*Development Stage - Maturity	.21	.410	0	1	n.a.	n.a.

Note:* Dummy variables, ^a Training received by owner/manager prior becoming the current position, ^b Training received by owner/manager after becoming the current position, ^c Availability of green leaf = Extent of tea cultivation in district (ha) / Number of tea factories in each district, n.a. not applicable

The results revealed that present age of owner/manager was negatively effect on organizing and commitment competencies because with age entrepreneurs have a propensity to become less entrepreneurial (Cragg & King, 1988). Man, et al. (2008) also found that firms' competitive scope and performance tend to negatively influenced by present age of the entrepreneurs. Theoretically argues that education affects entrepreneurial ability. But, somewhat mixed results were found in empirical level regarding the relationship

between entrepreneurial ability and education. Some researchers were found there is no significant relationship between education and entrepreneurial performance (Watanabe, 1970; Dyke et al., 1992) and significant negative relationship with performance (Stuart & Abetti, 1990). Present study also found significant negative relationship with education level and opportunity competency of owner/manager. It is noticeable that influence of education varies depending on the nature of the industry. The present finding may be simply due to the nature of the industry since tea is not a high-tech industry.

Table 5.2. Regression results of Owner/managers characteristic and Entrepreneurial Competencies

Dependents Independents	Entrepreneurial Competencies						
	Opportunity	Relationship	Concept	Organizing	Strategic	Commitment	EO
Present age	-.050 (-.562)	-.082 (-.892)	-.028 (-.286)	-.198** (-2.179)	-.101 (-1.140)	-.232** (-2.509)	-.122 (-1.201)
Education level	-.183** (-2.097)	-.093 (-1.027)	.030 (.306)	-.061 (-.683)	-.051 (-.588)	.002 (.024)	-.086 (-.868)
Prior Training	.132 (1.465)	.253*** (2.712)	-.105 (-1.051)	.241** (2.618)	.140 (1.552)	.115 (1.229)	-.013 (-.123)
Training	.339*** (3.830)	.276*** (3.014)	.330*** (3.369)	.209** (2.318)	.354*** (4.011)	.289*** (3.156)	.180* (1.787)
Prior business start-up experience	-.080 (-.810)	-.120 (-1.182)	.161 (1.478)	-.046 (-.457)	-.027 (-.277)	-.082 (-.809)	.108 (.968)
Having Other business	.193** (2.278)	.147* (1.673)	.090 (.960)	.144* (1.668)	.246*** (2.904)	.144 (1.638)	.215** (2.231)
Owner	.351*** (3.719)	.253** (2.595)	.011 (.102)	.393*** (4.097)	.268*** (2.846)	.306*** (3.137)	.024 (.221)
F Statistics	6.435***	5.134***	2.579**	5.731***	6.534***	5.037***	1.738
R ²	.308	.262	.152	.284	.312	.259	.108
Adjusted R ²	.260	.211	.093	.235	.264	.207	.046

Note: Significance levels: t-statistics are shown in parentheses following the estimated coefficients, *p<0.1, **p<0.05, ***p<0.01, t values are in parenthesis

The results illustrated that training received by owner/managers was significantly influenced on all competency areas considered in this study. Whereas prior training was significantly effected on relationship and organizing competencies. The common ground of these training is that they are directly related the development of business skills and knowledge. Therefore, training enhances the above mentioned entrepreneurial competencies of owner/managers since competencies are learnable and possible to change. Further, study conducted by Alarape (2007) in small business found that owner-managers who had obtained entrepreneurship training have demonstrated comparatively better managerial performance than owner-managers who had not received training programs. This implies that training is crucial for enhance the entrepreneurial competencies of owner/manager.

When considering the prior business start-up experience of entrepreneurs, the results revealed that it have no significant relationship with competencies. Similar result was found by Chandler and Jansen (1992) that self-assessed entrepreneurial competencies were not significantly related to the prior business experience as founder.

That may due to application of a particular experience vary in diverse situations such as in different industries. Further, Covin et al. (1990) found that different industries required different forms of management practices. According to the results, entrepreneur involvement in other business significantly influence on opportunity, relationship, organizing and strategic competencies. The relationship between entrepreneurial competencies and involvement in other business is able to clarify by the reality that competent entrepreneurs have propensity to operate other business too.

The results showed that the characteristics of owners were significantly affected on all entrepreneurial competencies considered in this study except conceptual. It implies that normally managers possessed comparatively lower level of entrepreneurial competencies than owners of a business. A similar result was found by prior research conducted by Li (2009). Further, research on need for achievement found that comparatively managers have fewer morals in need for achievement than business owners (McClelland, 1965).

According to the results of Table 5.2, as proposed by hypothesis 1 (H_1), one or more background characteristics (basic capabilities) such as present age, educational level, prior training, training, having other business and respondent-owners significantly influenced on competencies considered in the study. Therefore, this research result supports hypothesis 1. That means basic capabilities of owner/manager influenced on entrepreneurial competencies of them. This findings in line with the Bird's (1995) model which suggested that the personal and background characteristics are antecedent of entrepreneurial competencies. Further, results of Table 5.2 indicated that overall model of owner/managers background characteristics and EO was not significant. Therefore, background characteristics of owner/managers are not directly influence on EO of the tea manufacturing firms.

5.4.2 Entrepreneurial Competencies and EO

This section includes empirical evidence on the entrepreneurial competencies and EO of tea manufacturing firms in Sri Lanka. Hypothesis 2 (H_2) was tested by two stage hierarchical regression analysis. In regression analysis stepwise method was used to identify the competencies which are significant influenced on EO and its dimensions. Chapter 4 revealed that firm size and availability of Green Leaf (GL) significantly influence on EO and its dimensions. Further, Man et al. (2008) found that firms in mature stage have strongest positive impact on performance. Therefore, firm size, availability of GL, and firms in mature stage were used as the control variables. In stage 1, the control variables were entered as predictors of EO. Next, the main effect predictor variables were entered and Table 5.3 shows the results of this analysis.

The results revealed that strategic and commitment competencies were positively and significantly influenced on EO of the tea manufacturing firms. Strategic competency reflects the owner/manager's visionary thinking and setting the direction for the business in order to make sure the long term performance. Therefore, owner/managers strategic competency is improve the firms EO strategies. Since, Kuratko et al. (1997) found that goal setting and drives are essential for business continuation not only in early phase of the business startup. Owner/manager's commitment competency reveals determining and taking positive action towards their responsibilities and tasks. Therefore owner/managers commitment competency enhances the EO of the firm. According to Ahmad et al. (2010) strong commitment is vital and it keeps entrepreneurs motivated to pursue their business goals regardless of obstacle imposes by the environment.

Table 5.3 Regression results of Entrepreneurial Competencies and EO

		Dimensions of EO		
	EO Model 1	Innovativeness Model 2	Proactiveness Model 3	Risk Taking Model 4
Control variables				
Availability of green leaf	.077 (.823)	.031 (.344)	.044 (.473)	.117 (1.181)
Size (monthly sales)		.112 (1.290)		
Main Effects				
Opportunity competencies				
Relationship competencies				
Concept competencies			.209** (2.127)	
Organizing competencies		.268*** (2.733)		
Strategic competencies	.263** (2.373)	.359*** (3.354)		
Commitment competencies	.320*** (3.092)		.329*** (3.126)	.284*** (2.870)
F Statistics	16.663***	18.167***	10.776***	7.272***
R ²	.323	.411	.235	.121
Adjusted R ²	.303	.389	.214	.104
Change of R ²	.198	.253	.180	.061

Note: Significance levels: t-statistics are shown in parentheses following the estimated coefficients, *p<0.1, **p<0.05, ***p<0.01, t values are in parenthesis

This finding further supported by previous studies as follows. Management literature suggested that the business strategies were influenced by the personal values of owner/managers (Kotey & Meredith, 1997; Schmidt & Posner, 1992). Also Man et al. (2002) argued that long term performance of the business firm is depending on the presence of strategic and commitment competencies of entrepreneurs. Further, Man et al. (2008) found that commitment competencies of entrepreneur have significant positive relationship with the performance of the firm.

When considering the dimensions of EO, the results illustrated that organizing and strategic competencies significantly affected on innovativeness of the tea manufacturing firms. It means owner/manager's competencies of operating various resources through organizing and directing them through proper strategic planning is positively related to the innovation of the firm. This result, consistent with Miller et al. (1982), that is CEOs internal locus of control positively correlate with the firm's tendency of innovation.

The results of Table 5.3 revealed that conceptual and commitment competencies are positive and significantly affected proactiveness of the firm. According to Bird (1995) the conceptual ability of entrepreneur is heavily influenced on the capability of thinking logically and dealing with ambiguity. Therefore, this implies that owner/managers ability of thinking out of box and commitment are highly influence on the competitive behavior directed toward rival firms. Further, results of Table 5.3 show that commitment competency significantly impacted on risk taking behavior of the firm. Evidently, prior to make business related decisions entrepreneurs evaluate the risk associated with it. Hence, owner/managers committed themselves to accomplish those targets once they made business decisions.

According to the results of Table 5.3, the changes in R² revealed that main variables of model 1, 2 and 3 have noticeably higher effect on dependents than control variables; whereas model's 4 effects of main variables

are comparatively lower. In hypothesis 2, we predicted that entrepreneurial competencies of owner/manager would enhance the EO of the firm. As explain in above (results of table 5.3), one or more of following competencies namely conceptual, organizing, and strategic and commitment positively influenced on EO and it dimensions. Therefore H₂ is supported.

However, opportunity and relationship competencies were not significantly influence on EO and it dimensions. It can be explained by assumption that these competencies may not eagerly relevant to the conceptualizing of the EO of tea manufacturing firms in Sri Lanka. Since Man et al. (2002) argued that entrepreneur's opportunity and relationship competencies have positive relationship with the competitive scope (external environment) of the business firm. Further, Man et al. (2008) found significant and positive effect of opportunity and relationship competencies on competitive scope. In addition Baum et al. (2001) found that CEOs opportunity recognition skill has an indirect relationship with venture growth.

5.5 Conclusion

This study addressed the owner/manager's entrepreneurial competencies and EO of tea manufacturing firms in Sri Lanka. The findings indicated that background characteristics (basic capabilities) of owner/managers influence on their entrepreneurial competencies. Other findings indicated that entrepreneurial competencies of owner/ manager are positively related to the EO and its dimensions. By these findings, basic hypotheses that are proposed in this study are proven.

Among background characteristics, training is positive and significantly affected on all competencies. Therefore, it is important to emphasis on training in order to enhance the entrepreneurial competencies. The finding revealed that in general tea factory owners have higher level of entrepreneurial competencies than managers. Additionally, background characteristics of owner/managers do not have direct relationship with EO and it indirectly influence on EO through entrepreneurial competencies.

This study implies that different combinations of entrepreneurial competencies of owner/manager namely conceptual, organizing, and strategic and commitment are positively influenced on EO and it dimensions. That means owner/managers entrepreneurial competencies are enhance the EO of tea manufacturing firms. Among owner/managers competencies considered in this study, commitment competency is more important since it enhance proactiveness, risk taking and overall EO of the firm. Since, according to Timmons (1978) successful entrepreneurs are generally observed to have remarkable amount of personal energy and ability to work long hours and high level of confidence. Secondly, influence of strategic competencies is important because it improve the firm's innovativeness and EO. Therefore, these entrepreneurial competencies can be considered as crucial aspects of entrepreneurship, and they have to have severe concern in EO. When considering the dimensions of EO, innovativeness was greatly affected by owner/managers competencies whereas risk taking was less likely affected by competencies. Therefore, it can be concluded that enhancing owner/managers competencies would leads to innovativeness and overall EO of tea manufacturing firms.

5.6 Managerial and policy implications

The present research findings have several inferences for theory and practice mainly for enhancement of tea manufacturing firms in Sri Lanka. Theoretical contribution of this research provides new insight to tea sector research in relation to the tea manufacturing firms in Sri Lanka to follow up related studies in entrepreneurship,

which make available more consistent data and interpretations in tea sector development. Further present study enriches the entrepreneurship literature by providing empirical data of significant relationship between owner/managers entrepreneurial competencies and EO and its dimensions.

It reveals that entrepreneurial competencies are crucial for EO and thereby success of the business firms, consequently these results propose relevant parties such as practitioners and policy makers should facilitate entrepreneurs to develop their own entrepreneurial competencies. Therefore identifying critical factors which enhance entrepreneurial competencies is beneficial for development activities of government and non-government sector. Further identifying important relationships of different competencies and EO and its dimensions will allow a more focused approach to design training programs to entrepreneurs. In fact, the findings point out that it is important to develop competent entrepreneur as similarly providing more resources and a positive environment. Further, the present study may also provide insight for owner/managers of tea manufacturing firms in Sri Lanka to assess their individual level of entrepreneurial competencies. Thereby they can determine their training requirement and it allows them to enhance competencies and adopt appropriate entrepreneurial strategies to mitigate the challenges arising in the global tea market.

Chapter 6

Entrepreneurial Orientation and Innovation: Empirical evidence from Tea Manufacturing Firms

6.1 Introduction

The tea industry has been considered the foremost agribusiness sector in the Sri Lankan economy for more than a century. At present, Sri Lanka is experiencing critical issue of maintaining its market share in the global market, compared to other tea exporting countries like Kenya and China as explained in chapter 2. In order to sustain the competitive position of Sri Lankan tea in the global market, innovation is essential. As argue by Herath and De Silva (2011) innovation is primary factor for winning the competitive market. Therefore, it is vital to identify how far tea manufacturing firms are innovated and what factors influence on firm's innovation.

To survive in the intensely competitive global market, all industries must innovate and adopt others' innovations (Santamaría et al. 2009). The logic behind this notion is that businesses must make use of new opportunities, develop new products or services, and market them to sustain a competitive advantage (Tajeddini, 2010). According to management literature, the capability of a firm to refurbish its market offers has become crucial as product and business model life cycles are shortening (Van de Ven and Poole, 1995). In principle, a firm has two options with regard to innovation. It can either adopt technologies and knowledge developed by other firms or generates its own original ideas (Damanpour and Wischnevsky, 2006). The adoption of innovation also contributes to a firm's effectiveness or performance (e.g. Damanpour, 1991). As scholars describe, this study also concern the innovation as means of changing an organization, where as response to changes or influence of environment.

In a highly competitive environment, firms can survive and become successful by means of innovation and proactiveness (Covin and Slevin, 1991; Porter, 1990). EO can be defined as a firm's readiness to innovate its market offerings; take risks to test new and uncertain products, services, and markets; and be more proactive than its competitors on the way to marketplace opportunities (Covin and Slevin, 1991). Conner (1991) argues that EO is the foundation of resource-based theory. Further, EO may facilitate a firm's ability to combine existing assets in novel ways to create a new product or service or move into new markets (Hitt et al., 2001). Further, Lumpkin and Dess (1996) argue that EO is a source of competitive advantage, since it reflects on the firm's organizational process and decision-making approach. Studies have found that EO contributes to firms' survival and performance (e.g. Barringer and Bluedorn, 1999).

At present Sri Lankan tea is face enormous competition from countries like; Kenya, China, India and Vietnam. Tea manufacturing firms need to be more concern about the innovative strategies for their product, process and market when competition is high. In view of this background information, this study ascertains the relationship between EO and innovation which is core of firms' competitiveness.

Entrepreneurship research related to the Sri Lankan tea industry is rare and still in the growth stage. Empirical research related to entrepreneurship and innovations has centred mainly on developed countries (Hitt et al., 2001). Several empirical studies have supported the contention that EO affects performance and that the effect fluctuates based on external environments (e.g. Covin and Slevin, 1989; Zahra and Covin, 1995) and internal firm resources (Brush et al., 2001). Past research on innovation in organizations has studied the

determinants (Nystrom et al., 2002) and consequences (Rogers, 1995) of innovation. According to Hurley and Hult (1998), additional work is required to rectify the construct of entrepreneurship and innovation. Bommer and Jalajas (2004) suggest that factors which promote different types of innovation (e.g. product innovation and process innovation) must be studied. Then it would help to arrange difference in sources preference for each type of innovation.

Scholars have emphasised that the dimensions of EO may vary independently (Lumpkin and Dess, 1996). Therefore, further research may explore the multidimensional construct of EO by considering the independence of its dimensions (Lumpkin and Dess, 2001). The present study attempts to fill this research gap as follows; first by ascertaining how dimensions of EO such as innovativeness, proactiveness, and risk taking individually influence various types of innovation. Second, this study focuses on relationship between factors promoting innovation adoption and different types of innovation in developing economic context. In this study we investigate the level of innovation as product, process, and marketing, importance of factors promoting innovation adoption and extent of EO of tea manufacturing firms in Sri Lanka. Specifically, the objectives of this chapter as follows;

- To examine the various types of innovation adopted by tea manufacturing firms in Sri Lanka
- To analyze the relationship between factors promoting innovation adoption and different types of innovations
- To ascertain the influence of the individual dimensions of EO on the various types of innovation adopted by tea manufacturing firms

6.2 Theoretical Background and Hypotheses

6.2.1 Innovation

Maintaining a sustainable competitive advantage in a competitive market is the most crucial problem faced by business organizations today. Many scholars have argued that innovation is the main source of competitiveness (Caird, 1994). At the beginning of the twentieth century, the term ‘innovation’ was introduced by Schumpeter, who argued that innovation is the creation of new combinations—product, process, and organizational change—that are important for success in business (Schumpeter, 1947). Scholars have studied innovation in many disciplines and defined it from various viewpoints.

This research focuses on innovation in organizations. In this field, innovation is defined as the development and exploitation of new ideas or behaviours by an organization and can generate a new product, service, or production process, spur entry into a new market, or cause the adoption of a new organizational structure or managerial system (Damanpour and Wischnevsky, 2006). According to Carlsson et al. (2002), innovation by a firm is an interactive process that requires the generation, adoption, implementation, and integration of new ideas and practices within the firm. Further, innovation can even be any slight improvement in product, process, or organization (Johannessen et al., 2001). Here, the key concern of innovation is whether it takes place with new elements or a new combination of existing elements. Therefore, based on the above arguments, an operational definition of innovation for the purposes of this study is the development of a new product, process, or market or the improvement of an existing product, process, or market.

An innovation may be generated or adopted by an organization. The main property of all definitions of innovation is newness. Generation of innovation is a process which yields a new product, service, program, or

technology that is new to an organization or the entire world. Adoption of innovation takes place when this new outcome is acquired or imitated by other organizations (Damanpour and Gopalakrishnan, 1998). In other words, adoption of innovation is the assimilation of a product, service, or technology which is new to the adopting organization. Organizations can sustain their effectiveness and competitive positions by adopting others' innovations to adapt to changing environments (Damanpour and Wischnevsky, 2006). The adoption of innovations is attractive, since innovations uplift the adopting firms and improve their organizational performance (Dos Santos and Peffers, 1995).

As pioneer of innovation theory Schumpeter argued that innovation is a new combination of production function in order to obtain potential excess profits. Various types of innovations are described in the literature: product, process, and marketing innovation (Sundbo, 2003). Product innovation is any good or service that is perceived by someone as new. As explained by Sundbo (2003), the introduction of a new product into a market is a product innovation. Further, Shepherd and Ahmed (2000) define product innovation as the ability to provide a customer's desires, which can produce a reasonable price for both customer and supplier in the shortest possible time. Process innovation refers to the adoption of a new production process that implements new technologies or new work routines. The entry into new territorial markets and new segments within existing markets is known as market innovation. Further, market innovation indicates a firm's new market behaviour, such as new strategies, new markets, new alliances, and so forth (Sundbo, 2003). Porter (1990) describes innovation as a source of competitiveness; therefore, it is evident that innovation is a necessary element for sustaining a firm's success. This study mainly focuses on three types of innovation adopted by tea manufacturing firms in Sri Lanka in the developing economic context: product, process, and market innovation.

6.2.2 Factors promoting Innovation Adoption

New idea or stimulation for innovation is the one of decisive component of innovation (Bommer and Jalajas, 2004). The sources of innovations decides the capabilities that firm must possess in order to achieve the market place success since it is considered as important factor to adopt innovations (Zahra and Covin, 1994). New ideas derive from a range of sources and in this study we define them as factors promoting innovation adoption. These innovation factors either originate within the firm or accessed external to the firm. Normally firms tend to complement their capacity to produce knowledge internal by exploiting knowledge from external sources of innovation (Yam, et al., 2011). According to Fey and Birkinshaw (2005), a fertile innovation environment relies on a constant inflow of knowledge from other places. Further, firm's capability to access and exploit new ideas and its existing knowledge is determined the value of each factor (Yam, et al., 2011).

Studies conducted in this area found that different factors are promoting innovation and varied wildly across different industries. It means importance level of users and manufacturers as determinant of product innovations is depend on the type of industry (Von Hippel, 1988). Güngör and Gözlü (2012) found research and development activities, licensed technology, formal training and manager's experience as the significant internal determinants of innovation. According to Yam, et al., (2011) cooperation with universities, research institutions and consultancy firms can be considered as the external factors of innovation especially for firm's technology sourcing activities. Further, MacPherson (1997) found that use of external sources of scientific and technical expertise has a positive connection with innovation success of the firm. Additionally it cited advice from suppliers, customers, distributors and informal business networks as other useful sources. The organization's

rate and speed of innovation adoption is depending on selection of different factors promoting innovation. This study concern the research and development activities as supply side factors and buyer information as demand factors of promoting innovation adoption of tea manufacturing firms.

6.2.3 Innovations and the tea industry

Creating business value is the main purpose of innovation, which could be in the form of improvement in an existing product, creation of a new product, reduction of production cost, and so forth. Innovation is essential for the tea industry to compete in the global beverage market. Ongonga and Ochieng (2013) studied innovation strategies adopted by Kenyan tea firms and the performance of those firms. Their findings reveal that the firms' innovations increased revenue and decreased labour cost.

A study by Ganewatta et al. (2005) reveals that the export supply of value-added tea is moderately responsive to its relative price. Further, they argue that expanding the number of tea varieties would help increase Sri Lanka's export share in the global market. Ariyawardana (2003) conducted a study of Sri Lankan firms that produce value-added tea, which reveals that strengthening a firm's sources of competitive advantage is essential to improving its performance in the face of emerging competitive pressures in the global tea industry. Research conducted by Herath and De Silva (2011) about the value-added tea industry in Sri Lanka highlights that a firm's capabilities and innovations are essential for value-added tea export firms to succeed and contribute significantly to the Sri Lankan economy. Further, they argue that combining innovative efforts with an appropriate strategy is fundamental to gaining a competitive advantage. Therefore, it is essential to identify to what extent Sri Lankan tea manufacturing firms are innovating and what factors motivate them to innovate.

