

## **Influence of Supply Chain Actors in Tea Export Planning: A Sri Lankan Case Study**

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### **Abstract**

The purpose of this study is to identify the supply chain actors involved in export planning of a Sri Lankan tea export company while understanding how these actors influence the tea export planning process. Actor-Network Theory (ANT) was incorporated as a theoretical lens to make sense of how both human and non-human actors have influenced the tea export planning process. The study adopted the single-site case study approach under the qualitative methodology. Data has been mainly collected through interviews carried on with the top, middle and lower level managerial employees. In light of ANT, the findings of this study illustrate that human actors: tea department personnel, shipping department personnel, new product development (NPD) team and accounts manager influence the tea export planning process through knowledge, skills and experience. Further, the study reveals that non-human actors: auction system, multiple supplier base, supplier evaluation process, ERP system, shipment scheduling process, government entities and transactional process influence the tea export planning through providing information, facilitating communication and ensuring transparency. The study suggests that the managers and practitioners attached to export oriented companies should be conscious about the influencing factors of each human and non-human actor of the supply chain in the process of planning exports and in solving strategic and operational issues when operating within and beyond Asia. Furthermore, this study aims to fill the lacuna in supply chain and export literature through exploring the supply chain actors (human and non-human) and their influence on the export planning process.

**Keywords:** Tea Export Planning, Supply Chain, Actor Network Theory (ANT), Supply Chain Actors, Influencing Factors

## **Introduction**

### *Background of the study*

The tea industry plays an important role in the Sri Lankan economy by contributing around 4% to the national gross domestic production (Central Bank, 2017). It serves as one of the main sources of income to the labour force and currently employs approximately 1 million employees directly and indirectly. This provides a solution to the employment issue in the country while generating approximately \$700 million annually which provides a significant source of foreign income (International Trade Center, 2013). Anyhow, Sri Lanka's share of world tea production and export is gradually decreasing. Accordingly, statistics proved that international market shares are getting decreased especially in Chile, Japan, Russia and U. A. E (Forbestea, 2018) which signals losing competitiveness of Sri Lanka in the global tea market.

Supply chain is a major topic discussed in a variety of sectors to achieve competitive advantage in the globalized context (Rao, 2007; Liu & Shi 2007; Raghuram, 2009). In essence, Supply Chain Management (SCM) integrates supply and demand management within and across companies (CSCMP, 2018) and the proper integration of these activities is expected to add more value to the final products and services (Porter, 1990). Literature suggests that the supply chain practices and the supply chain itself gives significant support to improve the export performance as it is a key determinant which controls input prices and the quality of exports. According to Stevens (1990), managers must work to integrate the supply chain to ensure that all functions and activities involved in the chain are working harmoniously. Therefore, it is essential for businesses to manage the supply chain to improve customer service, achieve a balance between costs and services and thereby achieve competitive advantage (Stevens, 1990).

Planning involves in choosing appropriate organizational goals and courses of actions to best achieve those goals which will be later used by other functions like organizing, leading and controlling (Chae & Hill, 2000). Planning measures aid in deciding where an organization should be in the future and means of moving the company forward (Nemkova, Souchon & Hughes, 2016). The absence of planning can often result in failure which could harm the organization and even lead to disaster. Effective planning leads all

employees to become decision-makers by participating in setting appropriate goals and strategies (Ejimabo, 2015). It further ensures proper coordination among different functions and departments in the organization. This will ensure that everyone pulls in the same direction. Therefore, planning operationalise as a device for controlling people and other resources which is crucial for the success in exports as well as in any other business.

### *Research Issue*

When considering the Sri Lankan context, studies have focused on sustainable SCM in Sri Lankan tea industry (Jayaratne, Styger & Perera, 2011) along with its prospects and challenges and have highlighted the necessity for an integrated approach to identify possible strategies for the Sri Lankan tea industry to improve its competitiveness (Thushara, 2015).