6.2.4 Entrepreneurial orientation and Innovation

The concept of EO is entrepreneurship defined at the firm level, and it refers to a firm's strategic orientation, which is relevant to the firm's specific entrepreneurial characteristics of decision-making approaches, methods, and practices (Lumpkin and Dess, 1996). EO represents an organizational phenomenon that reflects a firm's proactive and aggressive plans to adjust the competitive environment to its advantage (Atuahene-Gima and Ko, 2001). Several scholars have argued that EO is a combination of three dimensions: innovativeness, proactiveness, and risk taking. Hence, EO is defined as a firm's willingness to innovate market offerings; to take risks to try out new and uncertain products, services, or markets; and to be more proactive than its competitors with regard to new opportunities in the marketplace (e.g. Covin and Slevin, 1989, 1991; Knight, 1997; Zahra and Covin, 1995). The combination of these three dimensions means that EO stands for the response of firms to future or probable market needs.

Miller and Friesen (1983) reveal that under turbulent conditions, firms which demonstrate more adaptability, innovation, and entrepreneurship are more successful than their competitors. Accordingly, the ability to initiate change, take risks, and innovate distinguishes an entrepreneurial firm (Naman and Slevin, 1993). EO is viewed as an incremental process within the firm from which innovation results (Hult et al., 2004). Further, Slater and Narver (1995) argue that entrepreneurial values enhance the formation of new business within an existing firm and the regeneration of existing businesses that require transformation to sustain their competitive positions. According to the entrepreneurial view, innovation is the essence of independent firms which act as major agents of change in their industries (Stevenson and Jarillo, 1990). EO emphasizes the

strength of creating new business and rejuvenating stagnant businesses by the introduction of breakthrough innovations (Lumpkin and Dess, 1996). Innovation is an intrinsic state in the sphere of entrepreneurship; a firm's ability to successfully introduce new products, processes, or markets should be considered in parallel with its entrepreneurship (Avlonitis and Salavou, 2007). These points emphasize EO's antecedent role in innovation.

6.2.5 Research hypotheses

The aim of this study is to examine the effect of EO on the adoption of innovation by Sri Lankan tea manufacturing firms. The research model shown in Figure 6.1 and the following hypothesis, based on that objective and the theoretical background of this study, are proposed:

- H₁ Factors promoting innovation adoption are enhancing the innovation of tea manufacturing firms.
- H₂ The dimensions of EO (innovativeness, proactiveness, and risk taking) are positively related to the innovation of tea manufacturing firms in Sri Lanka.

Figure 6.1 shows the relationships between EO, innovation and factors promoting innovation adoption. EO is encompassing of three dimensions as innovativeness, proactiveness and risk taking, where as innovation is consist of three variables namely product innovation, process innovation and marketing innovation. In this study, research and development activities which comprise of internal research and development and research institutions and buyers information are considered as factors promoting innovation adoption.

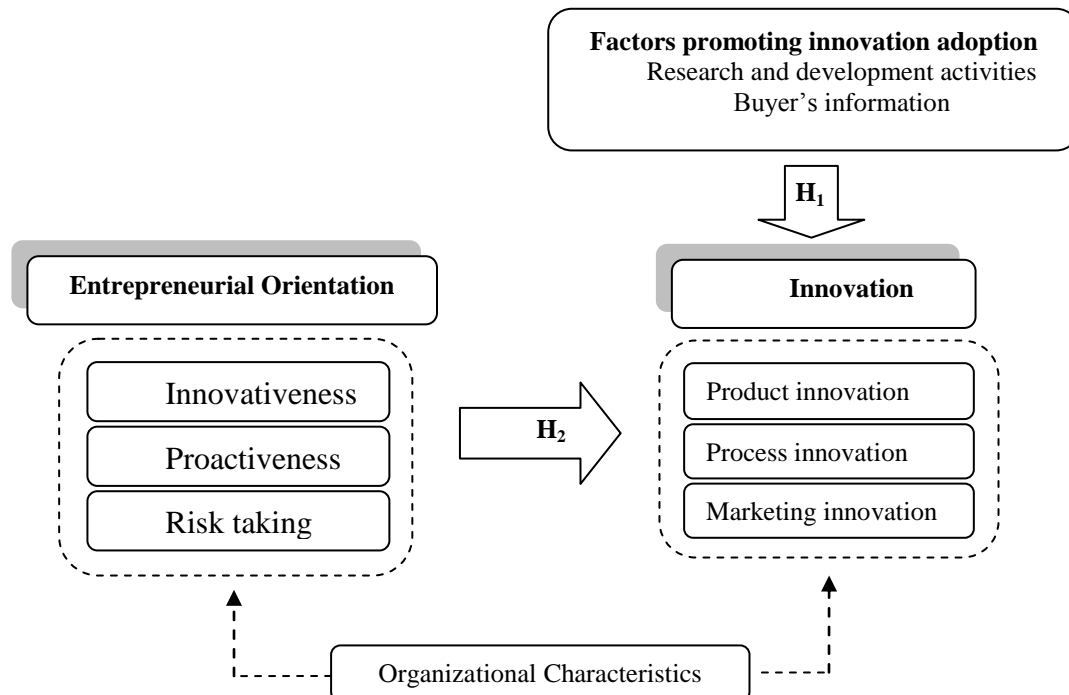


Figure 6.1 Model of the relationship between entrepreneurial orientation and innovation

6.3 Materials and Method

6.3.1 Sample and data collection

The low-grown tea manufacturers are the target population for this research as explained in chapter 4. Same sample was used for data collection to examine the influence of EO on innovation and effect of factors promoting innovation adoption on innovation. Purposive sampling technique was used to select the sample based on two criteria as described chapter 4. The respondents consist of 109 owners and managers of tea manufacturing firms who wished to take part in this study with their busy schedules.

6.3.2 Instrument of measurements

Primary data were collected using a pre-tested, self-administered, structured questionnaire. Because respondents were unwilling to provide information by mail, direct contact was employed. A subjective measurement method was used to obtain the owner's or manager's perceptions of organizational variables such as the level of EO and the level of innovation. Before data collection, a pre-test was conducted to verify the face validity and content validity of the survey instrument. Accordingly, the questionnaire was modified to reduce the vagueness of the questions and the complexity of the responses.

In this study, all measures of EO, innovation and factors promoting innovation adoption were drawn from literature and aligned with the conceptual aspects of each construct. Accordingly measurements of EO were described in chapter four.

Innovation was assessed by investigating the number of products or services introduced and the frequency of product or service changes (Covin and Slevin, 1989; Miller and Friesen, 1982). The concept of innovation employed in this study is quite broad. It includes both small enhancements in products, processing methods, or marketing strategy and major changes such as the introduction of new product processes or marketing strategies. Innovation was measured for the three types of innovation defined by Sundbo (2003): product innovation, process innovation, and marketing innovation. The level of innovation adoption of each type was measured on the five-point Likert scale where 1 indicates a very low level and 5 indicates a very high level (see Appendix 1). Additionally, the number of products, processes, and marketing innovations were assessed as objective measurements. A correlation analysis between the subjective and objective innovation measures revealed that the level of product, process, and marketing innovation is significantly and positively correlated with the number of product, process, and marketing innovations, respectively (coefficients are as follows: 0.714 with $p < 0.01$, 0.599 with $p < 0.01$, and 0.786 with $p < 0.01$). Therefore, the subjective innovation measures are shown to be representative of the objective innovation measures.

To measure the importance of factors promoting innovation adoption, we adapted the sources of innovations used by Bommer and Jalajas (2004). Also scholars have argued the importance of research and development activities as the determinant of innovation. In this study, we measure factors promoting innovation adoption as two variables, namely; research and development activities, and buyer's information. Here internal research and development and research institutions were categorized as research and development activities.

6.3.3 Data Analysis

Regression analysis was used to test the proposed hypothesis in this study as explain in chapter four. Two-stage hierarchical regression analysis was applied to test the hypothesized direct relationships; factors promoting innovation adoptions and innovation (H_1) and dimensions of EO and types of innovation (H_2). In order to select control variables for further analysis, organizational characteristics of the organization and of the owner or manager were used as predictor variables for the firm's innovation. These variables include the firm's size, stage, and involvement in other business lines; the availability of green leaf tea; and the owner's or manager's educational level, age, training, and previous business experience. Among them, the variables that most significantly influenced the firm's innovation—firm size and the availability of green leaf tea—were selected as control variables for further analysis in testing hypothesis. Additionally, correlation analysis was used to ascertain the relationship between the motivation to innovate and the type of innovation.

Cronbach's alpha was used to assess the reliability of scale items used to measure the variables (see Table 6.3). Accordingly, the Cronbach's alpha coefficients for the variables were higher than or approaching the recommended level according to Nunnally (1978) and indicated better internal consistency. Construct validity of the scale items were tested by exploratory factor analysis using principle component method as explain in chapter 4 (see Appendix 2).

▪ Control variable

Firm size and the availability of green leaf tea (raw materials availability) were used as the control variables in this study, which is consistent with the argument made by Kimberly and Evanisko (1981) that organizational innovation is facilitated and influenced by firm characteristics such as size and resource slack. Further, the study conducted by Avermaete et al. (2003) revealed that innovation depends on company size.

6.4 Results and Discussion

6.4.1 Innovations adopted by Tea manufacturing firms

Innovation has experienced notable alteration in recent years due to number of aspects including the advance of science and technology and increasing globalization of some markets (Ongonga and Ochieng, 2013). This section describes the types of innovation adopted by the tea manufacturing firms studied in this research, as shown in Table 6.1. Several types of innovations can be identified: product innovations, process innovations, marketing innovations, and packaging innovations. The rationale behind the adoption of innovation is to generate business value, since effective innovators have a better chance of surviving than do non-innovators in the same industry.

Of the sampled firms, 50% have upgraded the quality of their tea grades and nearly 23% produce special tea grades such as silver tips, golden tips, special, and extra special tea grades. Two factories produce new tea grades—Jayachakra and Sun Pekoe—which are unique to them. A small minority of the firms produce tea packets, flavoured tea, and green tea (15%, 4%, and 2%, respectively). The figures imply that all of these tea manufacturing firms still produce black tea in bulk form as their main product. Further, Table 6.1 shows that the types of product innovation are positively related to the level of product innovation.

Table 6.1 Different types of innovations adopted by sampled Sri Lankan tea manufacturing firms

Type of Innovation	Number of firms ^a	Share of total sample (%) ^a	Correlation with overall level of innovation
<u>Product innovation</u>			
Special tea grades	25	22.94	.583**
Improved quality of tea grades	55	50.46	.517**
Unique tea grades	2	1.83	.236*
Flavored teas	4	3.67	.318**
Green tea	2	1.83	.210*
Produce Tea packets	17	15.60	.566**
<u>Process innovations</u>			
New machinery	95	87.16	.053
New management practices	50	45.87	.415**
Upgraded processes such as a fully automated system	11	10.09	.533**
Use of crates for reducing post-harvest loss of green leaf	18	16.51	.273**
New production methods such as CTC	11	10.09	.312**
Energy-saving technology	8	7.34	.172
New weighing system	4	3.67	.222*
<u>Marketing innovations</u>			
Direct sales via sales outlet	6	5.50	.137
Direct export	5	4.59	.602**
In process of beginning direct export	11	10.09	.403**
Own brand for local market	10	9.17	.500**
Own brand for export market	4	3.67	.507**
Discovery of new brokers	3	2.75	.123
<u>Packaging innovations</u>			
Improved packaging for the local market	8	7.34	.540**
Improved packaging for export markets	8	7.34	.707**
Upgraded bulk packaging	7	6.42	.485**

Note: ^a Each tea manufacturing firm may have adopted more than one type of innovations therefore, the number of firms and the share do not necessarily total.

Significance levels: * $p < 0.05$, ** $p < 0.01$

Regarding process innovation, 87% of the firms have implemented new machinery. As new technology adoption, 10% of the factories have upgraded the production process by fully automating their systems, 10% have implemented a new CTC production process in addition to the existing Orthodox production process, 7% utilize energy-saving technologies, and approximately 4% have implemented a new system for weighing green leaf tea. Additionally, 46% of firms have adopted new management practices, and 16% have adopted strategies to reduce post-harvest loss of green leaf tea (especially during transportation). By adopting advanced technology, firms can gain benefits such as increased efficiency, better allocation of staff, reduced production costs, and so forth (Hofmann and Orr, 2005). As argued by Santamaría et al. (2009), the uses of advanced machinery are also important for both product and process innovation, because new technologies create new

opportunities for firms to further enhance their innovation. Table 6.1 illustrates that tea manufacturing firms' process innovations other than the implementation of new machinery and similar energy-saving techniques are significantly correlated to the firm's level of process innovation.

Fewer tea manufacturing firms have adopted marketing innovation than have adopted product and process innovation. As examples of marketing innovation adoption, 5% of the firms direct export, and 10% are in the process of beginning to direct export. Somewhat fewer firms (4% and 9%, respectively) have introduced their own brands to export markets and the local market. These marketing innovations are significantly related to the firm's level of marketing innovation. Only a few firms have adopted packaging innovations. They have improved the packaging of tea packets for export markets and the local market and upgraded bulk packaging. Damanpour and Gopalakrishnan (1998) argued that adoption of innovation tends to increase the effectiveness and performance of the adopting firm, since it enhances the firm's ability to adapt to the changing environment.

6.4.1.1 Motivation for innovation adoption

Today's turbulent and complex business environment such as changing customer demand, technology etc. may encourage firms to be more innovative. Accordingly firm's innovation adoption strategy need to be changed over time. There are number of internal and external factors that encourage firms to adopt innovations. Table 6.2 illustrates the importance of each factor in motivating innovation adoption by the tea manufacturing firms in this study.

Table 6.2 Motivations for innovation adoption

Motivations	Mean ^a	Standard deviation	Correlation with level of each type of innovation		
			Product	Process	Market
Commercial development	4.21	.711	.436**	.412**	.369**
Competitor actions	3.84	.945	.133	.085	-.010
Financial rewards	4.09	.800	.217*	.153	.103
New product ideas and development	4.06	.926	.317**	.240*	.154
Personal satisfaction	3.80	1.169	.210*	.123	.122

Note: Significance levels: * $p < 0.05$, ** $p < 0.01$

^a Scale: 1 = not important and 5 = very important

Among the factors, commercial development is the primary reason (mean value = 4.23) that tea manufacturing firms adopt innovations. It significantly correlates with the level of a firm's product innovation, process innovation, and marketing innovation. Innovation is perceived as important for business survival and competitiveness. Other factors that serve as an important motivation for innovation adoptions are financial reward and new product ideas and development. Both are significantly correlated with product innovation, while new product ideas and development is also positively correlated with process innovation. Competitor actions and personal satisfaction are rated as comparatively less important than the reasons already given.

6.4.2 Factors promoting Innovation adoption

Table 6.3 presented the descriptive statistics of variables which were used for analysis.

Table 6.3 Descriptive statistics of variables

Variable	Min	Max	Mean	Standard deviation	Cronbach's alpha
Innovation adoption level¹					
Product innovation	3	13	6.54	2.595	.912
Process innovation	3	15	8.48	3.111	.919
Market innovation	1	5	1.59	1.029	n.a
Overall innovation	7	32	16.61	6.263	.832
Dimensions of entrepreneurial orientation²					
Innovativeness of firm	3	15	9.27	2.990	.720
Proactive behavior of firm	6	15	12.14	2.481	.783
Risk taking behavior of firm	3	15	11.54	2.949	.682
Entrepreneurial Orientation	16	45	32.94	6.890	.833
Factors promoting innovation adoption³					
Research and development activities	2	10	6.61	2.134	.716
Buyer's information	3	5	4.39	.609	n.a.
Size (lnmonthly sales) ^a	9	13	10.89	.590	n.a.
Availability of green leaf ^b	238	277	258.19	14.464	n.a.

Notes; ^a Monthly sales in kg,

^b Availability of green leaf = Extent of tea cultivation in district / Number of tea factories in each district

¹ Scale: 1 = very low and 5 = very high; 2 Scale: 1 = strongly disagree and 5 = strongly agree

³ Scale: 1 = not important and 5 = very important

n.a. not applicable

This section describes the relationship between factors promoting innovation adoption and different types of innovations of the tea manufacturing firms. In this study factors promoting innovation adoption was define mainly in two categories; buyer's information as demand side factors and research and development activities as supply side factors. Here, research and development activities comprise of internal research and development and research institutions.

Creative ideas are considering as essential ingredient of innovation and they are originating from various sources. Correlation analysis revealed that there is a significant relationship between promoting innovation adoption and types of innovations of tea manufacturing firms in low country Sri Lanka. After finding significant relationships, influence of factors promoting innovation adoption on types of innovation was analyzed by hierarchical regression analysis. In stage 1, the control variables (size and availability of green leaf) were entered as predictors of types of innovations. Then, the main effect predictor variables, factors promoting innovation adoption were entered. The results of the analysis presents in Table 6.4.

The results revealed that control variables size and availability of green leaf are significantly influenced on product innovation, process innovation, marketing innovation and overall innovation level of the firms. According to Rogers (1995), organizational size and wealth are strongest predictors of innovation. Rosner (1968) stated that slack resources are believed to enhance the innovation of firms. Also Kimberly and Evanisko (1981) found that organizational size significantly correlated with innovation adoption. Large firms have a propensity to adopt more innovation than their smaller firms (Kimberly and Evanisko, 1981). Consist with

previous studies, this research also found that firms' size and availability of raw materials are facilitating for enrichment of innovation adoption.

Table 6.4 Regression results of factors promoting innovation adoption and innovation

Dependents Independents	Types of Innovation			Overall Innovation
	Product	Process	Marketing	
<u>Control variables</u>				
Size (Monthly sales in kg)	.201*** (2.883)	.211*** (3.062)	.180** (2.241)	.218*** (3.407)
Availability of green leaf	.312*** (4.572)	.224*** (3.323)	.305*** (3.896)	.290*** (4.652)
<u>Main effect</u>				
Research and development activities	.119* (1.764)	.104 (1.567)	.132* (1.707)	.123** (1.990)
Buyer’s information	.501*** (7.358)	.566*** (8.412)	.396*** (5.060)	.554*** (8.879)
F Statistics	36.274***	37.793***	21.139***	48.230***
R ²	.582	.592	.448	.650
Adjusted R ²	.566	.577	.427	.636
Change in R ²	.283	.347	.188	.344

Notes: Significant levels: t-statistics are shown in parentheses following the estimated coefficients; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

As Table 6.4 illustrates, the research and development activities positively and significantly (respectively coefficients are 0.119, $p < 0.1$, 0.132, $p < 0.1$ and 0.123, $p < 0.05$) related to product innovation, marketing innovation and overall innovation of the firm. While, the relationship between research and development activities and process innovation is positive but not significant (coefficient = 0.104, $p \geq 0.1$). As literature suggested, study conducted by Santamaría et al. (2009) consider the importance of research and development activities as the determinant of innovation. Here research and development activities are comprised of internal research and development and research institutions. Gemünden et al., (1992) found that cooperation with research institutions significantly influences on technological innovations. Study conducted by Hadjimanolis (2000) in SMEs in Cyprus found that internal research and development significantly correlate with the innovation of the firm. Research and development activities are means of advancement of knowledge and technology for developing new product and process. But, under this context research and development activities are not significantly influenced on process innovations. That may due to comparatively low level of research and development activities related to tea manufacturing sector in Sri Lanka.

The findings shows that buyers information positively and significantly (respectively coefficients are 0.501, $p < 0.01$, 0.566, $p < 0.01$, 0.396, $p < 0.01$ and 0.554, $p < 0.01$) related to product innovation, process innovation, marketing innovation and overall innovation of the firm. This illustrates that buyers information significantly influence on different types of innovation and overall innovation of the firm. It means, that market price of tea, demand for different tea grades, buyers special requirements, target foreign market, consumer behavior, and global trends of tea market are highly influenced on product, process and marketing innovation adoption of tea manufacturing firms in Sri Lanka. This results partly in line with study of Bommer and Jalajas (2004), which found that customers and marketing were highly significant sources of SMEs and both were closely connected with new product innovation. Gemünden et al., (1992) found that lead users significantly influence on technological innovation success.

The results revealed that buyers information are more strongly influenced on innovation adoption of tea manufacturing firms than research and development activities. This finding in line with study of Bommer and Jalajas (2004); they found that lowest rated sources by firms' were research institutions and consultants. That may due to disparity between research interests of research institutions and shorter term market needs of firm. This implies currently research and development activities related to tea industry may not enough to have strong significant influence on innovation adoption. Hence, tea manufacturing firms should continue their effort to enhance the internal research and collaboration with research institutions.

According to the results of Table 6.4 as proposed by hypothesis 1 (H_1), factors promoting innovation adoption; research and development activities and buyers information are positively related with different types of innovation of tea manufacturing firms. It means that H_1 is supported by the research findings. Previous study of Bommer and Jalajas (2004) also noted that effective product and process innovation is promoted by various sources of innovations.

6.4.3 Entrepreneurial orientation and Innovation

EO reflects a firm's tendency to create new business out of current practices and thus revitalize stagnant firms, often by the introduction of innovations (Lumpkin and Dess, 1996). This section describes the empirical evidence of a relationship between EO and each type of innovation adopted by the Sri Lankan tea manufacturing firms in this study (Appendix 3 provided the correlation between EO and number of innovation adoptions). Two-stage hierarchical regression analyses were conducted to test hypothesis 2 (H_2). In the first stage, the control variables firm size and the availability of green leaf tea were entered as predictors of each type of innovation. Then, in the second stage, the main effect predictor variables innovativeness, proactiveness, and risk-taking were entered. Results are shown in Table 6.5.

Table 6.5 Results of regression analysis of dimensions of entrepreneurial orientation and innovation

<div>Dependents</div> <div>Independents</div>	Types of innovation			Overall Innovation
	Product	Process	Marketing	
<u>Control variables</u>				
Firm size	.133** (2.281)	.171*** (2.701)	.140* (1.791)	.163*** (3.038)
(Monthly sales)				
Availability of green leaf	.167*** (2.846)	.115* (1.809)	.224** (2.852)	.163*** (3.026)
Research and	.050 (.839)	.038 (.597)	.097 (1.229)	.056 (1.022)
development activities				
Buyers information	.248*** (3.789)	.355*** (5.019)	.218** (2.491)	.315*** (5.244)
<u>Main effect</u>				
Innovativeness	.450*** (6.228)	.282*** (3.607)	.226** (2.343)	.364*** (5.483)
Proactiveness	.059 (.817)	.156** (2.002)	.208** (2.167)	.136** (2.059)
Risk taking	.093 (1.350)	.061 (.822)	-.042 (-.455)	.062 (.981)
F Statistics	39.731***	31.852***	15.949***	49.848***
R ²	.734	.688	.525	.776
Adjusted R ²	.715	.667	.492	.760
Change in R ²	.149	.090	.065	.124

Notes: Significant levels: t-statistics are shown in parentheses following the estimated coefficients; *p < 0.1, **p < 0.05, ***p < 0.01

The results reveal that innovativeness is positive and significantly related to a firm's product innovation, process innovation, marketing innovation, and overall innovation (respectively coefficients are 0.450, $p < 0.01$; 0.282, $p < 0.01$; 0.226, $p < 0.05$ and 0.364, $p < 0.01$). Innovativeness is a significant influence on a firm's individual types of innovation and a firm's overall innovation. This finding is in line with the study by Hurley and Hult (1998) in which they found that innovativeness in a firm's culture is a positive and significant influence on the number of innovations the firm successfully implements. This empirical evidence supports the theoretical argument that organizations adopt a dynamic environment through innovation, since the innovativeness of a firm reflects its tendency to support new ideas and creative processes (Lumpkin and Dess, 1996).

Therefore, innovativeness of tea manufacturing firms leads for product innovation adoptions such as produce new tea grades, flavored tea, and special tea grades and produces different tea packets because product innovation novelty helps firms to satisfy new customer needs and enter to niche markets. Similarly, innovativeness leads for process innovation adoptions such as implementation of new production technology (CTC), automating the production process and implementing new green leaf weighing system. Further, innovativeness facilitating for marketing innovation adoption such as introduce own tea brand to the market. Fonseka (1997) argue that firms which are focused on highly competitive markets tend to introduce their own brand names.

Proactiveness consists of a firm's actions in anticipating the future wants and needs of the marketplace and trying to obtain first-mover advantage its over competitors (Lumpkin and Dess, 1996). According to the results, Proactiveness of a firm has a positive and significant influence on a firm's process innovation, marketing innovation, and overall innovation (respectively coefficient of each relationship are 0.156, $p < 0.05$, 0.208, $p < 0.05$ and 0.136, $p < 0.05$). In other words, the proactiveness of a tea manufacturing firm tends to enhance its adoption of process and marketing innovations and its overall adoption of innovation. Proactive firms anticipate probable future needs of the market and initiate actions rather than waiting and responding to their competitors (Covin and Slevin, 1989). Proactive behavior of tea manufacturing firms lead for process innovation adoptions such as implementing new management practices and measures for reduce post harvest loss of green leaf. Further, proactiveness stimulates marketing innovations of find alternative markets other than main disposal method of tea auctions. However, we find that the relationship between a firm's proactiveness and its product innovation is positive but not significant (coefficient of 0.059, $p \geq 0.1$). In other words, the proactiveness of a tea manufacturing firm does not significantly affect its product innovation. Overall, the Sri Lankan tea industry is in a mature stage and slow moving, therefore initiating product innovation ahead of one's competitors is not easy.

According to Lyon et al., (2000), some entrepreneurs may be vigilant and risk averse under some circumstances. Findings of Table 6.5 reveals that risk taking behavior of tea manufacturing firms are not significantly (respectively coefficients are 0.093, $p \geq 0.1$, 0.061, $p \geq 0.1$, - 0.042, $p \geq 0.1$ and 0.062, $p \geq 0.1$) related to product innovation, process innovation, marketing innovations and overall innovation. It means risk taking is not significantly influence on innovation adoption of tea manufacturing firms. It is generally view; tea is a low technology industry. Therefore, most innovations of tea manufacturing firms in Sri Lanka are innovation adoption and only little innovation generations can be seen. That may due to innovation adoption more closely related to risk avoidance. Because firms intend to produce new market offering desire to build on

knowledge developed by others and adopt rather than generate innovations is specifically reduce the amount of risk that they take for granted (Pérez-Luño et al., 2011).

The results reveals dimensions of EO; innovativeness and proactiveness significantly influence on types of innovation of tea manufacturing firms. But risk taking behavior is not significantly influence on innovations. Therefore hypothesis 2 is patricianly supported by the research findings.

6.5 Conclusion

The purpose of this research is to investigate the types of innovation adopted by Sri Lankan tea manufacturing firms and to examine how the dimensions of EO influence innovation adoption. Innovation is essential for a firm's success and even survival in a competitive market. Most tea manufacturing firms in Sri Lanka have adopted process innovation, whereas marketing innovation has been adopted by fewer firms than have been process and product innovation. Commercial development, new product ideas, and financial rewards are the important factors motivating innovation adoption by tea manufacturing firms in Sri Lanka.

The results of this study indicate the importance of factors promoting innovation adoptions and different types of innovations. Accordingly, buyer's information more significantly influence on product innovation, process innovation, marketing innovation and overall innovation of firm than research and development activities. Therefore, the research and development activities related to tea industry should modify by encouraging firms to enhance their in-house research and development actives and promoting research institutions to in line research and development activities with firm's requirement. Importance level of factors promoting innovation varied widely across different industries (Von Hippel, 1988). It can be concluded that demand factors have more tendency to increase innovation adoption of tea manufacturing firms. Further, this study implies firm's size and availability of raw materials are important determinants of innovation adoptions.

The results of this study show the importance of EO dimensions in driving innovation adoption by tea manufacturing firms. Specifically, innovativeness is a significant influence on product innovation, process innovation, and marketing innovation. A firm's proactive behaviour is positively related to its process innovation and marketing innovation. But risk taking behavior not significantly relate with any type of innovation. Moreover, these relationships are consistent with the argument made by Lumpkin and Dess (1996) that EO reflects the extent to which a firm engages in innovation and with the findings of Tajeddini (2010) that EO positively influences a firm's innovation.

When considering the different type of innovations of tea manufacturing firms, product innovations highly depend on the innovativeness of the firm. While process innovation and marketing innovation depend on both innovativeness and proactive behavior of the firm. None of innovation is significantly influence by risk taking behavior of the firms. Since tea manufacturing firm tends to adopt innovation and less like to generate innovation. According to Tajeddini (2010), major reason why firms tend to adopt innovation than generation is specifically to reduce the amount of risk that they take for granted. Therefore, it can be concluded that dimensions of EO namely innovativeness and proactiveness positively and significantly related to enhancement of product innovation, process innovation and marketing innovations of tea manufacturing firms under developing economic context of Sri Lanka.

6.6 Managerial and policy implications

Due to a high level of competition from firms in newly emerging countries, Sri Lankan tea manufacturing firms understand the importance of adopting innovation to gain competitive advantage. This study provides meaningful insights for top management to understand better how a firm's EO relates to its innovation. The results show that, in the current economic environment, tea manufacturing firms' improvement in the various types of innovation is related to their EO. Therefore, a firm could plan and implement innovation activities within the framework of these EO dimensions. Additionally, professionals in tea industry are able to recognize which factors are important for adoption of different types of innovations. Therefore, management could be able to plan and implement innovation activities within the framework of these antecedents constructs.

Apart from its managerial implications, the empirical evidence could be useful for government and policymakers in designing programs and initiatives to support entrepreneurship and innovation by tea manufacturing firms. In tea manufacturing firms, minority had launched new product and generate innovation but majority are innovation adopters. This empirical evidence is consistent with the common view that tea manufacturing firms are less likely to focus extensively on research and development and thus less likely to generate innovations. Therefore, policymakers should encourage research and development by the tea industry, with an emphasis on activities that facilitate knowledge transfer among firms. Further, research institutions should align their research activities with the current requirements of firms.

Chapter 7

A Case study of leading Tea Manufacturing Firms in Low Grown Areas

7.1 Introduction

Entrepreneurial behavior is crucial for firm's survival and performance (Barringer and Bluedorn, 1999). Innovation is concerned as main activity of entrepreneurship (Drucker, 2002). According to Lumpkig and Dess (1996) key concern of an EO is an emphasis on innovation. Therefore, there is a strong interrelationship between entrepreneurial behavior and innovation. Many scholars have argues that innovation is critical for compete in global and domestic market (Hitt et al., 2001). Hamel (2000) argues that innovation is the most important component of firm's strategy. Further, findings of Robert (1999) show relationship between high innovation and superior performance.

To promote the competitiveness of tea manufacturing firms in developing countries like Sri Lanka it is important to conduct theoretical and empirical research on the factors promoting competitiveness of tea manufacturing firm's that shows integrate framework of both internal and external factors. According to the literature concerns in previous chapters, this study argues that external relationships, owner / managers competencies, EO and innovation affects the business performance of tea manufacturing firms.

This chapter aims to explore the factors promoting competitiveness in tea manufacturing firms by studying the several tea manufacturing firms located in low grown areas in Sri Lanka. It is decided to start the analysis of cases by emphasizing the key role of each factor (external and internal factors) in promoting competitiveness of tea manufacturing firms. Therefore, specific objectives of this chapter are as follows;

- To understand how external and internal factors such as external relationships, entrepreneurial competencies, entrepreneurial orientation and innovation enhancing the competitiveness of tea manufacturing firms.
- To explain the relevance of using each variable to overcome the current problems faced by tea manufacturing firms.
- To develop theoretical model of the factors promoting competitiveness in tea manufacturing firms form the empirical cases of low country tea manufacturing firms.

The model will be developed in two steps. First by appraising the existing literature, a preliminary model of the factors promoting competitiveness in tea manufacturing firm will be developed. Then, the principle model will be evaluated by using comparative case study methodology with experiences of six tea manufacturing firms that have engaged in developing their factors promoting competitiveness. By that attempt to develop a clear and more empirically grounded theoretical model.

7.2 Preliminary Theoretical Model

Based on the research objective of this chapter, the preliminary theoretical model is used to analyze the each case. A preliminary model of the factors promoting competitiveness in tea manufacturing firm is illustrated in Figure 7.1. This model was developed through reviewing literature by focused on identifying the factors of competitiveness. As argued by Yin (2003) case studies should be started with theoretical intention which can be

refined and enhanced by using actual cases. Therefore this study is adopted this approach. The following discussion provides valid basis for each type of variable included in the model. Further, in this model; external relationships, entrepreneurial competencies, EO and innovation are considered as factors promoting competitiveness.

In chapter 4, discussed about how external relationships are enhancing the EO of tea manufacturing firms in low country Sri Lanka. The research results show that variables of external relationships have positive correlation with EO. In chapter 5, explains the importance of entrepreneurial competencies of owner/manager for EO. It argues that variables of entrepreneurial competencies can enhance the EO of the firm. Analysis shows that entrepreneurial competencies of owner / manager positively correlate with EO of the firm. In chapter 6, proposes the EO positively influence on the innovation of the firm. Analysis shows that EO of firm has possibility to enhance the innovation of tea manufacturing firms. Additionally, previous research findings imply that positive relationship between innovation and the business performance (e. g. Avlonitis and Salavou, 2007; Hult, et al., 2004; Subramanian and Nilakanta, 1996).

Based on existing literature and the research results presented in previous chapters, this study proposed integrated model to analyze the factors promoting competitiveness in tea manufacturing firms in low country Sri Lanka as shown in Figure 7.1.

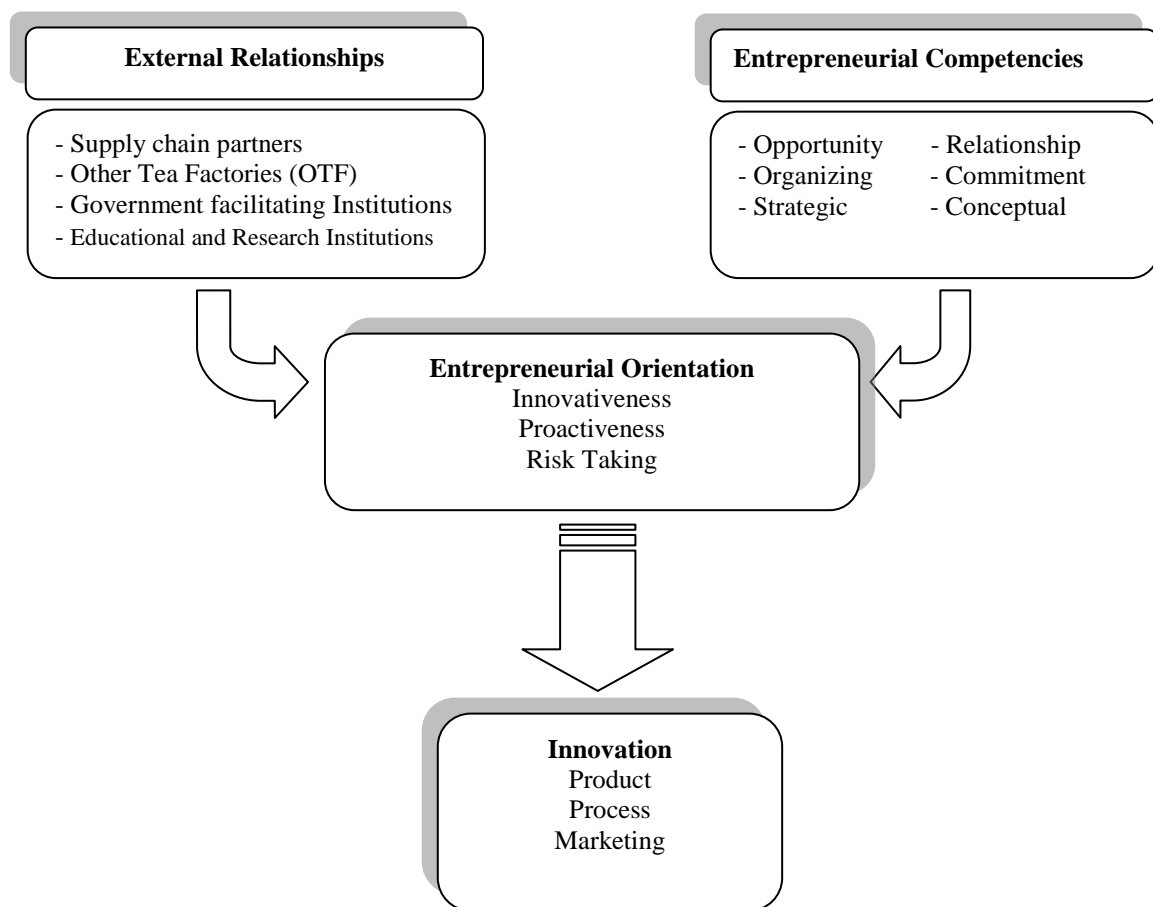


Figure 7.1 Preliminary theoretical model of factors promoting competitiveness in tea manufacturing firms

7.3 Methodology

This study adopted a case study research approach to understand the factors promoting competitiveness of tea manufacturing firms in Sri Lanka. Under developing economic context like Sri Lanka, the theories describing factors promoting competitiveness especially in tea industry is still immature and required for richness. The case studies are preferred strategy when investigator has little control over events and when the focus is on a contemporary phenomenon within some real-life context (Yin, 2003). Case study research enables the study of the factors promoting competitiveness in tea manufacturing firms in its natural setting, therefore it yield richer insights through observing actual practice in its context. The study is explorative in nature. According to Eisenhardt (1989) tying the emergent theories to existing literature enhance the internal validity and generalizability.

7.3.1 Case Selection

This study adopted the selection methodology suggested by Miles and Huberman (1984). Accordingly establish the guidelines for the study to make sure that selection criteria connected directly to the research question. Six tea manufacturing firms were selected as case studies to compare against the preliminary model shown in Figure 7.1. However, for case studies, random selection is neither necessary nor even preferable (Eisenhardt, 1989). For case studies, the generalizability is determined by the strength of the description of the context. Therefore, the firms were selected through purposive sampling, which is criterion-based selection method that permits a sample to be included that fits a predefined profile (Patton and Appelbaum, 2003). Table 7.1 show the summery of the major characteristics of companies which included in the study.

Data was collected mainly from two regions of low country namely; Southern province and Sabaragamuwa province. Three tea manufacturing firms were selected from each region. Selection of the tea manufacturing firms for case study was done using the records of tea manufacturers issued by the Tea Board. The criteria for selection included leading tea manufacturers which having high net sales average (NSA) in each region and continued for different types of innovations.

7.3.2 Data Collection

Unique strength of case study method is its ability to deal with variety of evidence for evaluation (Eisenhardt, 1989; Patton and Appelbaum, 2003; Yin, 2003). Structured interviews, documents and observation were used as main data sources of this study. Structured interviews were conducted by personal visit by the researcher at each company location. For further clarifications, some interviews were conducted by over the phone as required.

Filed work was carried out during one month period in July – August 2014. The time duration of interviews was range from one and half to two hours. In addition to the interviews process, documents and other data were gathered in each time. Those were company profile, presentation slide, newspaper articles, marketing and promotional materials. Further, plant visit was done in order to observe the consistency of production process and management with data gathered through interviews.

7.3.3 Data Analysis

Analytical induction method was adopted for analyzing six cases, which is a method of extending or refining exiting theories by constantly comparing them with typical cases (Yan and Gray, 1994). In the study context, this method engages with investigative the data from the six cases of tea manufacturing firms and determining if they in shape with preliminary theoretical model or whether the model required to modified. Accordingly as explained by Parkhe (1993) analysis was started with the preliminary model and then compared each case with preliminary model and modified the model in view of the findings for each successive case.

Table 7.1 Profile of Tea Manufacturing Firms*

Characteristics	Company					
	A Company	B Company	C Company	D Company	E Company	F Company
Establishment	Establish the tea factory in 1967 by farther Takeover the management in 1990	Establish the tea factory in 1984 by farther Takeover the management in 2002	Acquire in 1998	Establish the tea factory in 1940 by farther Takeover the management in 1981	Establish the tea factory in 1930 Takeover the management in 1987	Establish the tea factory in 1991 by father Takeover the management in 1997
Main products	Black tea as bulk Flavored teas White tea Tea packets Unique tea grade – “Sun Pekoe”	Black tea as bulk Flavored teas Tea packets Tea Bags Unique tea grade – "Jayachakra Tea" Green Jayachakra	Black tea as bulk	Black tea as bulk Tea packets	Black tea as bulk Tea packets	Black tea as bulk Tea packets
Production method	Orthodox	Orthodox	Orthodox CTC	Orthodox	Orthodox CTC	Orthodox
Main Market	Foreign market	Foreign market Local market	Foreign market	Foreign market	Foreign market Local market	Foreign market Local market
Marking Channels	Tea Auction Direct export (1% of production)	Tea Auction Direct export (5% of the production) Tea Centre Resellers	Tea Auction	Tea Auction Direct export (1% of the production)	Tea Auction Though reseller locally (1% of the production)	Tea Auction Though reseller locally (3% of the production)
Monthly sales (kg of Made tea)	33 000 kg	65000 kg	200 000 kg	180 000 kg	250 000 kg	100 000 kg
Production capacity (green leaf per day)	6000 kg	12 000 kg	40 000 kg	25 000 kg	40 000 kg	20 000 kg
Number of employees	55	90	300	250	350	160
Quality certifications	ISO 22000 : 2005 TASL Certification SLS Certification CQC Two star Ethical tea partnership	ISO 22000-2005 ISO 9001-2000 CQC Three star Ethical tea partnership	Working for HACCP	ISO 22000 -2005 CQC Two star Ethical tea partnership	ISO 22000 -2005 CQC Two star Ethical tea partnership	ISO 22000 -2005 CQC Two star Ethical tea partnership
Diversification	None	Having own tea plantation	Hydro Power Project Installation of metal crusher	Having own tea plantation	Having own tea plantation Diversified to other crops	Diversified the business to other sectors

* English letters A to F were randomly allocated to identify the tea manufacturing firms and to maintain their anonymity, TASL - Tea Association of Sri Lanka, CQC - Ceylon Quality Certificate, SLS – Sri Lanka Standards

7.4. Results and Discussion

This study identified the factors promoting competitiveness applied on tea manufacturing firms in Sri Lanka by considering six cases from tea manufacturing firm in low grown areas. This section would discuss in detail about each variable that contribute as factors promoting competitiveness namely; external relationships, entrepreneurial competencies, EO and innovation as variable that leads to business success. In addition this study identify presents of entrepreneurial parent also important sources since five cases demonstrated its impact.

In this section, the revised model of the sources of competitiveness of tea manufacturing firms in Sri Lanka will be presented and Figure 7.2 illustrates it. The model was developed in stepwise manner by starting with preliminary model as shown in figure 7.1 and then revising the model as shown in figure 7.2 after analysis of each case. As a result, revise model represent the empirically grounded theoretical model of factors promoting competitiveness of tea manufacturing firms in developing country like Sri Lanka.

7.4.1 Innovation as key of competitiveness

The scholars have argued that both the extent of organizational innovativeness and frequency of innovation across organizational unites would help organizational competitiveness. The adoption of innovation is intended to contribute to the firm's competitive advantage by changing that firm. Thereby firms can adapt to new conditions in its external environment. All tea manufacturing firms in these case studies understand that innovation is very imperative to advance their ability to compete in the market. Actually, all tea manufacturing firms adopted innovations in various areas such as product, process and marketing. Table 7.2 shows the level of innovations adopted and Table 7.3 illustrates various types of innovations adopted by tea manufacturing firms.