Planning provides opportunities for the organization to achieve unique competitive advantages that aids to attract and retain customers. In relation to the tea industry, studies have found that productivity has lagged because of the absence of sound planning and preparation in the industry (Anderson, 1996). Therefore, planning becomes vital for becoming competitive in the market. But limited researches are evident in Sri Lankan and in the Asian context combining supply chain and planning process. Under the above context, ABC Ceylon (Pvt) Limited which is engaged in the tea export business constantly faces issues in planning of tea exports which is triggered by the actors who are involved in the supply chain process. It is strongly believed by the management of ABC Ceylon (Pvt) Limited (case selected for this study) that the systematic identification of supply chain actors and observing how they influence the planning of tea exports would shed light on resolving major issues faced in the tea export planning process while reducing unnecessary time involved in planning of tea exports. Therefore, it is the aim of this research to fill the above identified lacuna in research through identifying the supply chain actors and analysing how these supply chain actors influence the tea export planning process. These aims of the study are further explored through the below research questions and research objectives. Appendix A illustrates the supply chain network in the Sri Lankan tea industry and highlights the position of tea export companies (ABC Ceylon (Pvt) Limited) within the supply chain network.

### *Research Questions*

1. Who are the supply chain actors that influence the planning of tea exports in ABC Ceylon (Pvt) Limited?
2. How do the supply chain actors influence the planning of tea exports in ABC Ceylon (Pvt) Limited?

### *Research Objectives*

1. To identify the supply chain actors who influence the planning of tea exports in ABC Ceylon (Pvt) Limited.
2. To identify how supply chain actors influence the planning of tea exports in ABC Ceylon (Pvt) Limited.

### **Contributions of the Study**

This study offers several contributions. First, this study provides a theoretical contribution to the areas of SCM and planning of tea exports while bringing these two theoretical strands together. Furthermore, it was observed that even though the supply chains of the various business sectors were broadly captured by a variety of authors, it was observed that the supply chain actors and specifically how these actors influenced the tea exports planning process were less captured from the previous research. Therefore, this study fills the above identified empirical gap in research as well.

### **Literature Review**

#### *Planning as a Managerial Function*

Management is an essential element for any kind of an organization. Koontz (2012) defined management as the art of getting things done through others with formally organized groups. Drucker (2001) described management as a multipurpose organ that manages a business, managers, workers and work. Management is also defined as a social and technical process which utilizes resources, influences human action and facilitates changes in order to accomplish organizational goals (Haimann, Scott & Connor, 1978).

In general, the four classical management functions are planning, organizing, leading and controlling (Fayol & Coubrough, 1930). Among the four functions, planning is the most fundamental yet most important managerial function of an organization. Accordingly, planning is the function of management that involves determining the best course of action for achieving the prioritized objectives of the organization as defined and agreed by the executives and the governing body (Fayol & Coubrough, 1930; Koontz, 2012).

#### *Planning and Decision Making in Exports*

Planning is important for any organization in order to prepare for uncertain circumstances in the future. Kotler and Zaltman (1971) stated that organizations should take a planned approach to the marketplace. Therefore, a significant portion of business literature is comprised of corporate planning but information on planning for international operations such as exports is often scarce. Literature reveals that exporters are reluctant towards export planning (Walters, 1985). However, in the export literature, particular studies have provided substantial evidence of a positive relationship between export planning and export performance (Zou & Stan, 1998). In the export context, high uncertainty in international markets exposes export planning into much complexity. Accordingly, an export oriented firm needs to give attention towards the regions and countries where it has greater competitive advantage in terms of economic, political and cultural terms (Arsyad & Hwang, 2014) and needs to consider these factors in order to achieve greater export performance (Zekiri, 2016). Studies have also revealed that the firms will differ in terms of the way they approach the task of export planning (Chae & Hill, 2000). Accordingly, these approaches differ according to the level of formalization of the planning process, the comprehensiveness of planning, rationality of the process and incorporation of contingency planning, conflicts involved and the level and nature of interaction between organizational functions (Pulendran, Speed & Widing, 2003). In essence, it is revealed that organizations are required to have proper export planning process to become competitive in the international markets and to direct the decision makers to make effective decisions (Raven, McCullough & Tansuhai, 1994).

### *Managerial Involvement in the Export Planning*

Studies have attempted to capture the involvement of management in export planning. Research of Sadeghi and Esmilli (2011) identified four factors which shape successful exports: individual factors, economic factors, product marginal factors and environmental factors. Subsequently, Sadeghi and Esmilli (2011) declared that out of all the above factors individual factors consisting the company management's contribution, is the most important factor in planning of exports. In this relation, studies have also identified that the lack of educated managers who does not possess sufficient skills and knowledge in management (Dawn, 2006; Muhammad & Brookshire, 2001) and specially those who lack in knowledge on incorporation of information systems lead to inefficient planning in the Pakistan textile industry (Dawn, 2006). Researches have also revealed that management-vendor relationships are crucial for the planning process (Muhammad & Brookshire, 2001) in which soft skills such as negotiation and communication skills are more significant for export oriented units (National Skill Development Corporation on Human Resource and Skill Requirements in the Textile Industry, 2010).