Table 7.2 Level of innovation

Company	Mean values of innovation		
	Product	Process	Marketing
A	4.33	4.00	4
B	4.67	4.67	5
C	3.67	4.00	3
D	4.00	4.67	4
E	4.00	4.33	4
F	4.00	4.33	4
Previous Sample*	2.21	2.83	1.62

Note: Scale; 1= No extent and 5 = very high extent

*,n = 109; sample which used for previous analysis

Related to product innovation, B Company has been developing unique tea grade called “Jayachakra” which is invested and produced exclusively by this factory. A Company is also producing a unique tea grade called “Sun Pekoe”. B Company is further working on designer teas and D Company is producing a designer tea called “Chakrapathi” and “Samanmal” for international exhibitions. At present A Company produces different favored tea and White tea. B Company produce tea mainly in three ranges namely; nature's range, spice tea range and exclusive range. Under exclusive range they produce silver tips, golden tips, special teas and extra special teas. D company also produces tea in three ranges namely; flowery range, broken range and leafy range. Under flowery range they produce silver tips, special teas and extra special teas. Purpose of producing leafy range is to preserve more health and revitalizing properties of tea.

Table 7.3 Innovation of tea manufacturing firms

Company	Innovations		
	Products	Process	Marketing
A	<ul style="list-style-type: none"> - Different flavored tea, White tea, unique tea grade call “Sun Pekoe” - Different types and size of tea packets - Produce special teas, extra special teas 	<ul style="list-style-type: none"> - Acquired quality certificates such as ISO 22000:2005, Ethical Tea Partnership, and CQC Two star - Conduct program for tea small holder farmers to upgrade the quality of green leaf name “Ladalu Mahimaya” 	<ul style="list-style-type: none"> - Direct export to Germany, UK, New Zealand, Australia, and Japan - Promote own brand
B	<ul style="list-style-type: none"> - Mainly teas in three ranges namely; nature’s range, spice tea range and exclusive range - Produce silver tips, golden tips, special teas, extra special teas - Unique tea grade call “Jayachakra” - Produce different tea packets and tea bags and use different packs 	<ul style="list-style-type: none"> - Implement food factory concept - obtain the quality certificates such as ISO 22000:2005, ISO 9001:2000, Ethical Tea Partnership, and CQC Three star - Semi automated the orthodox production process - Ensure the traceability - Computerizes the weighing system of green leaf - Minimize the post harvest loss of green leaf using plastic crates for transportation 	<ul style="list-style-type: none"> - Local niche markets - Direct export to Russia, Japan, USA, Australia and Germany - Promote own brand - Establish tea centre
C	<ul style="list-style-type: none"> - Produce silver tips, golden tips, special teas, extra special teas - CTC tea grades 	<ul style="list-style-type: none"> - Introduce insurance scheme for small holder farmers - Implement fully automated CTC production process - Semi automated the orthodox production process - Computerizes the weighing system of green leaf 	<ul style="list-style-type: none"> - Working on introducing brand to local market
D	<ul style="list-style-type: none"> - Tea mainly in three ranges namely; flowery range (silver tips, special teas and extra special teas), broken range and leafy range - Tea packets 	<ul style="list-style-type: none"> - Acquired quality certificates such as ISO 22000:2005, Ethical Tea Partnership, Rainforest Alliance and CQC Two star - Semi automated orthodox production process - Ensure the traceability - Using nylon bags and special track system in green leaf transporting lorries to reduce post harvest losses 	<ul style="list-style-type: none"> - Direct export to Japan, USA, and Germany
E	<ul style="list-style-type: none"> - Produce silver tips, golden tips, special teas, extra special teas - CTC tea grades - Tea packets 	<ul style="list-style-type: none"> - Acquired quality certificates such as ISO 22000:2005, Ethical Tea Partnership - Semi automated (75%) orthodox production process - Implement fully automated CTC production process 	<ul style="list-style-type: none"> - Introduce own brand to local market - Develop direct relationship with Russian buyers to introduce tea bags
F	<ul style="list-style-type: none"> - Produce silver tips, golden tips, special teas, extra special teas - Tea packets 	<ul style="list-style-type: none"> - Acquired quality certificates such as ISO 22000:2002, HACCP and CQC two star, Ethical Tea Partnership - Semi automated orthodox production process - Implementing energy conserving withering trough fans - Minimize the post harvest loss of green leaf using plastic crates for transportation 	<ul style="list-style-type: none"> - Introduce own brand to local market - Develop direct relationship with China buyers

C, E, and F tea manufacturing firms are also producing flowery tea grades such as silver tips, special teas and extra special teas as their product innovations. Additionally, C and E Companies are producing CTC tea grades and owner of E firm mentioned;

In global market there is increasing demand for CTC tea since now trends towards the more convenience type of teas. CTC tea is more suitable for tea bags therefore we shifted to dual manufacturing method to gain competitive advantage.

A, B, and D Companies are producing different types of attracting tea packets for foreign market and B firm produces tea bags too. E and F firms are producing different sizes of tea packet for local market.

As process innovations, all Companies except C Company were acquired quality certificates such as ISO 22000:2005 and CQC (Ceylon Quality Certificate) and Ethical Tea Partnership to comply with food factory concept and to be competitive in global market. All companies were semi automated the orthodox production process to maintain the consistency of production. Further, C and E Companies were adopted dual production by implementing fully automated CTC production line. Implementing computerized weighing system for green leaf by B, C, and D firms and further B and D Companies are ensuring the traceability which is a requirement of some buyers. Company B, D and F are implementing different strategies to minimize the post harvest loss of green leaf. Company B and F are using plastic crates and D Company is using nylon bags and special track system in green leaf transporting Lorries. A Company conducts special program called “Ladalu Mahimaya” which literally means “Glory in the Tender Leaves” for tea small holder farmers to upgrade the quality of green leaf and C Company is introducing new insurance scheme for tea small holder farmers. While F Company was implemented energy conserving withering trough fans to reduce the cost of production.

To face the competition tea manufacturing firms are adopting market innovations as follows. A, B and D Companies do direct export under their own brand name other than main marketing channel of tea auction. They are serving to foreign niche markets. B Company performs as the leading and fast growing tea manufacturing firm in Sri Lanka and it is registered as tea exporting company and increases their direct export up to 5 % of total production. While A, and D Companies direct exports are 1 % of their total tea production. The Owner of A Company said;

We always try to introduce new products based on the buyer's requirement and try finding niche markets for those products.

Further, B Company owner mentioned; “our main objective is promoting “our own brand” in the global market by 2015’. Further, they established tea centre in the premises of tea factory and allowing visitors to taste the tea where it produce. They locally sell the products through special outlets such as supermarkets and hotels. Thereby try to dominate distribution channels and establishing brand recognition. As market innovations, E and F Companies are introducing their own brand to local market additional to tea auction which accounts 2 % and 1% of their total tea production respectively. Further they developed direct relationship with foreign buyers with intension of direct export in future. In order to developing C Company’s market, they are planning to introduce their brand to local market addition to their main marketing channel of tea auction. The owner said;

We identified there is big demand for high quality teas locally therefore we working on launching our brand to local market and finding opportunities for direct exports by participating international tea trade fairs.

The experiences of above cases of tea manufacturing firms imply that adoption of innovations is desirable since innovations energize the adopting organizations and enhance their organizational performance (Dos Santos, et al., 1995). 7.4 illustrates the performance level of the each tea manufacturing firm (Additionally, Appendix 3 shows the empirical evidence of innovation and performance of the previous sample). Based on the experiences of case A to F it appears that innovation plays an important role for improving competitiveness. Further, it implies that B and D tea manufacturing firms adopted more innovations and comparatively they are performing well since, innovation is fundamental in gaining competitive advantage. This finding is in line with Miller and Friesen (1982) that entrepreneurial organizations try to obtain a competitive advantage by routinely making innovations. Therefore it emphasizes that innovation adoption of tea manufacturing firms are leading to firm's performance.

Table 7.4 Level of Performance

Company	Level of Performance			
	Profit (Pretax)	Market share growth	Sales growth	Average monthly sales
A	Increase slightly	1 – 3 %	5 – 10 %	33 000 kg
B	Increase moderately	More than 5%	More than 15 %	65 000 kg
C	Increase slightly	3 – 5 %	10 – 15%	200 000 kg
D	Increase moderately	More than 5%	More than 15 %	180 000 kg
E	Increase moderately	More than 5%	More than 15 %	250 000 kg
F	Increase slightly	3 – 5 %	10 – 15%	100 000 kg

Source: Survey data, 2014

7.4.2 The Importance of Entrepreneurial Orientation

Scholars have argued that entrepreneurial attitudes and behavior are necessary for firms to prosper in competitive environment. EO has been associated with proactive competitive posture, management proclivity for risky projects and the firm's need to engage in wider actions to achieve objectives (Covin and Slevin, 1989). EO on the other hand, mainly represents a response of firms to future or potential market needs (Lumpkin and Dess, 1996). Combining the innovative efforts with appropriate strategy is found as vital for winning the competitive market. EO is viewed as an incremental process of firm which facilitating for innovation (Hult et al., 2004). Then concept of EO as explained previously consist of three components notably innovativeness, proactiveness and risk taking. Innovativeness reveals a firm's propensity to employ new ideas, novelty, experimentation and creative process that may result in new product, process or markets. Proactiveness of tea manufacturing have desire to take the first mover advantage by addressing the future needs in the marketplace. Risk taking behavior of entrepreneurial firm reflects by its willing to devote resources to projects or market opportunities where cost of failure may be high or borrowing heavily (Miller and Friesen, 1982). Table 7.5 illustrates the level of EO of tea manufacturing firms which considered in this study. It reveals that B and D Companies shows comparatively higher level of EO than other tea manufacturing firms.

Table 7.5 Level of Entrepreneurial Orientation

Company	Mean values of entrepreneurial orientation		
	Innovativeness	Proactiveness	Risk taking
A	4.33	4.00	3.67
B	4.67	4.67	4.00
C	3.67	4.00	4.00
D	4.33	4.67	4.00
E	4.00	4.33	3.67
F	4.00	4.00	3.67
Previous sample*	3.09	4.05	3.85

Note: Scale; 1= strongly disagree and 5 = strongly agree

*,n = 109; sample which used for previous analysis

To deliver something better to customer than rival firm, tea manufacturing firms need to develop their EO behavior. EO reveals the firm's tendency to engage in the search of new market opportunities and the renewal of existing areas of operations (Hult and Ketchen, 2001). Further, EO highlights the spirit of rejuvenating the business, which is often accomplished through the introduction of innovations. Therefore, Table 7.6 shows the business strategies that utilized by tea manufacturing firms which leading for innovation adoption and competitiveness.

Accordingly B and D Companies are using following strategies to be competitive in the market. They keen on buyer's special requirement and produce different range of teas and work on designer teas. As a result, B Company is producing unique tea grade. Both tea manufacturing firms maintain their own plantation and take measures to ensure the traceability. Thereby B Company emphasizes the "garden mark" of their teas and promoting their own brand with motto "Pure and fresh direct from the source". Further, both Companies maintain 65 % best leaf count when buying green leaf to enhance the quality of made tea. They expand their market by direct export. Additionally B Company is catering for local and foreign niche markets, established "tea centre" in their premises of tea factory and register as tea exporting company to enhance their competitive advantage. Specifically D Company differentiates their products by producing leafy tea grades to protect health and revitalizing properties of tea. The experience of B and D Companies emphasize that they employ new ideas, experimentation and creative process that lead to new product, process or markets. Therefore, they are being competitive in the market by producing different range of high quality products and expanding their markets.

A and F Companies are utilizing similar kind of strategies to be viable in the market. Therefore, A Company conserve the traditional art of making black tea which preserves intrinsic aroma, taste and quality. They implement special program name "Ladalu Mahimaya" for small holder farmers to ensure the continuous supply of quality green leaf. Further, they produce different types of teas and new tea grade and promoting their own tea brand in the global market through direct export to sustain in the competitive market. F Company is using following strategies to be competitive in the market. They manufacture of hygienically finest quality tea. Further, as product innovations, they produce silver tips and golden tips based on buyer's special requirement. They invent new technologies to cut down energy cost as special process innovations. Introduce own brand to local market and working on direct exports by maintaining direct relationship with foreign buyers as market innovation. The experience of A and F companies confirm they comply with different kinds of product, process and market innovations to compete with their rivals.

Table 7.6 Business strategies

Business strategies	Company					
	A	B	C	D	E	F
Strategies for product innovations						
Produce tea in different rangers		X		X		
Produce different types of tea – Flavored tea ^a , CTC tea grades ^b	X ^a	X ^a	X ^b		X ^b	
Research and development activities to produce new tea grades ^a – produce unique tea grades ^b	X ^a	X ^b		X ^a		
Produce special tea grades	X	X	X	X	X	X
Produce different types of tea packets - Foreign market ^a , Local Market ^b	X ^a	X ^a		X ^a	X ^b	X ^b
Produce tea bags		X				
Maintain higher % (more than 50%) of best leaf count when buying green leaf		X		X		X
Maintain direct relationships with main buyers		X		X		
Strategies for process innovations						
Adopted food factory concept and 5 S system	X	X		X	X	X
Maintaining own plantation		X		X	X	
Conduct extension and training for small holder farmers to obtain quality green leaf	X	X	X	X	X	X
Introduce insurance scheme for small holder farmers in first time.			X			
Implement computerized system to maintain daily information		X		X		
Implement CTC production process (dual production)			X		X	
Establish friendly business environment for small holder farmers			X			
Implementing energy conservation technology in dyers				X	X	
Inventing new technologies; fire wood splitter and aerodynamically designed new energy saving withering trough fan						X
Maintain clean and unpolluted environment		X				X
Strategies for market innovations						
Promoting own tea brand – Foreign market ^a , Local Market ^b	X ^a	X ^a		X ^a	X ^b	X ^b
Resister as tea export company to increase the direct export		X				
Participating for international tea trade fair and exhibitions		X	X	X		X
Find niche markets - Foreign market ^a , Local Market ^b	X ^a	X ^a , X ^b				
Invest on direct export	X	X		X		
Expand local market					X	X
Develop direct relationship with foreign buyers	X	X	X	X	X	X
Strategic Focus; 1= Quality, 2= Quantity [*]	1	1	2	1	2	1

^{*}They implement dual production process and expand the production capacity. Thereby E Company becomes the second largest single quantity producer in the country. Owner of the C Company acquire another 10 tea factories to expand the market share and they become the second largest quantity producer as a group in the country.

The owner/managers as entrepreneurs are responsible for the initiation and design the change in the organization. Forward looking perspectives of E and C tea manufacturing firms desire to address the future needs in the marketplace by adopting following strategies. They implement fully automated CTC production process in addition to orthodox production (dual production) to cater global requirement since global consumption patten increasingly incline toward more convenient type of tea. CTC tea grades are more suitable for tea bags. C Company establishes friendly business environment and introduce insurance scheme for small holder farmers to ensure the continuous supply of raw materials. While E Company maintains their own plantation. By expanding production process E Company became the second largest single produce in Sri Lanka. Further, owner of C Company acquires more tea factories to expand the business and become the second highest quantity producer in the Island as group. They combine old traditions and experience with new technology to be competitive in the market by producing more quantities. Further, as market innovation, E Company introduces own brand to local market and working on direct export and implementing energy conservation technique as process innovation. C Company is working on introducing their brand to local market as new marketing strategy.

Experience of above six cases implies that tea manufacturing firms are emphasizing two main strategies as quality and quantity to gain competitive advantage for their firms. Accordingly A, B, D and F Companies are emphasizing more on quality in their business strategies while C and E companies emphasizing more on quantity. The experience of six cases implies that EO of tea manufacturing firms facilitating for different types of product, process and marketing innovation adoptions depending on their main focus. These ideas pointed the EO's antecedent role for innovation as highlighted by preliminary model. Innovation is a significant tool for sustain in the competitive market. Therefore, this reality verifies that EO is imperative for developing competitiveness through innovation.

7.4.3 The Role of External relationship

The environment within firms is constantly changing due to technological development, scarcity of resources and competitive market. One way to overcome some of constrains that entrepreneur may face is acquiring knowledge and resource by tapping into an extended pool, which exist outside the business. Generally it is accepted that good external relationships bring additional advantages of diffusion of industrial skills which encourage entrepreneurship. Based on the interview with owners, it shows that all tea manufacturing firms have recognized the value of external relationships. Basically six tea manufacturing firms concerned in the study have relationships with institutions related to tea industry namely tea brokers, green leaf suppliers, other tea factories, government facilitating institutions and education and research institutions.

Experience of six cases would explain how external relationships enhance the EO of firms. It indicated that all tea manufacturing firms got benefits from relationship with external institutions but the level of benefits received from each institution depending on the strength of relationship. Table 7.7 illustrates the level of relationships with each institution and Table 7.8 reveals befits of external relationships perceived by tea manufacturing firms. External relationships enhance accessibility, meaning the extent that an entrepreneur is actually being able to receive informational, physical, and emotional support in the business process. Tea manufacturing firms maintain useful relations with related institutions to gain an optimal environmental response, access to critical resources and supplemental capabilities.

Table 7.7 Level of relationships with institutions related to tea industry (Mean values)

Company	Tea brokers	Suppliers	OTF	Government Ins		Education & research Inst.		
				TB	TSHDA	TRI	NIPM	University
A	4.00	5.00	2.33	4.00	3.67	4.00	2.67	1.67
B	4.00	5.00	3.00	4.33	4.00	4.33	4.00	1.67
C	4.33	5.00	3.00	3.33	3.00	3.00	2.33	1.00
D	4.33	5.00	3.00	4.33	4.00	4.00	3.67	2.67
E	4.33	5.00	3.33	4.00	3.00	3.33	4.00	2.00
F	4.33	5.00	2.33	4.00	3.33	3.67	3.67	2.33
Sample*	4.46	4.45	2.16	3.70	2.03	2.62	2.43	1.26

Note: Scale; 1= No extent and 5 = very high extent and Relationship was measured by 3 variables; intensity, frequency and reciprocal service

*,n = 109; sample which used for previous analysis

For example, relationship with tea brokers facilitates to attract buyers and identify entrepreneurial opportunities because they basically provide valuation report about each firm's teas and market information. Thereby increase the proactive behavior of the firm by enhancing the quality of tea grades and arranging their production process based on market demand and buyers requirements. Tea brokers also provide financial assistance as mentioned by C, D, E Companies to enhance the risk taking behavior of tea manufacturing firms such as borrowing heavily or investing in uncertain markets. Experience of A, B, C, and F Companies imply that tea brokers provide consultation and advisory facilities for their innovative ideas. Further, experience of A, B, and D Companies emphasize that they do direct exports in addition to their main marketing channel of tea auction. Therefore, they maintain direct personal contact with foreign buyers which often assist the entrepreneurs in gaining access to competitive information and potential buyers. Further, A Company mentions that those relationships inspire new idea for product innovation.

Experience of all tea manufacturing firms express they are maintaining good relationship with their green leaf suppliers. It provides opportunity for getting raw material consistently in terms of quality, quantity and continuity. Table 7.9 explains the benefits that tea manufacturing firms offer to their green leaf suppliers. The supplier development support offer to their supplier partner seems focus in three types; quality, price and welfare. For instance, developing loyal relationship with small holder farmers ensures the mutual benefit of getting quality raw materials continuously. That is facilitating for improve the firm's business strategies (Further, results of chapter 4 revealed that availability of green leaf significantly influence on firm's EO).

Table 7.8 Benefits of external relationships for tea manufacturing firm

Institution	Benefits received from external relationships	Company					
		A	B	C	D	E	F
Tea brokers	Valuation report about teas	x	x	x	x	x	x
	Get best price for teas	x	x	x	x	x	x
	Obtain market information			x		x	
	Aware the buyers special requirement				x		x
	Financial assistance			x	x	x	
	Consultation as required	x	x	x			x
Other Tea Factories	Assuring the availability of good quality green leaves		x		x		x
	Avoid unhealthy competition for green leaf	x		x		x	
	Knowledge about new technology		x	x	x		
	Collaborative work for enhance the productivity of plantation					x	
Gov. Facilitating Institutions	TB	Provide facilities for direct export	x	x		x	
		Conduct quality assurance program	x	x		x	x
		Financial assistance - new machinery ^a	x ^a	x ^a	x ^a	x ^b	x ^a
		factory modernization ^b					
	TSHDA	Information about international tea exhibitions		x		x	x
		Provide expert knowledge for extension service for small holders	x	x	x	x	x
Education and Research Institutions	TRI	Provide expert knowledge for program conducting for farmers	x	x	x	x	x
		Assist to overcome technical problems	x	x			x
		Assist to implement new technology				x	
		Management consultation and training	x	x	x		x
		Share knowledge of new research findings		x		x	
	NIPM	Enhance capabilities of human resource through formal trainings		x		x	x
		Inspire for new product development		x		x	

The results of chapter 4 revealed that relationship with OTF is not significantly influence on EO and it negatively influence on risk taking behavior of the firm. Since, as explained in chapter 2, currently Sri Lanka is experiencing comparatively low green leaf yield. Therefore, there is high competition among tea factories for green leaf. Further, according to chapter 4, information sharing, innovation development and research and development support were considered as benefits received from OTF. But they were also not significantly correlated with EO. However, in case studies we concerned the leading tea manufacturing firms in low elevation. Evidence of case studies revealed (see Table 7.8) the importance of relationships with OTF in relation with their business strategies. Accordingly, relationship with OTF help to control the competition for green leaf and to enhance the quality of raw material which is essential to improve the quality of made tea and adopting new product development strategies. Therefore, this implies the importance of emphasize quality and availability of green leaf through relationship with OTF. Further, B, C and D Companies mutually benefited by sharing the knowledge and information of new technologies. Thereby enhance the innovativeness of the firm because it is important to utilize relationships effectively than just having relationships. Consequently, as leading firms they involve more collaborative work and have effective relationship with OTF to enhance their business strategies (This caused different result than chapter 4).

Relationships with government facilitating institutions such as TB and TSHDA are important for tea manufacturing firms to enhance EO strategies as expressed by the experience of all firms. Technical and financial support received from TB can be more important contextual influence in boosting up EO activities of tea manufacturing firms, since TB provides financial assistance for factory modernization and process improvement. Further, they conduct quality assurance programs to ensure the quality of made tea and enhance the quality of green leaves. TSHDA is always providing expert knowledge for training and extension services provided for green leaf suppliers. Further, experiences of B and D Companies confirm that relationships built with external parties for the purpose of knowledge acquisition are important source of organizational innovativeness.

As experience of six cases, the relationship with educational and research institutions mainly occur with TRI and NIPM. Additionally, D Company mentioned that relationship with university also important for tea manufacturing firms in order to improve their products since participating training and conferences conducted by universities inspire new ideas. That is vital for enhance the new product and process innovations strategies. Moreover, relationship with TRI provides means of developing technological knowledge and consulting assistance to overcome their technological drawbacks as experience of all factories. For instance, D and E companies imply that TRI assist them to implement energy conservation strategies. Further, TRI provides professional assistance for training programs and extension services conducted by tea manufacturing firms for their small holder farmers. NIPM facilitating for improve the capabilities of tea factory staff and management by conducting formal training programs as explained by B, D, E and F Companies. Since, external knowledge might complement and leverage firm's own knowledge and be critical source of enhancing EO strategies of tea manufacturing firms.

This research finding is in line with previous research findings of Marchesnay (2000) that is external relationships provide advice, information, financial and other resources to enhance entrepreneurial behavior. Experience of B and D companies implies that firms that are having comparatively higher level of relationship with government facilitating institutions and educational and research institutions facilitating for EO strategies

emphasize on quality. Thereby they adopted more product, process and market innovations comparing to other firms.

Table 7.9 Benefits that company provided to suppliers

Company	Supplier development support for small holder farmers
A	<ul style="list-style-type: none"> - Conduct special program call “Ladalu Mahimaya” for empower tea small holder farmers - Conduct monthly meeting for tea small holder farmers - Timely involve to suppliers problems - Financial assistance - Provide green leaf transport facilities - Welfare facilities
B	<ul style="list-style-type: none"> - Conduct training program and extension service to small holders - On time payments - Promoting replanting and provide best planting materials to enhance the productivity of tea lands - Advance and loan facilities - Welfare facilities
C	<ul style="list-style-type: none"> - Establish friendly business environment for small holder farmers - Introduce insurance scheme for small holders - Extension service - Introduce weekly advance system and loan facilities - Welfare facilities
D	<ul style="list-style-type: none"> - Implement programs to uplift social status of small holder farmers - Conduct training program and extension service to small holders - Implement measures to reduce post harvest losses of green leaves - Provide green leaf transport facilities - Advance and loan facilities
E	<ul style="list-style-type: none"> - Extension service and training programs regarding tea cultivation - Provide advance facilities and introduce long term loan facilities - Introduce new payment system based on the quality of green leaves - Welfare facilities
F	<ul style="list-style-type: none"> - Introduce fixed payment date for small holder farmers - Conduct training program and extension service to small holders - Conduct crop clinic for small holders with collaboration with TRI and TSHDA - Provide green leaf transport facilities - Advance and loan facilities - Welfare facilities

The evidence generated across the case studies suggested that relationship with institutions related to tea industry facilitating to enhance the EO of tea manufacturing firms by providing range of befits such as raw material, financial assistance, information, human resource development, education and training, consultation and professional assistance and innovation development support. Additionally, as proactive measure all tea factories tend to develop their green leaf suppliers to ensure the quality and quantity of raw material supply. Therefore, entrepreneurial infrastructure and supplier development makes the interface of relationship between external institutions and EO of tea manufacturing firm as illustrated in revised model (Figure 7.2).

7.4.4 The Importance of Entrepreneurial Competencies

The business operation is considered to be very complex in a competitive business environment. It is important that entrepreneurs must react with the environment proactively in order to minimize the negative effect of the challenging business environments. Entrepreneurs are therefore challenged to have a set of competencies to success in their entrepreneurial actions. Entrepreneurial competencies are personal construct and that have been identifies as a specific group of competencies of owner/manager relevant to perform their job roll successfully.

In this study, entrepreneurial competencies are defined as individual characteristics that include both attitudes and behaviors (Bird, 1995), which enable entrepreneurs to achieve and maintain business success. In case of entrepreneurs, different levels of entrepreneurial competencies are exhibited by owners to carry out changes in tea manufacturing firms as shown in Table 7.10 and Table 7.11. Accordingly, all owners exhibited strong managerial capabilities, hard work and dedication to task. Table 7.11 shows that all cases have their own unique way to response their competitors with suitable business strategies. Following section describe how owner's competencies are influence on tea manufacturing firm's business strategies.

Table 7.10 Level of entrepreneurial competencies of owner

Company	Mean values of entrepreneurial Competencies					
	Opportunity	Organizing	Strategic	Relation	Commitment	Conceptual
A	3.75	4.14	4.00	4.40	4.50	3.50
B	4.00	4.86	4.75	4.60	4.75	3.83
C	3.75	4.14	3.75	4.40	4.50	3.50
D	3.75	4.57	4.00	4.60	4.50	3.50
E	3.75	4.14	4.00	4.60	4.75	4.00
F	3.75	4.43	4.50	4.60	4.50	4.00
Sample*	2.89	4.30	3.98	4.44	4.22	3.31

Note: Scale; 1= strongly disagree and 5 = strongly agree, *,n = 109; sample which used for previous analysis

Experience of all cases implies that all entrepreneurs are having strong competency in committing, determining and work positively towards accomplishing tasks. They always drive to see the end results of their business actions. This implies that how commitment competency of entrepreneurs shaping the business strategies to progress in advance with business. All cases highlighted the opportunity competency. That express through owners ability to scan the business environment and recognize opportunities. As experience of these cases, owners use different means such as, international exposure, keen on market and global trends and aware about new technological advances. However, not all owners are equally likely to recognize same entrepreneurial opportunities and it depend on the knowledge already processed. Thereby they developed the business strategies. E.g. A and B Companies develop unique tea grades, D and F are implementing energy saving techniques, while C and E are implementing CTC production process.

Table 7.11 Entrepreneurial competencies highlighted in each case

Company	Owners view about their competencies	Highlighted entrepreneurial competencies	Entrepreneurial awards
A	Owner full time involved and highly committed to business development since business become passion of his life. Further, they compete with their own standard and owners experience and continuous opportunity seeking improve their EO strategies.	Commitment, strategic, organizing and opportunity competencies	Yes
B	He said that they work as a team toward main target of promoting our own brand in the global market by 2015. Every day they communicate the daily targets with employees and provide opportunity to express their ideas thereby they develop their business strategies	Commitment, strategic, organizing, opportunity and relationship competencies	Yes
C	When he started the business carrier as green leaf dealer in 1983, his main target was constructing tea manufacturing firm in his village and he was able to accomplish that in 2005.	Commitment, opportunity and relationship competencies	Yes
D	The owner of D Company said that he had high motivation to start own tea manufacturing firm. So after taken over his father's business, fully devoted his effort to develop the business. Then tea manufacturing firm has been undergoing continuous improvement and modernizations. Further, he considered employees and small holder farmers as part of business family and keen on maintaining good relationship with external parties.	Commitment, strategic, organizing, opportunity and relationship competencies	Yes
E	He is personally involving all the aspects of this business to make sure that all departments are working at peak efficiency towards the organizational goals. He identifies new opportunities. Further, they work as a team and adopted better employer-employee relationship.	Commitment, strategic, opportunity, relationship and organizing competencies	Yes
F	He proud about the innovative business strategies he utilized in industry. According to him, self-confidence is vital to tackle the business problems effectively. He always monitor the main aspects of his business and keen on market opportunities where could tap for benefits of the company under his charge.	Commitment, strategic, Conceptual, opportunity, relationship and organizing competencies	Yes

Except C Company other cases are highlighted owner's strategic competency. It means these firms are formulating, implementing and evaluating business decisions that enable them to achieve their main targets. For instance, B Company express that they work towards their ultimate objective of "promoting own brand in global market" and formulating business strategies accordingly and experience of E implies that owner make sure that all departments are working at peak efficiency towards the organizational goals. That indicated EO of firms highly depends on strategic competencies of owner. Experience of B, C, D, E, and F Companies highlighted that how relationship competency enhances the organizational business strategies. C Company is obtaining required capital from banks to acquire additional tea factories by maintaining trusted relationships. B, D, E and F firms emphasize that they work as a team and maintain good relationship with employees and their main suppliers. Further, B Company communicates their daily target with employees every day and F company implements open door policy.

As experience of A, B, D, E and F Companies, owners of those firms organize the human, technological and other resources effectively to facilitate the business strategies. In order to overcome the skilled worker problem and upgrade the workers capabilities, periodically send them for trainings. Implement energy saving strategies specifically D and E Companies. Adopted 5 S systems to minimize the wastage and comply with ISO 22 000 food safety management system. Experience of E and F Companies explain how owners used their conceptual talents to solve the problems and dealing with uncertainties. Owners of those firms monitor the main aspects of the company and tackle the problems in more effectively. All entrepreneurs of this study have been awarded by entrepreneurial awards. Further, it confirms that entrepreneurial competencies influence on EO of their firms.

As explain in six cases, by using entrepreneurial competencies appropriately, owners can shape the firm's business strategies of innovation and business growth. Thereby it facilitating for better strategies such as innovative capability of firm, cost-saving ability, quality and flexibility. Thereby can plan and work towards a firm's long term performance. Thus it can be confirmed that entrepreneurial competencies influence on EO strategies of tea manufacturing firms. This finding is in line with previous studies that organizational strategies are influenced by personality traits of CEOs (Miller and Toulouse, 1986; Miller et al., 1982). Further, above experience of B Company implies that opportunity, organizing, strategic, relationship and commitment competencies of owner highly influence on strategies focus of quality. While experience of E Company shows that relation, commitment and conceptual competencies are more important for strategic focus of quantity.

7.4.5 Presence of Entrepreneurial parents

The experience of five case studies out of six were highlighted that presence of entrepreneurial parent had influence on the business strategies of their tea manufacturing firms. A, B, D and F Companies were founded by the fathers of present owners and E was established by grandfather. Study conducted by Dyke, et al. (1992) found that presence of entrepreneurial parent's impact on the performance of food manufacturers.

In discussing about the impact of entrepreneurial parent on the business strategies, owner of A Company stated that values and discipline of his father embedded in their current business strategies by conserving traditional art of making tea which preserves intrinsic aroma, taste and quality. The owner of B Company mentioned; that "Our passion for producing high quality tea has been initiated by father". Therefore, over the years they built reputation for their own teas and maintain the consistency in quality. For instance, owner of D

Company stated that his father emphasized in integrity of doing business and upholding the prestigious “Pure Ceylon Tea” image. Therefore, they adopted business strategies to offer optimal quality and healthiest teas in freshness. According to F Company owner, they give emphasis to produce hygienically fine quality tea from the day of establishment. For continuation, now factory is equipped with some of modern machinery in tea manufacturing to improve productivity and quality under good hygiene conditions. The owner of E said; art of making black tea has been refined through experience and pass down generations. Presently we combine age old traditions and experience with modern technology to be one of the single largest privately owned producer of tea in Sri Lanka.

Further, they mentioned that hand on experiences obtained from their parent’s impact on their success due to the exposure they received to enrich their business strategies. This finding is in line with previous study of Duchesneau and Gartner (1990), that successful business owners were more likely to have entrepreneurial parents. The findings emphasize that presents of entrepreneurial parents appears to provide entrepreneurs with more realistic expectations from self-employment and kinds of attitudes and behaviors necessary for shaping their business strategies

7.5 Conclusion

This study demonstrates the EO and innovations of tea manufacturing firms in Sri Lanka. As a developing country, Sri Lanka has concern to develop the tea manufacturing firms by recognizing the factors promoting competitiveness precisely. Since better understanding about factors promoting competitiveness such as innovation of tea manufacturers make clear path for government interventions. Thereby government can design the development program by concerning those factors.

Finding of this study confirm that tea manufacturing firms are emphasizing two main strategies as quality and quantity to gain the competitive advantage of their firms. Accordingly, four main variables could be identified as factors promoting competitiveness namely external relationships, entrepreneurial competencies, entrepreneurial orientation, and innovation. The evidence of six case studies implies that institutions related to tea industry providing range of entrepreneurial infrastructure to enhance the EO of tea manufacturing firm. Further, tea manufacturing firms develop their suppliers to ensure the quality and quantity of raw material supply. Therefore, entrepreneurial infrastructure and supplier development serve as the interface of relationship between external institutions and EO firm. Additionally findings illustrated that presence of entrepreneurial parents facilitating for enhance their business strategies. The conceptual model is thus modified considering the findings of the study and it is depicted in Figure 7.2.

The model presented in Figure 7.2 provides a contribution to the entrepreneurial literature by illustrating the integrated model of factors promoting competitiveness. Further, revised model provide important point for the researchers to conduct further research. Future studies could use this model to examine the applicability of this model for both service and manufacturing firms from various industries. In conclusion, the tea manufacturing sector will continue to take part a progressively more significant role in the Sri Lankan economy. By combining external factors through external relationships with other internal factors through enhancing the EO behavior suitably, tea manufacturing firms would able to compete in the global market.

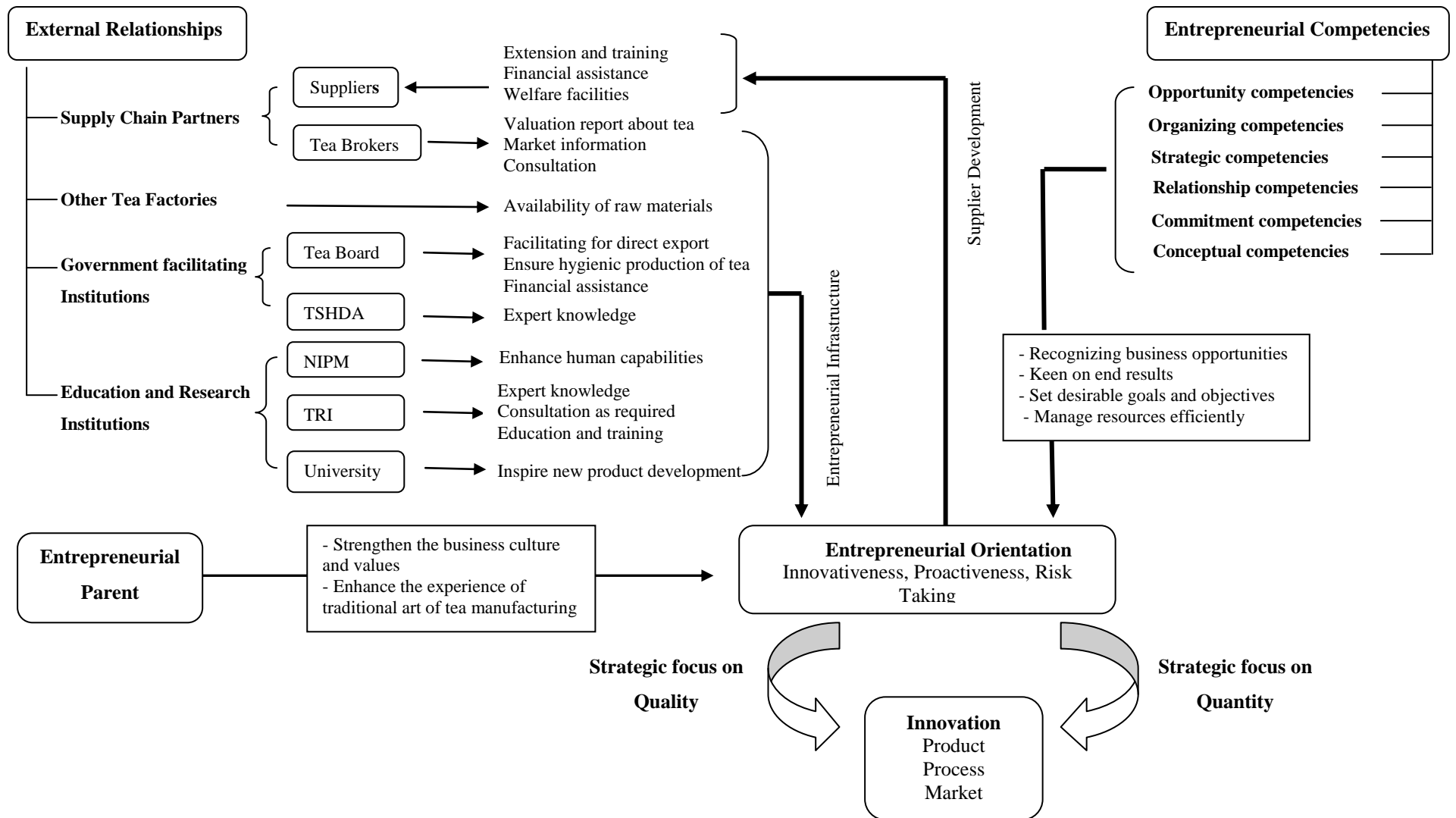


Figure 7.2 Revised Model of sources of competitiveness in tea manufacturing firms in Sri Lanka

Chapter 8

Conclusion and Policy Implications

8.1 Conclusion

In general, this research intends to analyze the EO of tea manufacturing firms in Sri Lanka. In particular, it explores the importance of EO related to innovation adoption of the firm. This investigation builds on perspective of strategic choice which in general drivers to innovation. The tea grown in Sri Lanka is classified to mainly three areas as high, mid and low based on the elevation. This study was conducted in tea manufacturing firms located in low elevation zone where it contributes more than 60% to national production and more tea factories (presently 430 located out of 714) are located. Further, under developing economic conditions all tea factories in Sri Lanka have several similar features such as technology, capital, market accessibility, low skilled labour and so forth. Therefore, this study could describe the role of EO of tea manufacturing firms in Sri Lanka under developing economic context.

In chapter 2, this study discussed more details regarding the role of tea industry and this study mentions the importance of tea industry in Sri Lanka as developing country. The tea industry played leading role in the Sri Lankan economy from more than a century. The country relies heavily on the tea industry due to its high net foreign exchange earning capability. Tea export continued to be major agricultural export, contributing nearly 60% to the total agriculture exports. While contributing 14.4 % of the Sri Lanka's total export and value added as a percentage of GDP is 1.3% in 2012. Further, it has been recognized as an important sector in Sri Lanka for reducing unemployment and poverty since, about 2 million people are employed directly and indirectly in the tea industry. Additionally, "Ceylon Tea" as beverage has been enjoyed by people all over the world for generations due to its high quality. This stress by the finding of Yuliando and Nakayasu (2006), they revealed that Sri Lanka tea was strong substitute for Indonesian tea but not vice versa.

But at present, Sri Lanka's competitiveness has been declined due to high competitive pressure in the global market and several issues in internal supply. Sri Lanka becomes the high cost producer (it is US\$ 2.33 per kg) among leading producer countries due to low field and factory level productivity. Further, competition from other newly emerging producer countries that produce alike teas at a much lower cost and continual focus on orthodox and bulk tea could affect the country's competitive position since, global demand is inclining toward the more convenient types of tea. When considering the growth of export quantity from 2002 to 2012, it is revealed that growth rate of Sri Lanka is 6.99% while Kenya is 57.87%. Further, it was found that Kenyan tea was substitute to others when Sri Lankan and Indian tea was complement. Therefore it implies that tea export market is highly competitive (Yuliando and Nakayasu, 2006).

Under this scenario, survival of Sri Lankan tea manufacturing firms seems to be undergone several crisis unless they have a proper strategic focus in developing their basis of competitive advantage. Strengthening of factors which facilitating for competitive advantage of these firms is vital in enhancing their own performance and will invariably is important in facing the competitive threats that accelerate along with the globalization of the tea industry.

Porter (1990) considers that the most important issue of all for competitiveness lies in the pressure that factors such as infrastructure, demand condition, supporting institutions and firm strategy exert on firms to

innovate. Further, said that to implement competitive strategy, firms need to become innovative. Evolutionary perspective also suggests that innovation is not imperative for survival of individual firms, it collectively necessary for economic well-being of the country. Therefore, it is important to recognize the firm's position in terms of the factors promoting competitive advantage and how they facilitating for firm's competitiveness. This study proposed that EO of tea manufacturing firms will facilitate for its innovation adoption and external relationships and entrepreneurial competencies as determinants of EO. Thereby those were considered as the factors promoting competitiveness of tea manufacturing firms.

Innovation can be considered as a fundamental in gaining competitive advantage, since it is important to combine innovative effort with appropriate strategy to win the competitive market. Previous research studies suggest that EO drives innovative activities. It means EO promotes innovation by affecting the introduction and implementation of different innovative strategies within the firm. Further, Miller and Friesen (1982) argue that entrepreneurial firms innovate regularly while taking considerable risk in their product- market strategies. It is evident that owner/manger's influence on the strategic orientation of the firm since they can create and sustain competitive advantage by the continuous improvement and updating of firms strategies and resources. Entrepreneurial competencies are facilitating for effective or successful job performance. The competitiveness of firms will obviously reflect successful management by entrepreneurs, therefore their competencies also influence on firms business strategies which leading for innovations. On the other hand external relationships assist to obtain physical and emotional support which is essential for firm's business process. Additionally, it facilitating for identify entrepreneurial opportunities which are vital to be competitive in the market.

The purposes of this study are to analyze (1) the relationship between external relationships and EO, (2) the relationship between owner/managers competencies and EO, (3) the relationship between EO and innovation and (4) develop the theoretical model of factors promoting competitiveness in tea manufacturing firms. Hypothesis of this study is these four types of variables (external relationships, entrepreneurial competencies, EO and innovation) are likely to be important to improve the competitiveness in the context of tea manufacturing firms in developing country like Sri Lanka. Chapter 3 described the profile of tea manufacturing firms and background characteristics of the owner/managers of studied sample. Further, it presented the descriptive statistics of the variables which were using for analysis in rest of the chapters.

In chapter 4, this study analyzes the role of external relationship in improving EO of tea manufacturing firms as external determinant of EO. The results of this study indicated that external relationships, specifically relationship with supply chain partners and relationship with government facilitating institutions are facilitating for enhance EO of tea manufacturing firms. However, relationships with OTF and education and research institutions are not significantly influenced under the context of Sri Lankan tea industry. That may due to high competition among tea factories for green leaf. Further, relationships among firms are depending on the cost and benefits perceived by the firm. When considering dimensions of EO, risk taking behavior of the firm is highly influenced by external relationships than innovativeness and proactiveness of the firm. This finding is further stress with respect to findings of entrepreneurial infrastructure. Accordingly, benefits received from tea broker companies and government facilitating institutions more likely to have positive relationship with EO. While facilities received from education and research institutions less likely to have significantly correlate with EO. This finding partially support for previous study which emphasized that social capital allows firms to improve their EO (e.g. Lee et al., 2001).