### *Supply Chain Management (SCM)*

SCM practices include work that are performed by an organization with the aim of ensuring efficiency and effectiveness in the management of supply chain activities (Petrovic-Lazarevic, Sohal & Baihaqi, 2007; Mentzer, DeWitt, Keebler, Min, Nix, Smith, & Zacharia, 2001) in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer (Mentzer *et al.*, 2001).

Modern organizational competition does not only lie within the organization, but it stems from the external forces which emerge outside the walls of an organization (Mentzer *et al.*, 2001). Under such a context, for an organization to survive there is a need to effectively link various operations with suppliers such as wholesalers, retailers and end customers through sharing information among supply chain members (Tyndall, Gopal, Partsch & Kamauff, 1998; Salcedo *et al.*, 2000; Butt, Shah & Sheikh *et al.*, 2019). Furthermore, studies have also claimed that supply chain actors need to be knowledgeable and should be able to work collaboratively with the other supply chain actors (Muhammad & Brookshire, 2001). Accordingly, the role of SCM is to provide

organizations with means of integrating with the components of the supply chain (Tyndall *et al.*, 1998).

### *Supply Chain in Export Related Industries*

The concept of SCM has been rooted in the export related industries. Competitiveness of export chains is critical to the economic and social wellbeing of small-economy countries as they constitute pillars of the whole economy (Lanfranco, Ferraro & Rava, 2018). Studies have illustrated that diverse forms of collaborations with competitors and stakeholders which form part of a supply chain have positive effects on vegetable exports industry (Gómez *et al.*, 2015) while shaping its supply chain (Zulfakar, Chan & Jie, 2018). Studies have also identified that information shared within the supply chain network emphasizing long term and joint planning results in higher export performance (Jraisat & Sawalha, 2013; Nakandala, Samaranayake, Lau & Ramanathan, 2017) and higher supply chain performance (Ibrahim & Ogunyemi, 2012). Researches have also concluded that incorporation of information technologies (i.e web mail, and electronic data interchange) to integrate business processes across the clothing supply chain could add more value to its customers (Au & Ho, 2002).

### *Supply Chain Related Studies in Sri Lanka*

There were several supply chain network related studies under the Sri Lankan context. Scholars have particularly focused on Sri Lankan apparel sector in studying the supply chains. Accordingly, researchers have explored how the local culture of Sri Lanka which is shaped by the Buddhist philosophy facilitates supplier engagement with CSR implementation (Perry, 2012). On a similar note, Perry and Towers (2013) illustrated how adopting SCM principles supports CSR implementation in supplier facilities by overcoming the negative effects of retail buying practice. Furthermore, Sri Lankan studies on the same industry illustrated that the supply chain risk management culture positively affects supply chain resilience capabilities, such as re-engineering, agility and collaboration while leading the organizations towards achieving higher performance (Abeysekara, Wang & Kuruppuarachchi, 2019a; Abeysekara, Wang & Kuruppuarachchi, 2019b). Focusing on the same industry the study of De Silva and Jayarathne (2018) explained that supplier development initiatives help to reduce supply base cost, reduce lead time,

improve quality, improve delivery, increase capacity and improve productivity which ultimately leads to achieve higher overall performance. Focusing a different industry, a survey based on the management and property development personals of Sri Lanka revealed that developing long-term integrated networks offer significant better values for total facilities management in the managerial and property development sectors in Sri Lanka (De Silva, Weerasinghe, Madhusanka & Kumaraswamy, 2018).

#### *Supply Chain of Tea Industry in Sri Lanka*

Factories process tea leaves and produce bulk tea and sell them to buyers with the aid of tea brokers via the Ceylon Tea Auction. Local buyers in the chain add value to tea and sell them locally where the exporters export tea with or without the value addition. According to Tea Traders' Association, Sri Lanka Tea Board (SLTB) is involved in overall supervision of tea trade, as the state regulatory authority of the tea industry which includes several divisions such as Tea Promotional Division, Tea Commissioner's Division and Export Division. The association is also involved in conducting the tea auctions, within the framework of the by-laws and conditions for the sale of tea by public auction and by private treaty of the Ceylon Chamber of Commerce (CCC), in accordance with the Sri Lankan Tea Board Law No. 14 of 1975 and the Tea Regulations, as mandated by Gazette Extraordinary No.320/15 of Jun 9, 1978. In general, the tea supply chain includes the activities of information systems management, sourcing and procurement, production scheduling, order processing, inventory management, warehousing, customer service and after-market disposition of packaging and materials.

Under the above context, very few Sri Lankan studies have particularly focused on the tea export supply chain. Accordingly, Jayaratne (2011), explored the influencing factors of the sustainable tea supply chain in Sri Lanka through mapping the supply chain process. However, our study extends the above study through exploring the supply chain process of the Sri Lankan tea exports while incorporating the ANT as a theoretical lens and illuminating systematically how each actor in the supply chain process (human and non-human) shape and influence the planning process of local tea exports.



## **Theoretical Framework**

### *Actor Network Theory*

ANT consists of actors in human and non-human nature in which there is no distinctive difference given to objects or people (Law, 1992). Callon (1990) in his paper “Techno-economic networks and irreversibility” illustrates that the entities are able to associate texts, humans, non-humans and money as “actors” of the ANT (Callon, 1990). Accordingly, the human, non-human, social and technical aspects are not being separated in order to understand the complex social phenomena as the theory emphasizes the notion of symmetry (McLean & Hassard, 2004). The essence of ANT is that the actors are enrolled in a network with an aim of achieving particular goals and objectives, through a process of translating various interests (Hassard, Law & Lee, 1999; McLean & Hassard, 2004).

As mentioned earlier the translation of an actor network is a process where an actor enrolls others by integrating and aligning the multiple actors’ interests in constructing a network (Callon, 1986, 1990; Latour, 1987; Latour, 2005). Resources are mobilized and knowledge is continuously transformed in the process as the central actors translate other actors’ interests to accept their claims and proposed solutions (Callon, 1986, 1990; Latour, 1987, 2005). Under such a context, managing relationships is considered as utmost important to produce alliances and support one main objective amid the continual translation process (Latour, 1996).

### *Application of ANT in the Supply Chain Network of Tea Export Industry*

In light of the studies analysed in the above literature review (section 2), it was apparent that there is a lacuna in research in the area of management to analyse the supply chain actors and its influence on export planning specifically in the tea export industry. Moreover, since the adaptation of ANT enables to illuminate both the human and non-human actors, it was apparent that the incorporation of ANT would facilitate to identify the above supply chain actors while illumination how all these varied actors influenced the tea export planning process. Therefore, considering the above rational factors, the ANT was incorporated as the theoretical lens of this study to achieve its research objectives.

### *Application of ANT in Tea Export Planning*

When a company is planning its exports or any other operation, the main work is categorised based on the resource allocation. The work is then scheduled into subcategories as per the task allocated. This scheduling cannot succeed without knowledge of the work being planned. Moreover, an incomplete planning process might impair the worth of schedules and hence lead to an uncontrolled flow of project progress (Andersen, 1996). In this respect, separation between the two processes could lead to overlapping and partial duplication in resolving resource constraints in the schedule (Tan & Khoshnevis, 2000). Accordingly, Chua and Godinot (2006) noted that a well-defined work breaking schedule in the planning phase improves the interfaces between parties and thus allows for more dynamic, as well as functional schedules.

Under this study, tea export planning process is illustrated with work breaking schedules and its subsequent work activities. By using ANT this study attempts to identify the actors (human and non-human) and analyse how they are connected with the respective work activities of the work breaking schedules and influence the export planning process in the concerned company (ABC Ceylon (Pvt) Limited). Furthermore, this study also observes the interaction between the human and non-human actors and how they influence inter-organizational and intra-organizational considerations involved in the tea export planning process. Appendix B illustrates a snapshot view of the above integration of human/non-human actors with work breaking schedules and work activities through influencing factors. Accordingly, influencing factors which were specific to human actors and non-human actors were identified separately to identify how each of these actors interfere the tea export planning process.