It can be concluded that well-organized external relationships facilitate to find an optimum solution under the turbulent environment by enhancing firms' EO. By having external relationships, tea manufacturing firms would be able to utilize knowledge, physical and emotional resources that they do not have. It means that they have a chance to become more entrepreneurial since external relationships provide a better platform for that.

In chapter 5, this study continues to analyze the role of owner/manager's entrepreneurial competencies in improving EO of tea manufacturing firms as an internal determinant of EO. This study had considered six competency areas as opportunity, organizing, strategic, relationship, commitment, and conceptual competencies. The results revealed that background characteristics of owner/manager have a direct effect on entrepreneurial competencies. Among them, training and other business experience are important since as factors they are more prone to influence the development of entrepreneurial competencies. It emphasized that owners of tea factories have a higher level of competencies than managers which is in line with previous findings of Li (2009). Besides, background characteristics of owner/managers do not directly influence on EO of the firm while it has an indirect effect on EO through entrepreneurial competencies.

It is evident that knowledge, skills and behavior of an entrepreneur are essential to perform the job successfully and an entrepreneur is highly influenced on the business strategies. Therefore, it is important that owner/manager must work proactively in order to mitigate the challenges arising in the business environment. Entrepreneurial competencies are playing a critical role in taking such proactive decisions. The findings of this study also imply that strategic and commitment competencies of owner/manager improve the EO of the firm. When considering the dimensions of EO, organizing and strategic competencies significantly effect on innovativeness and conceptual and commitment competencies enhance the proactive behavior of the firm. Commitment competency has a positive effect on the risk taking behavior of the firm. Accordingly, owner/manager's competencies are highly influenced on innovativeness whereas less likely effect on risk taking behavior of the firm. It can be concluded that owner/managers' competencies are facilitating for EO of tea manufacturing firms to ensure the competitiveness in a challenging business environment.

In chapter 6, this study analyzes how EO influences on the different types of innovations adopted by tea manufacturing firms in Sri Lanka. Results imply that tea manufacturing firms have a low tendency to adopt marketing innovation than product and process innovation adoptions. Primary motivation for innovation adoption is commercial development while new product ideas and financial rewards are also rated as other important reasons. When considering the importance of factors promoting innovation adoption, it revealed that buyers' information more significantly influence on product, process, marketing and overall innovation adoption. However, research and development activities comparatively less significantly enhance product, marketing and overall innovation adoption. It means that demand factors have more tendencies to enhance the innovation adoption of tea manufacturing firms.

This study revealed that dimensions of EO are independently influenced on different types of innovation adoption. Accordingly, innovativeness of the firm enhances the product, process, market and overall innovation. While proactive behavior is positively related with process, market and overall innovation of the firm. But risk taking behavior is not significantly influenced on innovation adoption. When considering the different types of innovations adopted by tea manufacturing firms, product innovations highly depend on the innovativeness of the firm. Meanwhile, none of innovation is significantly influenced by risk taking behavior of the firm. Since tea manufacturing firms tend to adopt innovation than innovation generation. It can be concluded that

innovativeness and proactiveness as dimensions of EO enhance the different types of innovations adopted by tea manufacturing firms in Sri Lanka since adoption of innovative strategies are vital to be competitive in the global market.

In chapter 7 theoretical frame work is explored in six cases. The six cases are selected from the leading tea manufacturing firms that represent how the identified theory has been implemented in the practical work. All cases confirm that external relationships, owner/managers competencies, EO and innovation are facilitating for competitiveness of tea manufacturing firms. The study revealed that how external relationships, owner/manager competencies, EO and innovation are contributing for firm's competitiveness. In addition, each firm had its own set of strategies, which differentiate it from others and give competitive advantage over its competitors. Findings implied that tea manufacturing firms are emphasizing two main strategies as quality and quantity to gain the competitive advantage of their firms. Additionally, it is evident that presences of entrepreneurial parents are also influenced on the firm's business strategies.

As a whole, findings suggest that adopting innovative strategies, depending on the firm's EO and owner/manager competencies rather than just it happened by default. Further adopting different types of innovations are vital for the tea manufacturing firms to face the market competitiveness as well as contribute substantially to the Sri Lankan economy. Therefore, this study confirms that the reasonability of the proposed approach, which could be tested in the future research. External relationships, entrepreneurial competencies, EO and innovation have been confirmed in this study as factors promoting competitiveness of tea manufacturing firms.

8.2 Contribution of this study

This study has three main theoretical contributions as follows. First, this study proposed new integrated approach to increase the competitiveness by enhancing EO and innovation of tea manufacturing firms in Sri Lanka under developing economic context. Since, EO is a firm level construct that closely related to strategic decision-making process and answer the question of how business is undertaken. Therefore, it may influence by the socio economic conditions of the country. Second, this research provides empirical evidence to examine identified relationships in the real business practice. Finally, this study is strengthening the existing knowledge related to entrepreneurship related to the tea industry.

In this study analyzed internal and external determinants of EO. To analyze the external determinant of EO, the relationship between external relationships and EO has been analyzed. In order to discover the internal determinant, relationship between owner/managers competencies and EO was analyzed. This study also examines how EO of the firm influenced on the different types of innovation adoptions. Overall, the novelty of the study reported is that integrated examination of factors promoting competitiveness of tea manufacturing firms by combining external relationships, entrepreneurial competencies, EO and innovations. Moreover, this is the first study that analyzes EO and innovation on the tea manufacturing firms in Sri Lanka by proposing integrated approach to improve the competitiveness.

This study contributes to entrepreneurial literature by providing theoretical and empirical insights regarding external relationships, entrepreneurial competencies, EO and innovations of tea manufacturing firms under developing economic context. Since, most of previous studies related to EO and innovation have been conducted in the developed countries.

Study conducted by Marchesnay (2000) revealed that external relationships provide resources to enhance entrepreneurial behavior. This study also in line with that finding and additionally found that having better relationships with supply chain partners and government facilitating institutions positively influenced on firm's EO. Further, external relationships are highly influence on the risk taking behavior of the firm. Santoro and Gopalakrishnan (2000) argued that collaboration with research institutions improve the technical knowledge. But under this context relationship with research institutions not significantly improve the EO strategies of firm. Findings of Kotey and Meredith (1997) found that personal values of owner/manager influence on strategic orientation of a business. Further study conducted in service sector by Man et al. (2008) found that commitment competencies of entrepreneur significantly influence on performance while opportunity and relationship competencies positively effect on competitive scope. However, present study describes the entrepreneurial competencies as internal determinant of EO and empirical evidence shows that commitment and strategic competencies of owner/manager significantly effect on EO. Further, innovativeness of the firm is highly influenced by owner/managers competencies. Thereby this study explains the role of external relationships and owner/managers competencies on EO and its dimensions under developing economic context.

This study also contribute to existing literature by providing empirical data on how individual dimensions of entrepreneurial orientation influence on different type of innovations. That implies innovativeness and proactive behavior of the firm leading for innovation. Such kind of contribution is important for completing the explanation of how EO facilitating for innovations.

Theoretical contribution of this research provides new insight to tea sector research in relation to the tea manufacturing firms in Sri Lanka to follow up related studies in entrepreneurship, which make available more consistent data and interpretations in tea sector development. Moreover, another valuable contribution of this study is strengthening body of knowledge related to competitiveness of tea industry, by investigating the relationship among variables of external relationships, entrepreneurial competencies, EO and innovation. Consequently, such contribution is vital to policy makers and managers to enhance the competitiveness of tea manufacturing firm by emphasizing on EO and innovation.

8.3 Policy implications

Even though tea industry in Sri Lanka has an important role, at present competitiveness of Sri Lankan tea industry has been declined due to high competitive pressure in the global market and several internal supply issues. Integrated frame work that combining internal and external determinant of EO and innovation can be implemented to overcome the problem of tea manufacturing firms and enhance the competitiveness of tea industry in Sri Lanka. Therefore, to improve competitiveness of tea manufacturing firms in Sri Lanka, It would better to strengthen the external relationships and owner/managers competencies. Thereby enhance the EO and innovative behavior of the firm.

It is evident that relational capital is providing better platform to enhance the EO of tea manufacturing firms by providing physical and emotional support to their business process. Government facilitating institutions have strategic function to overcome problems of the innovation that occur due to lack of technology or capital. Findings revealed that availability of green leaf is significantly influence on EO. However, relationship with OTF (competitors) negatively effect on risk taking behavior of the firm. At present small holder farmers are dominated in low grown region and large number of tea factories competing for leaf, resulting in high

competition. It also leads to negative impact on the quality of tea. Therefore, it is required to avoid high competition among tea manufacturing firms by strengthening policies and encouraging entrepreneurial culture in tea small holder farmers to enhance the quality and uninterrupted supply of input. The relationship with education and research institutions was not significant, therefore it is important to encourage education and research institutions to maintain better relationship with tea manufacturing firms in order to upgrade their EO and innovation. Additionally, government and institutional policy makers need to consider the fundamentals of entrepreneurship to upgrade the technical and business know how of the firm when they decide entrepreneurial infrastructure since, study revealed that entrepreneurial infrastructure received by tea manufacturing firms positively correlate with EO of the firm.

As internal determinant, findings of the study reveal that entrepreneurial competencies are influenced on the EO of the firm. Therefore it is important to facilitate entrepreneurs to enhance their own competencies. When considering the background characteristics of owner/manager, study emphasizes that training is significantly enhancing the entrepreneurial competencies. On this basis, a complete scheme for policy could involve a training program that accompanies the tea manufacturing firms in increasing their owner/managers competencies. In this means they would able to adopt the entrepreneurial strategies which help to mitigate the challenges in global market.

Since EO has positive impact on the different types of innovations adopted by tea manufacturing firms, it could be considered as source of competitiveness. Therefore, EO behavior should be internalized in the tea manufacturing firm's culture if they would like to increase the competitiveness. Findings of this study suggested that innovation policy should be supposed to more emphasize on factors promoting innovation. Therefore, it should encourage research and development in tea industry to enhance the innovation and facilitate for knowledge transfer among firms since, findings revealed that tea manufacturing firms less likely to generate innovation. Additionally it is required to encourage research institutions to be in line their research priorities with necessity of tea manufacturing firms.

Study conducted by Gupta and Dey (2010) in Indian tea manufacturing firm identifies poor resource utilization responsible for declining the productivity of tea manufacturing firms. They also suggested that it is important to adopt new strategies to enhance the productivity such as redesigning job activities, adopting alternative fertilizers, outsourcing green leaf production and adopting energy conservation by re-engineering of production plant. Therefore, tea manufacturing firms should change their approach to business in order to overcome the current challenges. The manufacturing firms need to make radical change by enhancing EO of the firms and thereby adopting product, process and marketing innovations as described in case studies of present study.

As revealed by case studies it is important to enhance the quality of tea by protecting the image of "Ceylon Tea". Further, it is vital to encourage tea manufacturing firm to expand their product strategies by producing flavored tea, green tea, special tea grades, tea bags and tea packets as product innovation adoptions and produce designer teas. To assure the best quality in keeping with international standards, tea manufacturing firms needs to adopt "Food factory concept" and obtaining international quality certificates such as ISO 22000:2005, ISO 9001:2000 etc. It is important to automate the production process and implementing energy conservation technologies in withering trough and dryers to cut down the production cost in long run. Further, implementing computerized weighing system, strategies to reduce post harvesting loss of green leaf and maintaining

computerized data base to ensure the traceability would help to upgrade the production process as process innovation adoptions. As marketing innovation it is important to encourage tea manufacturing firms to promote their own brand and cater for niche markets in local and foreign and finding alternative marketing channels.

The empirical evidence of this study could be useful for government and policy makers to design support programs to enhance the EO behavior and innovation of tea industry since study revealed that promoting entrepreneurial culture among tea manufacturing firms is vital for uplift the competitiveness of tea industry in Sri Lanka.

8.4 Further Research

As any research, this study is subjected to several limitations that provide scope for further investigation. In this study, data were gathered from single source informants (owner/manager) in each firm. The underlying assumption behind this method is that such individuals are capable of providing opinions that reflect the company's behavior. According to Lyon et al. (2000), research using single-source self-reports—when carefully performed—are suitable and necessary means of operationalizing key constructs. However, a multiple informant approach could be adopted in future research.

Overall, there are several limitations inherent in this research that can be improved in the further research. First, this research was conducted under developing economic context therefore the degree of economic development may account for distinct behavior of tea manufacturing firms. It is possible to conduct in other regions and countries in the world, the magnitude and direction of the relationship of the model may be different.

Second, this study is limited to Sri Lanka's low-grown tea manufacturing sector. Therefore, it is context-specific and care should be taken in applying the conclusions to other contexts. Further, the current study focuses on a consumer product. Therefore, additional research related to industrial or service sectors is needed to ascertain the generalizability of this study's findings.

Third, the cross-sectional data used in this study do not allow for causal interpretations of the relationships among the variables analysed. Although the study has provided evidence in support of the hypotheses, a longitudinal study may help to identify the direction of causality among the variables. Due to the globalization process which has occurred over the past few decades, innovation in the tea industry seems inevitable. Finally, future research is needed to explore additional factors that may influence a firm's innovation, such as organizational culture, managerial characteristics, and to assess the interaction between the dimensions of EO and innovation in environments with varying technologies, economic stability levels, and competitive intensities.

In this study, did not explore the relationship between external relationship and entrepreneurial competencies. Theoretically, relationships between both variables are possible. External relationships facilitating for identify entrepreneurial opportunities, acquire knowledge and emotional support. It is better to analyze such a relationship in future research.

Reference

- Abeywickrama, L.M. & Rangi, P.S. (2004). Competitiveness of Sri Lankan Tea and Spices in India's Market: Impact of liberalized trade policies, *Proceedings on the second Academic Session*, University of Ruhuna, Sri Lanka. pp 8-14.
- Ahmad, N. H., Halim, H. A., & Zainal, S. R. M. (2010). Is Entrepreneurial Competency the Silver Bullet for SME Success in a Developing Nation?. *International Business Management*, 4(2): 67-75.
Retrieved from <http://docsdrive.com/pdfs/medwelljournals/ibm/2010/67-75.pdf>
- Alarape, A. A. (2007). Entrepreneurship programs, operational efficiency and growth of small businesses. *Journal of Enterprising Communities: People and Places in the Global Economy*, 1(3): 222-239.
<http://dx.doi.org/10.1108/17506200710779530>
- Alexandrova, M. (2004). Entrepreneurship in a transition economy: The impact of environment on entrepreneurial orientation. *Problems and Perspectives in Management*, 2: 140-148.
- Aloulou, W. & Fayolle, A. (2005), "A conceptual approach of entrepreneurial orientation within small business context", *Journal of Enterprising Culture*, 13 (1): 21-45.
- Anderson, A. R., & Jack, S. L. (2002). The articulation of social capital in entrepreneurial networks: a glue or a lubricant?. *Entrepreneurship & Regional Development*, 14(3): 193-210.
- Ariyawardana, A. (2003), "Sources of competitive advantage and firm performance: The case of Sri Lankan value-added tea producers", *Asia Pacific Journal of Management*, 20(1): 73-90.
- Athukorala, P. (1991). An analysis of demand and supply factors in agricultural exports from developing Asian countries. *Weltwirtschaftliches Archiv*, 127(4): 764-791.
- Atuahene-Gima, K. & Ko, A. (2001), "An empirical investigation of the effect of market orientation and entrepreneurship orientation alignment on product innovation", *Organization Science*, 12(1): 54-74.
- Avermaete, T., Viaene, J., Morgan, E. J & Crawford, N. (2003), "Determinants of innovation in small food firms", *European Journal of Innovation Management*, 6(1): 8-17.
- Avlonitis, G. J. & Salavou, H. E. (2007), "Entrepreneurial orientation of SMEs, product innovativeness, and performance", *Journal of Business Research*, 60 (5): 566-575.
- Balassa, B. (1965). Trade liberalisation and "revealed" comparative advantage¹. *The Manchester School*, 33(2): 99-123.
- Barringer, B. R. & Bluedorn, A. C. (1999), "The relationship between corporate entrepreneurship and strategic management", *Strategic Management Journal*, 20 (5): 421-444.
- Basnayake, B. M. J. K., & Gunaratne, L. H. P. (2002). Estimation of Technical Efficiency and Its Determinants in the Tea Small Holding Sector in the Mid Country Wet Zone of Sri Lanka. *Sri Lankan Journal of Agricultural Economics*, 4: 137-150.
- Baum, J. R., Locke, E. A., & Smith, K. G. (2001). A multidimensional model of venture growth. *Academy of Management Journal*, 44(2): 292-303. <http://dx.doi.org/10.2307/3069456>
- Bird, B. (1995). Towards a theory of entrepreneurial competency. *Advances in Entrepreneurship, Firm Emergence and Growth*, 2: 51-72. Retrieved from http://www.academia.edu/1282975/Toward_a_theory_of_entrepreneurial_competency
- Bommer, M. & Jalajas, D. S. (2004), "Innovation sources of large and small technology-based firms", *IEEE Transactions on Engineering Management*, 51 (1): 13-18.
- Boyatzis, R.E. (1982). *The Competent Manager: A model for effective performance*. John Wiley & Sons, New York.
- Brinckmann, J. (2008). *Competence of top management teams and success of new technology-based firms: A theoretical and empirical analysis concerning competencies of entrepreneurial teams and the development of their ventures*. Deutscher Universitäts-Verlag.
- Brockhaus, R. H. (1980), "Risk taking propensity of entrepreneurs." *Academy of Management Journal*, 23 (3): 509-520.
- Brush, C. G., Greene, P. G. & Hart, M. M. (2001), "From initial idea to unique advantage: The entrepreneurial challenge of constructing a resource base", *The Academy of Management Executive*, 15 (1): 64-78.
- Brüderl, J. & Preisendörfer, P. (1998), "Network support and the success of newly founded business", *Small Business Economics*, 10 (3): 213-225.
- Caird, S. (1994), "How important is the innovator for the commercial success of innovative products in SMEs?", *Technovation*, 14 (2): 71-83.
- Carlsson, B., Jacobsson, S., Holmén, M. & Rickne, A. (2002), "Innovation systems: analytical and methodological issues", *Research Policy*, 31 (2): 233-245.
- Central Bank of Sri Lanka. (2003 to 2012), *Annual Report*. Colombo, Sri Lanka.
- Chandler, G. N & Hanks, S. H. (1993), "Measuring the performance of emerging businesses: A validation study", *Journal of Business Venturing*, 8 (5): 391-408.

- Chandler, G. N., & Jansen, E. (1992), "The founder's self-assessed competence and venture performance", *Journal of Business Venturing*, 7(3): 223-236.
- Clark, J., & Guy, K. (1998), "Innovation and competitiveness: a review: Practitioners' forum", *Technology Analysis & Strategic Management*, 10(3): 363-395.
- Conner, K. R. (1991), "A historical comparison of resource-based theory and five schools of thought within industrial organization economics: do we have a new theory of the firm?", *Journal of Management*, 17 (1): 121-154.
- Cooke, P. & Wills, D. (1999), "Small firms, social capital and the enhancement of business performance through innovation programmes", *Small Business Economics*, 13 (3): 219-234.
- Cope, J., Jack, S. & Rose, M. B. (2007), "Social Capital and entrepreneurship: An Introduction", *International Small Business Journal*, 25 (3): 213-219.
- Covin, J. G. (1991). Entrepreneurial versus conservative firms: A comparison of strategies and performance. *Journal of management studies*, 28(5), 439-462.
- Covin, J. G. & Slevin, D. P. (1989), "Strategic management of small firms in hostile and benign environments", *Strategic Management Journal*, 10: 75-87.
- Covin, J. G. & Slevin, D. P. (1991), "A conceptual model of entrepreneurship as firm behavior", *Entrepreneurship Theory and Practice*, 16 (1): 7-25.
- Covin, J. G., Slevin, D. P., & Covin, T. J. (1990), "Content and performance of growth-seeking strategies: A comparison of small firms in high-and low technology industries", *Journal of Business Venturing*, 5(6): 391-412.
- Covin, J. G., & Wales, W. J. (2012), "The measurement of entrepreneurial orientation", *Entrepreneurship Theory and Practice*, 36(4): 677-702.
- Cragg, P. B., & King, M. (1988), "Organizational characteristics and small firms' performance revisited", *Entrepreneurship Theory and Practice*, 13(2): 49-64. ISSN:1042-2587
- Daily, C. M., McDougall, P. P., Covin, J. G., & Dalton, D. R. (2002), "Governance and strategic leadership in entrepreneurial firms", *Journal of Management*, 28(3): 387-412.
- Damanpour, F. (1991), "Organizational innovation: A meta-analysis of effects of determinants and moderators", *Academy of Management Journal*, 34 (3): 555-590.
- Damanpour, F. & Daniel Wischnevsky, J. (2006), "Research on innovation in organizations: Distinguishing innovation-generating from innovation-adopting organizations", *Journal of Engineering and Technology Management*, 23(4): 269-291.
- Damanpour, F. & Gopalakrishnan, S. (1998), "Theories of organizational structure and innovation adoption: the role of environmental change", *Journal of Engineering and Technology Management*, 15 (1): 1-24.
- Dasanayaka, S. W. S. B. (2011), "Global challenges for SMEs in Sri Lanka and Pakistan in comparative perspectives", *Business Review*, 6 (1): 61-80.
- David, F. R. (2013). *Strategic management: concepts and cases : A competitive advantage approach*, (14th ed.), Boston : Pearson. ISBN: 9780273767480
- Doloreux, D. (2004), "Regional networks of small and medium sized enterprises: Evidence from the Metropolitan Area of Ottawa in Canada 1", *European Planning Studies*, 12 (2): 173-189.
- Dos Santos, B. L. & Peffers, K. (1995), "Rewards to investors in innovative information technology applications: First movers and early followers in ATMs", *Organization Science*, Vol.6 No.3, pp. 241-259.
- Drucker, P. F. (2002), "The discipline of innovation" 1985. *Harvard Business Review*, 80(8), 95-100.
- Duchesneau, D. A., & Gartner, W. B. (1990), "A profile of new venture success and failure in an emerging industry", *Journal of Business Venturing*, 5(5): 297-312.
- Dyer, J.H. & Singh, H. (1998), "The relational view: Cooperative strategy and sources of inter-organizational competitive advantage", *Academy of Management Review*, 23: 660-679.
- Dyke, L. S., Fischer, E. M., & Reuber, A. R. (1992), "An inter-industry examination of the impact of owner experience on firm performance", *Journal of Small Business Management*, 30(4): 72-87.
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of management review*, 14(4): 532-550.
- Fairoz, F.M., Hirobumi, T. & Tanaka, Y. (2010), "Entrepreneurial orientation and business performance of small and medium scale enterprises of Hambantota district Sri Lanka", *Asian Social Science*, 6 (3): 34-46.
- Fey, C. F. and Birkinshaw, J. (2005), "External sources of knowledge, governance mode, and R&D performance", *Journal of Management*, 31 (4): 597-621.
- Fonseka, A. T. (1997), "Strategic approach to marketing of Sri Lankan tea", *Sri Lanka Journal of Management*, 2 (2): 155-182.
- Ganewatta, G., & Edwards, G. W. (2000, January). The Sri Lanka Tea Industry: Economic Issues and Government Policies. In *44th Annual Conference of Australian Agricultural and Resources Economics Society*.