## **Research Methodology**

### *Research Approach*

A qualitative research is the systematic inquiry into social phenomena in natural settings. This includes how people experience aspects of their lives, how individuals and/or groups behave, how organizations function, how interactions shape relationships etc. (Teherani, Martimianakis, Stenfors, Wadhwa & Varpio, 2015). In a qualitative research, researcher is the main

data collection instrument. The researcher examines the reasons of the events occurred (why), situation (what) happens, and (how) those events affect the individuals rooted in the research setting. According to Irvine and Gaffikin (2006) and Denzin and Lincoln (2000) a qualitative researcher gathers a variety of data types, all of which contribute to his understanding. Data is gathered from in-depth interviews, observations, field notes and study of documents when combined would form a reservoir of materials on which the qualitative researcher will base his or her descriptions and analysis of the given social situation (Vaivio, 2008; Johnson, Buehring, Cassell & Symon, 2007). Accordingly, it was decided to follow a qualitative methodology, to identify how the actors influence the planning of tea exportation process.

#### *Case Study Approach*

Within the qualitative methodology this research adopts the case study approach. Case study method (Yin, 2009) is a qualitative, multi-aspect, in-depth study of one or two cases (Larsson, 1993; Vaivio, 2008) and has been marked as one of the significant trends in management research during recent years (Lukka & Kasanen, 1995). Ferreira and Merchant (1992) have presented the characteristics of case studies: the researcher has direct contact with organizational participants particularly through interviews (Otley & Berry, 1994) and direct observations (Ferreira & Merchant, 1992) of activities and these contacts provide primary source of rich data which enables an in-depth analysis of the organizational conditions. Accordingly, in order to investigate answers for the research questions of the study (who are the supply chain actors, and to understand how supply chain actors influence planning of tea exports), a case study approach was identified as the most suitable approach as it provides the researcher to conduct an in-depth study through building direct connections with the organizational actors while facilitating to obtain rich data which emerge from the research context.

#### *Research Site*

The selected company, ABC Ceylon (Pvt) Limited is one of the Sri Lanka's leading tea exporting companies which provides its buyers around the world with pure and high-quality tea. ABC Ceylon (Pvt) Limited is renowned as one of the oldest established tea export companies (established more than 150 years back) in Sri Lanka which was originally owned by an English based company. Currently, the company employs more than 400 employees and is

among the top 20 tea exporters of Sri Lanka. As a well-established company, it was observed that their tea export planning process was also well structured, organized and updated. Therefore, ABC Ceylon (Pvt) Limited was selected as the case to study how the supply chain actors have influenced the export planning process. The management structure of the ABC Ceylon (Pvt) Limited is separated into several departments such as tea department, shipping, operational, finance and purchasing. Among these departments tea department is the pioneer in product development. This department involves in buying, grading, developing, account handling, customer complain handling and market entry. Tea director is the head of the department who is one of the responsible persons for the strategic planning of the tea department. Tea managers are the responsible persons for the account handling. Tea managers represent the client's requirements and they are responsible for maintaining good client and supplier relationship while tea assistants are responsible for evaluating offered samples from the suppliers.

#### *Data Collection*

Two data collection methods were adopted in this study as interviews and documentary analysis. The data was collected in two stages: the pilot study and the main study.

#### *Data Collection Methods*

The main method of data collection was in-depth interviews which were conducted to capture different views of the key actors of the organization. The interview guide was developed focusing the research questions in order to capture the rich ideas of the respondents from the research context. Accordingly, probing questions were included (i.e. "how" and "why") to capture the ideas of the interviewees on the research phenomenon under study. In order to obtain more in depth information from the respondents, significant time was spent in the field conducting the interviews. Snowball sampling method was adopted in selecting the respondents and accordingly, the most appropriate persons for providing rich data for the research questions were selected and interviewed. Document analysis is a vital part of qualitative research in which documents are interpreted by the researcher to give meaning to the area under study. Accordingly, the interview data were cross checked by certain documents such as meeting minutes, tea auction related documents,

export plan etc. which were produced within the organization facilitating data triangulation (Vaivio, 2008).

### *Stages of Data Collection*

Data were collected in two stages: pilot study and the main study. The pilot study was conducted to assess the feasibility of the study and to ensure whether the research protocol is realistic and workable. Since the topic under study is relatively new to the arena of academic research, a pilot study was helpful to set the questions in the interview guide. Accordingly, the head of tea department and head of shipping department of ABC Ceylon (Pvt) Limited were interviewed during the pilot study as they were the key players who took prominence in the export planning process. The figure in Appendix A was constructed incorporating these initial information obtained. The main study was based on the interviews. The interviewees were selected based on purposive sampling, based on the most appropriate people to provide with the most relevant rich data related to the research questions. Accordingly, eleven top level and middle level managerial employees were interviewed in order to obtain data. Interview process was based on an interview guide which contained open-ended questions. Figure 1 exhibits the organization structure of ABC Ceylon (Pvt) Limited and key personnel who were interviewed are shaded in Figure 1.