- Ganewatta, G., Waschik, R., Jayasuriya, S. & Edwards, G. (2005), "Moving up the processing ladder in primary product exports: Sri Lanka's "value-added" tea industry", *Agricultural Economics*, 33 (3): 341-350.
- Gemünden, H. G., Heydebreck, P., & Herden, R. (1992), "Technological interweavement: a means of achieving innovation success", *R&D Management*, 22(4): 359-376.
- Garcia, R., & Calantone, R. (2002), "A critical look at technological innovation typology and innovativeness terminology: A literature review", *Journal of Product Innovation Management*, 19(2):110-132.
- Granovetter, M.S. (1985), "Economic action, social structure and embeddedness", *American Journal of Sociology*, 91: 481-510.
- Grant, R. M. (1991), "The resource-based theory of competitive advantage: implications for strategy formulation", *California Management Review*, 33 (3): 114-135.
- Gumusluoglu, L. and Ilsev, A. (2009), "Transformational leadership, creativity, and organizational innovation", *Journal of Business Research*, 62 (4): 461-473.
- Gupta, R., & Dey, S. K. (2010), "Development of a productivity measurement model for tea industry", *ARNP Journal of Engineering and Applied Sciences*, 5(12): 16-25.
- Güngör, D. Ö. & Gözlü, S. (2012), "Influencing factors of innovation for Turkish companies", *International Journal of Quality and Service Sciences*, 4 (4): 374-386.
- Hadjimanolis, A. (2000), "An investigation of innovation antecedents in small firms in the context of a small developing country", *R&D Management*, 30 (3): 235-246.
- Hamel, G. (1991), "Competition for competence and interpartner learning within international strategic alliances", *Strategic Management Journal*, 12(S1): 83-103.
- Hambrick, D. C. (1981), "Environment, strategy, and power within top management teams", *Administrative Science Quarterly*, 26 (2): 253-275.
- Harper, M. (1991), "The role of enterprise in poor countries", *Entrepreneurship, Theory and Practice*, 15(4): 7-11.
- Herath, D., & Weersink, A. (2007), "Peasants and plantations in the Sri Lankan tea sector: causes of the change in their relative viability", *Australian Journal of Agricultural and Resource Economics*, 51(1): 73-89.
- Herath, H. M. U. N. & S. De Silva. (2011), "Strategies for Competitive Advantage in Value Added Tea Marketing". *Tropical Agricultural Research*, 22 (3): 251-262.
- Herron, L., & Robinson Jr, R. B. (1993), "A structural model of the effects of entrepreneurial characteristics on venture performance", *Journal of Business Venturing*, 8(3): 281-294. [http://dx.doi.org/10.1016/0883-9026\(93\)90032-Z](http://dx.doi.org/10.1016/0883-9026(93)90032-Z)
- Hitt, M. A., Ireland, R. D., Camp, S. M., & Sexton, D. L. (2001), "Strategic entrepreneurship: Entrepreneurial strategies for wealth creation", *Strategic Management Journal*, 22 (6-7): 479-491.
- Hofmann, C. & Orr, S. (2005), "Advanced manufacturing technology adoption—the German experience", *Technovation*, 25 (7): 711-724.
- Horne, M., Lloyd, P., Pay, J., & Roe, P. (1992), "Understanding the competitive process A guide to effective intervention in the small firms sector", *European Journal of Operational Research*, 56(1): 54-66.
- Huck, J., & McEwen, T. (1991), "Competencies needed for small business success: Perceptions of Jamaican entrepreneurs", *Journal of Small Business Management*, 29(4): 90-93.
- Hult, G. T. M., Hurley, R. F. & Knight, G. A. (2004), "Innovativeness: its antecedents and impact on business performance", *Industrial Marketing Management*, 33 (5): 429-438.
- Hult, G. T. M., & Ketchen, D. J. (2001), "Does market orientation matter?: A test of the relationship between positional advantage and performance", *Strategic Management Journal*, 22(9), 899-906.
- Hurley, R. F. & Hult, G. T. M. (1998), "Innovation, market orientation, and organizational learning: an integration and empirical examination", *The Journal of Marketing*, 62: 42-54.
- Ingram, P. & Roberts, P. W. (2000), "Friendships among competitors in the Sydney hotel industry", *American Journal of Sociology*, 106: 387-423.
- International Tea Committee (2013). *Annual Bulletin of Statistics*, London.
- Johannessen, J. A., Olsen, B. and Lumpkin, G. T. (2001), "Innovation as newness: what is new, how new, and new to whom?", *European Journal of Innovation Management*, 4 (1): 20-31.
- Kale, P., Singh, H. and Perlmutter, H. (2000), "Learning and protection of proprietary assets in strategic alliances: Building relational capital", *Strategic Management Journal*, 21: 217-237.
- Kimberly, J. R and Evanisko, M. J. (1981), "Organizational innovation: The influence of individual, organizational, and contextual factors on hospital adoption of technological and administrative innovations", *Academy of Management Journal*, 24 (4): 689-713.
- Knight, G. A. (1997), "Cross-cultural reliability and validity of a scale to measure firm entrepreneurial orientation", *Journal of Business Venturing*, 12(3): 213-225.
- Kodithuwakku, S. S. and Rosa, P. (2002), "The entrepreneurial process and economic success in a constrained Environment", *Journal of Business Venturing*, 17: 431-465.

- Kotabe, M., & Scott Swan, K. (1995), "The role of strategic alliances in high-technology new product development", *Strategic Management Journal*, 16(8): 621-636.
- Kotey, B., & Meredith, G. G. (1997), "Relationships among owner/manager personal values, business strategies, and enterprise performance", *Journal of Small Business Management*, 35(2): 37-64.
- Kreiser, P. M., Marino, L. D., & Weaver, K. M. (2002), "Assessing the psychometric properties of the entrepreneurial orientation scale: A multi-country analysis", *Entrepreneurship Theory and Practice*, 26(4): 71-94.
- Krueger, N. F., & Brazeal, D. V. (1994), "Entrepreneurial potential and potential entrepreneurs", *Entrepreneurship Theory and Practice*, 18: 91-91.
- Kumar, P., Mittal, S., & Hossain, M. (2008), "Agricultural growth accounting and total factor productivity in South Asia: A review and policy implications", *Agricultural Economics Research Review*, 21(2): 145-172.
- Kuratko, D. F., Hornsby, J. S., & Naffziger, D. W. (1997), "An examination of owner's goals in sustaining entrepreneurship", *Journal of Small Business Management*, 35(1): 24-33.
- Lechner, C. & Dowling, M. (2003), "Firm networks: External relationships as sources for the growth and competitiveness of entrepreneurial firms", *Entrepreneurship & Regional Development*, 15 (1): 1-26
- Lee, C., Lee, K. & Pennings, J. M. (2001), "Internal capabilities, external networks, and firm performance: A study on technology-based ventures", *Strategic Management Journal*, 22: 615-640.
- Leenders, R. T. A., & Gabbay, S. M. (Eds.). (1999), *Corporate social capital and liability*, Springer Science & Business Media.
- Lerner, M., & Almor, T. (2002), 'Relationships among strategic capabilities and the performance of women-owned small ventures', *Journal of Small Business Management*, 40(2): 109-125.
- Li, X. (2009). *Entrepreneurial competencies as an entrepreneurial distinctive: an examination of the competency approach in defining entrepreneurs*. Available from Dissertations and Theses Collection (Open Access), Paper 14. http://ink.library.smu.edu.sg/etd_coll/14
- Liao, J. & Welsch, H. (2005), "Roles of social capital in venture creation: Key dimensions and research implications", *Journal of Small Business Management*, 43 (4): 345-362.
- Lumpkin, G. T. & Dess, G. G. (1996), "Clarifying the entrepreneurial orientation construct and linking it to performance", *Academy of Management Review*, 21 (1): 135-172.
- Lumpkin, G. T. & Dess, G. G. (2001), "Linking two dimensions of entrepreneurial orientation to firm performance: The moderating role of environment and industry life cycle", *Journal of Business Venturing*, 16 (5): 429-451.
- Lyon, D. W., Lumpkin, G. T. & Dess, G. G. (2000), "Enhancing entrepreneurial orientation research: Operationalizing and measuring a key strategic decision making process", *Journal of Management*, 26 (5): 1055-1085.
- MacPherson, A. (1997), "The contribution of external service inputs to the product development efforts of small manufacturing firms", *R&D Management*, 27 (2): 127-144.
- Mair, J. & Marti, I. (2006), "Social entrepreneurship research: A source of explanation, prediction, and delight", *Journal of World Business*, 41 (1): 36-44.
- Maligaspe, R. (1998), "The tea industry in Sri Lanka: from selling to marketing", *Journal of National Institute of Plantation Management Sri Lanka*, 14 (1 & 2): 8-16.
- Man, T. W. Y. (2001). *Entrepreneurial competencies and the performance of small and medium enterprises in the Hong Kong services sector*. (PhD dissertation, Hong Kong Polytechnic University). Retrieved from <http://repository.lib.polyu.edu.hk/jspui/handle/10397/3532>
- Man, T. W. Y., Lau, T., & Chan, K. F. (2002). The competitiveness of small and medium enterprises: a conceptualization with focus on entrepreneurial competencies. *Journal of Business Venturing*, 17(2): 123-142.
- Man, T. W. Y., Lau, T., & Snape, E. (2008), "Entrepreneurial competencies and the performance of small and medium enterprises: An investigation through a framework of competitiveness", *Journal of Small Business & Entrepreneurship*, 21(3): 257-276.
- March, J. G. (1991), "Exploration and exploitation in organizational learning", *Organization Science*, 2 (1): 71-87.
- Marchernay, M. (2000), "Innovativeness in smaller business firms: the case of French entrepreneurs", *Investigaciones europeas de dirección y economía de la empresa*, 6(2): 31-38.
- Maxwell, J. R., & Westerfield, D. L. (2002), "Technological entrepreneurship characteristics related to the adoption of innovative technology", *SAM Advanced Management Journal*, 67(1): 9-13.
- McClelland, D. C. (1965), "N achievement and entrepreneurship: A longitudinal study", *Journal of Personality and Social Psychology*, 1(4): 389-392.

- McGrath, R. G. (2001), "Exploratory learning, innovative capacity, and managerial oversight", *Academy of Management Journal*, 44(1): 118-131.
- Miles, M. B., & Huberman, A.M., (1984), *Qualitative Data Analysis: A Sourcebook of New Methods*, Beverly Hills: Sage Publications.
- Miller, D. (1983), "The correlates of entrepreneurship in three types of firms", *Management Science*, 29(7): 770-791.
- Miller, D., De Vries, M. F. K., & Toulouse, J. M. (1982). Top executive locus of control and its relationship to strategy-making, structure, and environment. *Academy of Management journal*, 25(2): 237-253. <http://dx.doi.org/10.2307/255988>
- Miller, D. & Friesen, P. H. (1982), "Innovation in conservative and entrepreneurial firms: two models of strategic momentum", *Strategic Management Journal*, 3 (1): 1-25.
- Miller, D. & Friesen, P. H. (1983), "Strategy-making and environment: The third link", *Strategic Management Journal*, 4 (3): 221-235.
- Miller, D., & Toulouse, J. M. (1986a), "Chief executive personality and corporate strategy and structure in small firms", *Management Science*, 32(11): 1389-1409.
- Miller, D., & Toulouse, J. M. (1986b), "Strategy, structure, CEO personality and performance in small firms", *American Journal of Small Business*, 10(3): 47-62.
- Mintzberg, H. (1973), "Strategy-Making in Three Modes", *California Management Review*, 16(2): 44-53
- Mohamed, M. T. Z. & Zoysa, A. K. N. (2006), "Current status and future research focus of tea in Sri Lanka", *The Journal of Agricultural Sciences*, 2(2): 32-42.
- Morris, M. H., & Paul, G. W. (1987), "The relationship between entrepreneurship and marketing in established firms", *Journal of Business Venturing*, 2(3):247-259.
- Morris, M., Schindehutte, M., & Allen, J. (2005), "The entrepreneur's business model: toward a unified perspective", *Journal of Business Research*, 58(6): 726-735.
- Nahapiet, J. & Ghoshal, S. (1998), "Social capital, intellectual capital, and the organizational advantage", *Academy of Management Review*, 23 (2): 242-266.
- Naldi, L., Nordqvist, M., Sjöberg, K. & Wiklund, J. (2007), "Entrepreneurial orientation, risk taking, and performance in family firms", *Family Business Review*, 20 (1): 33-47.
- Naman, J. L. & Slevin, D. P. (1993), "Entrepreneurship and the concept of fit: a model and empirical tests", *Strategic Management Journal*, 14 (2): 137-153.
- Nieto, M. J. & Santamaría, L. (2007), "The importance of diverse collaborative networks for the novelty of product innovation", *Technovation*, 27 (6): 367-377.
- Nunnally J. (1978), *Psychometric*, (2nd Ed). McGraw Hill, New York.
- Nystrom, P. C., Ramamurthy, K. & Wilson, A. L. (2002), "Organizational context, climate and innovativeness: adoption of imaging technology", *Journal of Engineering and Technology Management*, 19 (3): 221-247.
- Ongonga, J. & Ochieng, A. (2013), "Innovation in the tea industry: the case of Kericho tea Kenya", *Global journal of Management and Business Research*, 13 (1): 52-67.
- Parkhe, A. (1993). "Messy" research, methodological predispositions, and theory development in international joint ventures. *Academy of Management Review*, 18(2): 227-268.
- Patton, E., & Appelbaum, S. H. (2003), "The case for case studies in management research", *Management Research News*, 26(5): 60-71.
- Pearce, I. I., John, A., Fritz, D. A., & Davis, P. S. (2010), "Entrepreneurial orientation and the performance of religious congregations as predicted by rational choice theory", *Entrepreneurship Theory and Practice*, 34(1): 219-248.
- Peng, M.Y. & Luo, Y. (2000), "Managerial ties and firm performance in a transition economy: The nature of a micro-macro link", *Academy of Management Journal*, 43: 486-501.
- Pérez-Luño, A., Wiklund, J & Cabrera, R. V. (2011), "The dual nature of innovative activity: How entrepreneurial orientation influences innovation generation and adoption", *Journal of Business Venturing*, 26 (5): 555-571.
- Porter, M. E. (1990), *The Competitive Advantage of Nations*, Free Press, New York.
- Porter, M. E. (1991). Towards a dynamic theory of strategy. *Strategic management journal*, 12(S2): 95-117. <http://dx.doi.org/10.1002/smj.4250121008>
- RAM Ratings (Lanka)Ltd, (2010), *Sector Report: Tea industry*, Colombo, Sri Lanka. Available at: http://lra.com.lk/other_pdf/PlantationSector10.pdf (accessed December, 2012).
- Roberts, P. W. (1999), "Product innovation, product-market competition and persistent profitability in the US pharmaceutical industry", *Strategic Management Journal*, 20(7):655-670.
- Rogers, E. M. (1995), *Diffusion of Innovation*, Free Press, New York.

- Rosner, M. M. (1968), "Economic determinants of organizational innovation", *Administrative Science Quarterly*, 12: 614-625.
- Rauch, A., Wiklund, J., Lumpkin, G. T., & Frese, M. (2009). "Entrepreneurial orientation and business performance: An assessment of past research and suggestions for the future", *Entrepreneurship Theory and Practice*, 33(3): 761-787.
- Salavou, H., & Lioukas, S. (2003). "Radical product innovations in SMEs: the dominance of entrepreneurial orientation", *Creativity and Innovation Management*, 12(2): 94-108.
- Santamaría, L., Nieto, M. J. & Barge-Gil, A. (2009), "Beyond formal R&D: Taking advantage of other sources of innovation in low-and medium-technology industries", *Research Policy*, 38 (3): 507-517.
- Santoro, M. D. & Gopalakrishnan, S. (2000), "The institutionalization of knowledge transfer activities within industry-university collaborative ventures", *Journal of Engineering and Technology Management*, 17 (3): 299-319.
- Schmidt, W. W., & Posner, B. Z. (1992). "The values of American managers then and now", *Management Review*, 81(2): 37-40.
- Schmitt-Rodermund, E. (2004), "Pathways to successful entrepreneurship: Parenting, personality, early entrepreneurial competence, and interests", *Journal of Vocational Behavior*, 65(3): 498-518. <http://dx.doi.org/10.1016/j.jvb.2003.10.007>
- Schmitz, H. (1995), "Collective efficiency: Growth path for small-scale industry", *The Journal of Development Studies*, 31 (4): 529-566.
- Schumpeter, J. A. (1947), "The creative response in economic history", *The Journal of Economic History*, 7 (2): 149-159. Available at <http://www.jstor.org/stable/2113338> (accessed September 2014)
- Shane, S. & Venkataraman, S. (2000), "The promise of entrepreneurship as a field of research", *Academy of Management Review*, 25 (1): 217-226.
- Shepherd, C. & Ahmed, P. K. (2000), "From product innovation to solutions innovation: a new paradigm for competitive advantage", *European Journal of Innovation Management*, 3 (2): 100-106.
- Shirokova, G. V., & Sokolova, L. S. (2013), "Exploring the antecedents of entrepreneurial orientation in Russian SMEs: The role of institutional environment. Available at: https://dspace.spbu.ru/xmlui/bitstream/handle/123456789/819/1/%28E%29_2013.pdf?sequence=1&isAllowed=y (accessed September, 2013)
- Simsek, Z., Lubatkin, M. H. & Floyd, S. W. (2003), "Interfirm networks and entrepreneurial behavior: A structural embeddedness perspective", *Journal of Management*, 29: 427-442.
- Sirikrai, S. B., & Tang, J. C. (2006). Industrial competitiveness analysis: Using the analytic hierarchy process. *The Journal of High Technology Management Research*, 17(1): 71-83.
- Slater, S. F. & Narver, J. C. (1995), "Market orientation and the learning organization", *The Journal of Marketing*, 59 (3): 63-74.
- Slevin, D. P., & Covin, J. G. (1995), "New ventures and total competitiveness: A conceptual model, empirical results, and case study examples", *Frontiers of Entrepreneurship Research*, 1995: 574-588.
- Sri Lanka Tea Board, (2010 to 2012), *Annual Report of Sri Lanka Tea Board*, Colombo, Sri Lanka.
- Sri Lanka Tea Board. (2012). *Sri Lanka Tea Board Statistical Bulletin*, Colombo, Sri Lanka.
- Stam, W. & Elfring, T. (2008), "Entrepreneurial Orientation And New Venture Performance: The Moderating Role Of intra- And Extra industry Social Capital", *Academy of Management Journal*, 51 (1): 97-111.
- Stevenson, H. H. & Jarillo, J. C. (1990), "A paradigm of entrepreneurship: entrepreneurial management", *Strategic Management Journal*, 11 (5): 17-27.
- Stuart, R. W., & Abetti, P. A. (1990). Impact of entrepreneurial and management experience on early performance. *Journal of Business Venturing*, 5(3): 151-162.
- Subramanian, A., & Nilakanta, S. (1996). Organizational innovativeness: exploring the relationship between organizational determinants of innovation, types of innovations, and measures of organizational performance. *Omega*, 24(6): 631-647.
- Sundbo, J. (2003), "Innovation and strategic reflexivity: an evolutionary approach applied to service", in Shavinina, L. V. (Ed.), *The International Handbook on Innovation*, 1st ed., Elsevier Science Ltd., Oxford, pp. 97-114.
- Suzuki A.K.S., Kim, S. & Bae, Z. (2002), "Entrepreneurship in Japan and Silicon Valley: A comparative study", *Technovation*, 22: 595-606.
- Tajeddini, K. (2010), "Effect of customer orientation and entrepreneurial orientation on innovativeness: Evidence from the hotel industry in Switzerland", *Tourism Management*, 31 (2): 221-231.
- Tea Small Holding Development Authority. (2012). *Annual Report*. Colombo, Sri Lanka.
- Timmons, J. A. (1978), "Characteristics and role demands of entrepreneurship", *American Journal of Small Business*, 3(1): 5-17.
- Tsai, W. & Ghoshal, S. (1998), "Social capital and value creation: The role of intrafirm networks", *Academy of Management Journal*, 41 (4): 464-476.

- Uzzi, B. (1997), "Social structure and competition in interfirm networks: The paradox of embeddedness" *Administrative Science Quarterly*, 35-67.
- Van de Ven, A. H. and Poole, M. S. (1995), "Explaining development and change in organizations", *Academy of Management Review*, 20 (3): 510-540.
- Von Hippel, E. (1988), *The Sources of Innovation*, Oxford, U.K.: Univ. Press.
- Wadasinghe, G. (1995), "Alternative land uses for plantation", *Economic Review People's Bank of Sri Lanka*, 21 (6): 34-36.
- Wal, S. (2008). *Sustainability issues in the tea sector: a comparatively analysis of six leading producer countries*, SOMO, Amsterdam.
- Watanabe, S. (1970), "Entrepreneurship in small enterprises in Japanese manufacturing", *International Labour Review*, 102 (6): 105-128.
- Westerberg, M., Singh, J., & Häckner, E. (1997), "Does the CEO matter? An empirical study of small Swedish firms operating in turbulent environments", *Scandinavian Journal of Management*, 13(3): 251-270
- Wiklund, J., & Shepherd, D. (2005), "Entrepreneurial orientation and small business performance: a configurational approach", *Journal of Business Venturing*, 20(1): 71-91.
- World Economic Forum, (2013), *The Global Competitiveness Report 2013 – 2014*, http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2013-14.pdf (access January, 2015)
- Yam, R., Lo, W., Tang, E. P. and Lau, A. K. (2011), "Analysis of sources of innovation, technological innovation capabilities, and performance: An empirical study of Hong Kong manufacturing industries", *Research Policy*, 40 (3): 391-402.
- Yamaguchi, M., & Sanker, S. (2004), *Empirical Analysis of Sri Lanka's Agriculture in Relation to Policy Reforms with General Equilibrium Growth Accounting Approach (1970-1996)*. Graduate School of Economics, Kobe University.
- Yan, A., & Gray, B. (1994), "Bargaining power, management control, and performance in United States–China joint ventures: a comparative case study", *Academy of Management Journal*, 37(6): 1478-1517.
- Yin, R. K., 2003, *Case Study research: Design and Methods*, Third ed. Beverly Hills: Sage Publications.
- Yuliando, H., & Nakayasu, A. (2006), "Supply management options for tea producing countries: A case study on Indonesian tea product and its competitors", *Journal of Applied Sciences*, 6(7): 3170-3173.
- Zahra, S. A. (1993), "Environment, corporate entrepreneurship, and financial performance: A taxonomic approach", *Journal of Business Venturing*, 8(4): 319-340.
- Zahra, S. A. and Covin, J. G. (1994), "The financial implications of fit between competitive strategy and innovation types and sources", *The Journal of High Technology Management Research*, 5 (2): 183-211.
- Zahra, S. A. and Covin, J. G. (1995), "Contextual influences on the corporate entrepreneurship-performance relationship: A longitudinal analysis", *Journal of Business Venturing*, 10 (1): 43-58.
- Zhou, K. Z., Yim, C. K., & Tse, D. K. (2005), "The effects of strategic orientations on technology-and market-based breakthrough innovations", *Journal of Marketing*, 69(2), 42-60.
- Zimmerman, M. A. and Zeitz, G.J. (2002), "Beyond survival: Achieving new venture growth by building legitimacy", *Academy of Management Review*, 27 (3): 414-431.

Questionnaire

Survey on Entrepreneurial Orientation of Tea Manufacturing Firms in Sri Lanka

Respondent: Owner manager Manager

Name and Address of the firm:

District:

A. Background Information of owner/Manager

1. Present Age:
2. Age at became owner or manager
3. Education level:

Primary school (< O/L)	
Ordinary level pass	
Advance level pass	
Bachelor's Degree	
Postgraduate Degree	

4. Formal management training and /or relevant technical training before became to current position

Management Technical Both of them Non of them

5. Formal management training and /or relevant technical training after became to current position

Management Technical Both of them Non of them

6. Did you have previous work experience related to this? Yes No

7. Did owner have business start-up experience prior to this? Yes No

B. Manufacturing firm's information

1. Category of factory: Both own leaf and bought leaf Bought leaf only

2. Tea Manufacturing methodology: Orthodox CTC Green Tea

3. Monthly Sales : quantity Kg

4. Main products :

Black tea as bulk, Tea packets, Tea bags, Green tea, flavored tea

Other:

State whether produces special tea grades?

. Marketing channels:

Marketing channels	Percentage
Local market	
a. Directly end users	
b. Through resellers	
d. Other	
Export market	
a. Direct export	
b. Through auction	

6. Ownership structure:

Sole proprietorship Partnership Private limited company

7. No of employees

8. Quality standards:

Quality standard	Implemented year
HACCP	
ISO 22000	
ISO 9001	
CQC and SLS	
Other	
On process	

9. Are you /owner actively involved in this business: Yes / No

10. On average how many hours per day:

13. Apart from this business, owner has own other business? Yes / No

Is any of them relevant to this business? Yes / No

14. Supply of green leaf:

Green leaf source	Percentage
Smallholder farmers	
Leaf collector	

15. State the level of support that your factory renders to green leaf supplier

	Very little extent	Little extent	Some Extent	High extent	Very high extent
Financial assistance					
Fertilizer					
Extension services for green leaf quality improvement					
Green leaf transport facility					
Welfare facilities					

16. What is the current stage of business development of your industry?

- a) Introduction stage; (industry-wide demand is beginning to grow)
- b) Growth stage (Total industry wide demand for product is growing at increasing rate annually)
- c) Maturity stage (product are familiar to vast majority potential users and industry-wide demand is relatively stable)
- d) Decline stage (Total industry wide demand for product is decreasing at a more or steady rate)

C. External Relationships

1. Strength of relationship

1. 1 Intensity of the relationship - select the extent of concentration on each institution during the past three years

	No extent	Little extent	Some Extent	High extent	Very high extent
Supply chain partners					
Tea broker companies					
Suppliers					
Other Tea Factories (OTF)					
Government facilitating Institution					
TSHDA					
TB					
Education and Research Institutions					
NIPM					
TRI					
University					

1.2 Frequency of relationship – frequency of contact or getting service from each institution during the past three years

	No extent	Little extent	Some Extent	High extent	Very high extent
Supply chain partners					
Tea broker companies					
Suppliers					
Other Tea Factories (OTF					
Government facilitating Institution					
TSHDA					
TB					
Education and Research Institutions					
NIPM					
TRI					
University					

1.3 Reciprocal service – To what extent your firm engage in mutual or interactive service with each institutions during the past three years

	No extent	Little extent	Some Extent	High extent	Very high extent
Supply chain partners					
Tea broker companies					
Suppliers					
Other Tea Factories (OTF					
Government facilitating Institution					
TSHDA					
TB					
Education and Research Institutions					
NIPM					
TRI					
University					

2. Entrepreneurial Infrastructure - state the extent that your firm received benefits from each institution during the past three years

2.1 Tea broker companies

	No extent	Little extent	Some Extent	High extent	Very high extent
Financial support					
Information sharing					
Education and training					
Innovation development support					
Consultation					
Research and development					
Networking facilities					

2.2 Other Tea Factories

	No extent	Little extent	Some Extent	High extent	Very high extent
Financial support					
Information sharing					
Education and training					
Innovation development support					
Consultation					
Research and development					
Networking facilities					

2.3 Government facilitating Institutions (TSHDA and TB)

	No extent	Little extent	Some Extent	High extent	Very high extent
Financial support					
Information sharing					
Education and training					
Innovation development support					
Consultation					
Research and development					
Networking facilities					

2.4 Educational and Research Institutions (NIPM, TRI and University)

	No extent	Little extent	Some Extent	High extent	Very high extent
Financial support					
Information sharing					
Education and training					
Innovation development support					
Consultation					
Research and development					
Networking facilities					

D. Entrepreneurial Competencies - Owner / Manager Competencies

The following statements indicate how competent you are in the activities described. Please indicate your agreement on each statement;

1 = Strongly disagree

3= Neither agree or disagree

5 = Strongly agree

	1	2	3	4	5
Opportunity Competencies					
Identify customers wants					
Perceive unmet consumer needs					
Actively look for products that provide real benefit to customer					
Seize high-quality business opportunities					
Relationship Competencies					
Develop long-term trusting relationship with others					
Interact with others					
Maintain personal network of work contacts					
Communicate with others effectively					
Conceptual Competencies					
Apply ideas, issues and observations to alternative contexts					
Integrate ideas, and observations into more general contexts					
Take reasonable job related risks					
Monitor progress toward objectives in risky actions					
Look at old problems in new ways					
Treat new problems as opportunities					
Organizing Competencies					
Plan the operations of business					
Plan the organization of different resources					
Keep organization running smoothly					
Coordinate tasks					
Organize people					
Motivate people					
Delegate effectively					
Strategic Competencies					
Determine long-term issues, problems or opportunities					
Aware how industry changes might impact the firm					
Prioritize work in alignment with business goals					
Redesign the organization to meet long-term objectives					
Align current actions with strategic goals					
Link day-to-day tasks in the context of long-term direction					

Monitor progress towards the strategic goals					
Determine strategic actions by weighing cost and benefits					
Commitment Competencies					
Dedicate to make the venture work whenever possible					
Refuse to let the venture fail whenever appropriate					
Possess an extremely strong internal drive					
Commit to long-term business goals					

E. Entrepreneurial Orientation

Respondents described the firms' entrepreneurial orientation during the past 5 years using the descriptions below. 1 = Strongly disagree 5 = Strongly disagree

	1	2	3	4	5
Innovativeness					
In general, my firm favors a strong emphasis on research and development, technological leadership, and innovations					
In the past 5 years, my firm has introduced many new product lines					
In the past 5 years, changes in my firm's product lines have been quite dramatic					
Proactiveness					
In dealing with competition, my firm is often the first to initiate actions to which competitors then respond					
Very often, my firm is the to introduce new products, process, technologies, and administrative methods					
In general, my firm has a strong tendency to be ahead of others in introducing novel ideas or products					
Risk taking					
My firm has a strong preference for high-risk projects					
I believe that, owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives					
When confronted with a decision-making situation involving uncertainty, my firm typically adopts a bold, aggressive posture to maximize the probability of exploiting potential opportunities					

F. Innovation

1. Motivation for innovations

Select the reasons / motivation for innovation and state the importance of each factor on innovation

Reasons	Not important	Little important	Neutral	Important	Highly important
Commercial development					
Competitor actions					
Financial rewards					
New product ideas and development					
Personal satisfaction					

2. Factors promoting innovation adoption

State how following factors influencing for innovations of your firm

Factors	Not important	Little important	Neutral	Important	Highly important
Internal research and development					
Research institutions					
Buyers information					

3. Main areas of Innovations

Number and type of innovation in different areas

Types of innovation	Number	Modification / change or new innovations
Product		
Production process		
Marketing		
Packaging		

4. Level of innovation in different areas

Respondents described the firm's level of innovation during the past 5 years with regard to each of the detailed innovations listed below.

1 = Very low

5 = Very High

	1	2	3	4	5
Product					
The volumes of modifications to existing products and products developed					
The speed of product modification and development.					
The speed to market of modified or new products					
Production process					
The degree to which my firm develops new technology to improve operating processes					
The degree to which my firm adopts new machines or methods to improve operating processes.					
The degree to which my firm adopts new management practices to improve operating performance.					
Marketing					
Modifications of existing marketing activities and new marketing activities we have conducted during the past 5 years					

G. Performance

Respondents described the firm's level of performance during the past 5 years with regard to each of the detailed performance listed below.

Sales growth	1. less than 1%	2. 1 – 5 %	3. 5-8 %	4. 8 -12%	5. More than 12%
Pre-tax Profit	1.Negative profit	2. Holding its own	3. Increasing slightly	4. Increasing moderately	5. Increasing significantly
Market share growth	1. less than 1%	2. 1-3%	3. 3-6%	4. 6-10%	5. More than 10%

Factor analysis

Principle component analysis was performed in variable wise to select the measurement items of each variable.

1. Entrepreneurial Orientation

Innovativeness	
Items	Component 1
Innovativeness1	.808
Innovativeness2	.760
Innovativeness3	.833
Eigenvalue	1.926
% of Variance	64.194
Cumulative %	64.194

Proactiveness	
Items	Component 1
Proactive4	.821
Proactive5	.900
Proactive6	.808
Eigenvalue	2.136
% of Variance	71.202
Cumulative %	71.202

Risk taking	
Items	Component 1
risk tak7	.549
risk tak8	.918
risk tak9	.893
Eigenvalue	1.941
% of Variance	64.708
Cumulative %	64.708

EO	
Items	Component 1
Innovativeness	.785
Proactiveness	.880
Risk taking	.796
Eigenvalue	2.025
% of Variance	67.506
Cumulative %	67.506

Extraction Method: Principal Component Analysis. a. 1 components extracted.

2. External Relationships

Relationship with Broker companies	
Items	Component 1
Intensity brokers	.817
Frequency brokers	.685
Recip. Service brokers	.779
Eigenvalue	1.744
% of Variance	58.141
Cumulative %	58.141

Relationship with Suppliers	
Items	Component 1
Intensity Supplier	.676
Frequency Suppliers	.682
Recip. Service suppliers	.844
Eigenvalue	1.635
% of Variance	54.488
Cumulative %	54.488

Relationship with Other Tea Factories	
Items	Component 1
Intensity OTF	.863
Frequency OTF	.814
Recip. Service OTF	.799
Eigenvalue	2.045
% of Variance	68.172
Cumulative %	68.172

Relationship with TSHDA	
Items	Component 1
Intensity TSHDA	.930
Frequency TSHDA	.898
Recip. Service TSHDA	.819
Eigenvalue	2.343
% of Variance	78.090
Cumulative %	78.090

Relationship with TB	
Items	Component 1
Intensity TB	.853
Frequency TB	.666
Recip. Service TB	.867
Eigenvalue	1.924
% of Variance	64.131
Cumulative %	64.131

Relationship with NIPM	
Items	Component 1
Intensity NIPM	.893
Frequency NIPM	.746
Recip. Service NIPM	.705
Eigenvalue	1.851
% of Variance	61.691
Cumulative %	61.691

Relationship with TRI	
Items	Component 1
Intensity TRI	.889
Frequency TRI	.815
Recip. Service TRI	.840
Eigenvalue	2.159
% of Variance	71.982
Cumulative %	71.982

Relationship with University	
Items	Component 1
Intensity University	.949
Frequency University	.920
Recip. serv. University	.758
Eigenvalue	2.321
% of Variance	77.373
Cumulative %	77.373

2.1 Categorized Relationships

Supply chain partners	
Items	Component 1
Relation Brokers	.922
Relation Suppliers	.922
Eigenvalue	1.700
% of Variance	84.978
Cumulative %	84.978

Government facilitating Institutions	
Items	Component 1
Relation TSHDA	.855
Relation TB	.855
Eigenvalue	1.463
% of Variance	73.142
Cumulative %	73.142

Education and Research Institutions	
Items	Component 1
Relation NIPM	.858
Relation TRI	.841
Relation University	.695
Eigenvalue	1.927
% of Variance	64.244
Cumulative %	64.244

Extraction Method: Principal Component Analysis. a. 1 components extracted

3. Entrepreneurial Competencies

Opportunity	
Items	Component 1
OP1	.800
OP2	.822
OP3	.723
OP4	.743
Eigenvalue	2.391
% of Variance	59.766
Cumulative %	59.766

Relationship	
Items	Component 1
R5	.786
R6	.517
R7	.671
R8	.677
Eigenvalue	1.794
% of Variance	44.838
Cumulative %	44.838

Conceptual		
Items	Component 1	Component 2
Cp9	.681	.274
Cp10	.792	-.045
Cp11	.532	.538
Cp12	.594	.513
Cp13	.742	-.458
Cp14	.711	-.565
Eigenvalue	2.782	1.160
% of Variance	46.368	19.337
Cumulative %	46.368	65.705

a. 2 components extracted

Organizing		
Items	Component 1	Component 2
Og15	.704	-.249
Og16	.738	-.413
Og17	.695	-.134
Og18	.506	.548
Og19	.652	-.267
Og20	.748	.151
Og21	.589	.606
Eigenvalue	3.110	1.011
% of Variance	44.427	14.444
Cumulative %	44.427	58.871

Strategic		
Items	Component 1	Component 2
St22	.756	.102
St23	.638	.283
St24	.683	-.224
St25	.613	-.403
St26	.772	.063
St27	.572	-.489
St28	.672	.104
St29	.436	.697
Eigenvalue	3.387	1.042
% of Variance	42.333	13.028
Cumulative %	42.333	55.361

a. 2 components extracted

Commitment	
Items	Component 1
Cm30	.826
Cm31	.788
Cm32	.791
Cm33	.743
Eigenvalue	2.480
% of Variance	62.011
Cumulative %	62.011

4. Level of Innovation

Product innovation	
Items	Component 1
P1	.924
P2	.947
P3	.896
Eigenvalue	2.553
% of Variance	85.112
Cumulative %	85.112

Process innovation	
Items	Component 1
Process1	.937
Process2	.934
Process3	.913
Eigenvalue	2.584
% of Variance	86.138
Cumulative %	86.138

4.2 Factors promoting innovation adoption

Items	Component 1
RD1	.884
RD2	.884
Eigenvalue	1.562
% of Variance	78.108
Cumulative %	78.108

Extraction Method: Principal Component Analysis. a. 1 components extracted

5. Performance

Items	Component 1
Sales grow	.926
Profit	.918
Market share	.900
Eigenvalue	2.511
% of Variance	83.687
Cumulative %	83.687

Evidence of Influence of EO on Economic performance of tea manufacturing firms

1. EO and Innovation

Table 1 Correlation of EO and number of innovations adopted by tea manufacturing firms

	Number of innovations		
	Products	Process	Marketing
Innovativeness	.527**	.474**	.399**
Proactiveness	.333**	.290**	.367**
Risk Taking	.226*	.055	.232*
EO	.445**	.334**	.405**

**, Correlation is significant at the 0.01 level and * significant at the 0.05 level

2. Innovation and Performance

Measurement of Performance

To measure the performance of tea manufacturing firms, scale measurement was used as alternative than using actual figures due to reluctance of the firm's owner/manager to make known these sensitive figures. A potential drawback is that objective indicators are often hard to obtain (Chandler and Hanks, 1993). This study employed self-reported measures of sales growth, profit, and market share as previous studies (e.g. Stam and Elering).

Table 2 Correlation of innovation and performance

	Sales growth	Profit	Market share	Performance
Product innovation	.720**	.645**	.730**	.764**
Process innovation	.747**	.644**	.711**	.768**
Marketing innovation	.636**	.551**	.699**	.686**
Innovation	.773**	.682**	.783**	.816**

**, Correlation is significant at the 0.01 level

Table 3 Regression analysis of Innovation adoption and Performance

	Dependents			
	Sales growth	Profit	Market share	Performance
Control var.				
Size (Monthly sales)	-.093 (-1.318)	-.078 (-.949)	-.003 (-.042)	-.065 (-.999)
Availability of GL	.060 (.838)	-.143* (-1.744)	.034 (.482)	-.015 (-.226)
Main effect				
Product innovation	.155 (1.164)	.315** (2.045)	.227* (1.713)	.250** (2.027)
Process innovation	.489*** (4.073)	.328** (2.366)	.290** (2.431)	.409*** (3.685)
Marketing innovation	.224** (2.497)	.207** (2.005)	.337*** (3.796)	.278*** (3.349)
F Statistics	32.708***	19.357***	33.550***	41.657***
R ²	.614	.484	.620	.669
Adjusted R ²	.595	.459	.601	.653
Change in R ²	.439	.450	.403	.500

Significant level *p < 0.1, **p < 0.05, ***p < 0.01, n = 109

Tea Production in Sri Lanka

Surrounding view of Tea factories in low grown area



Source: taken by author

Ratnapura Area



Deniyaya Area

Supply of green leaf



Recommended plucking;
Two leaves and bud

Source: <https://beyondtheleaf.files.wordpress.com/2014/03/fresh-tea-leaves.jpg>

Own leaf- From tea plantation belong to tea

Bought leaf- From tea small holder farmers



Lumbini Garden

Source: taken by author



Source: <http://www.vithanakandeteas.com/gallery>

Transporting green leaf to tea factory



Measures taken to reduce postharvest losses of green leaf during transportation



Using plastic crates for transporting green leaf



Source: taken by author

Using special track system in Lorries

Tea Factory



Source: taken by author

Weighing of green leaf at tea factory



Weighing Lorries with and without green leaves

Quality inspection of green leaf to ensure the quality



Source: <http://www.vithanakandeteas.com/gallery>

Black Tea Manufacturing Process

Orthodox production Process

Withering



Rolling



Fermentation



Drying



Source: <http://www.vithanakandeteas.com/gallery>

CTC production Process

CTC (Cut Tear and Curl) Production process
Producing finely ground tea - best suited for tea bags
Managed by a fully automated system



Source: <http://www.dellawatea.com/images/CTC>

Grading and Shifting



Source: <http://lumbinitea.com/aboutus.php>

Packing



Source: <http://www.vithanakandeteas.com/gallery>



Source: <http://lumbinitea.com/aboutus.php>

Special Tea Grades – White tea



Golden



Silver

Source: <https://www.australianteamasters.com.au/types-of-tea>

Unique Tea Grades



Jayachakra^a -Tea is an Innovation of Lumbini Tea Factory. Totally handmade tea

Source: ^a <http://lumbinitea.com/aboutus.php>



Sun Pekoe^b – Produce by Nanadana tea factory. Dry in sunlight

^b <http://www.nandanatea.com.lk/Product.html>

Main Tea Grades produce in Orthodox method

Flowery Range

FBOP (Flowery Broken Orange Pekoe)



A

B

FBOPF1 (Flowery Broken Orange Pekoe Fannings 1)



A

B

FBOPF (Flowery Broken Orange Pekoe Fannings)



A

FBOP I (Flowery Broken Orange Pekoe 1)



A

B

FBOPF Extra Special

(Flowery Broken Orange Pekoe Fannings Ex Sp)



A

B

FBOPF Special

(Flowery Broken Orange Pekoe Fannings Sp)



A

B

Broken Range

BOP (Broken Orange Pekoe)



A

Leafy Range

BOP1 (Broken Orange Pekoe 1)



A

B

OP1 (Orange Pekoe 1)



A

B

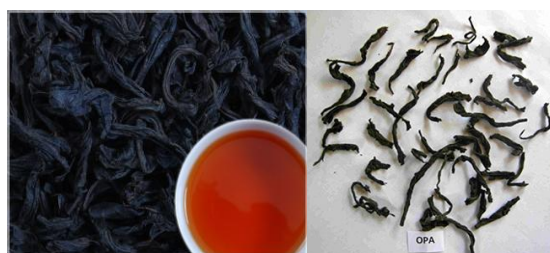
OP (Orange Pekoe)



A

B

OPA (Orange Pekoe A)



A

B

Pekoe



A

B

Pekoe 1



A

Source A: <http://www.worldteanews.com/wp-content/uploads/Ceylon>

Source B: <http://www.nandanatea.com.lk/Product.html>

Main Tea Grades produce in CTC method

BP 1 (Broken Pekoe 1)



PF 1 (Pekoe Fannings 1)



Source: <http://ceylonteauunit.ru/en/dop2>