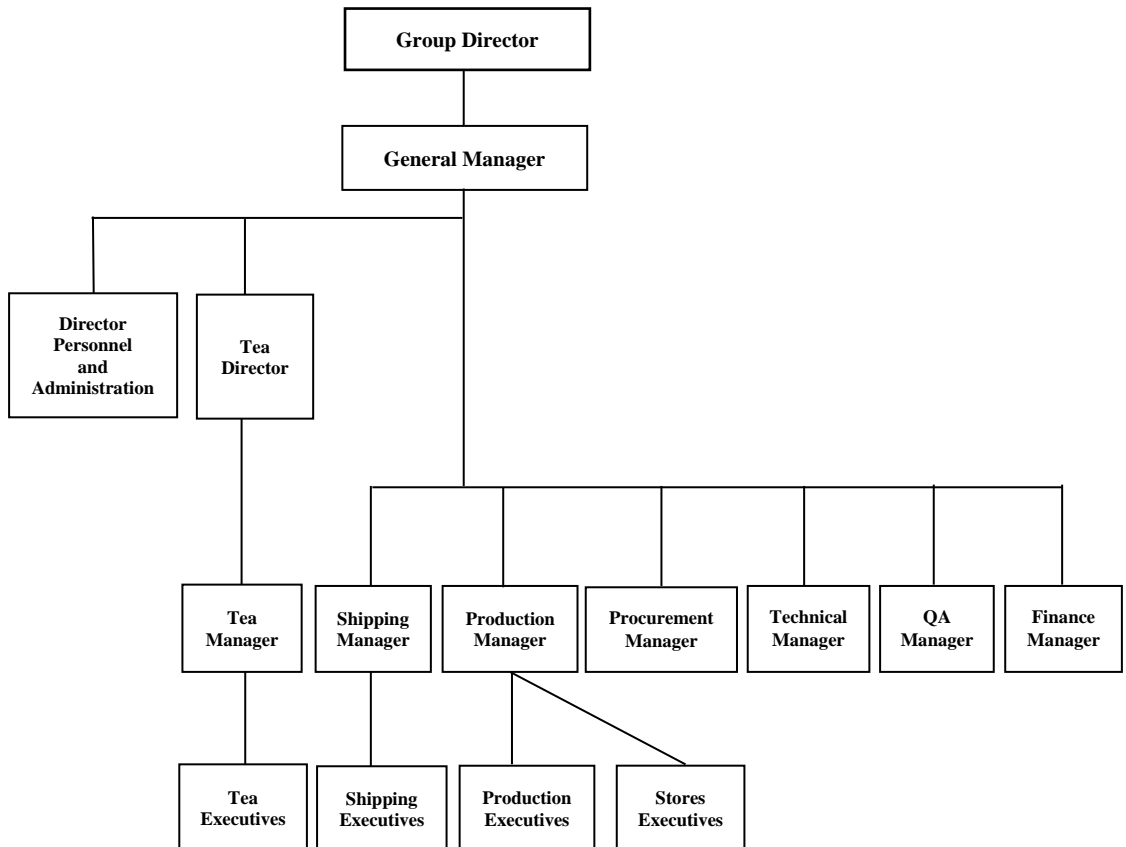
### *Data Analysis*

In order to analyse the interview data, a thematic analysis (Braun & Clarke, 2013) was carried out. Accordingly, all the interviews were voice recorded and transcribed precisely. Then the transcripts were analysed in isolation and taken together as a whole focusing the research questions. Next, main themes (the actors who influenced the supply chain of exports) were identified and then sub themes (how the actors influenced the supply chain of exports) were identified based on ANT. Accordingly, the transcribed data was observed to identify the themes and while analysing relationships among different themes they were related to the ANT. The thematic analysis enabled to build up the flow of the qualitative research while elaborating the important facts which emerge from data.

## Findings

### *Key Findings*

**Figure 1: Organizational Structure of ABC Ceylon (Pvt) Limited**

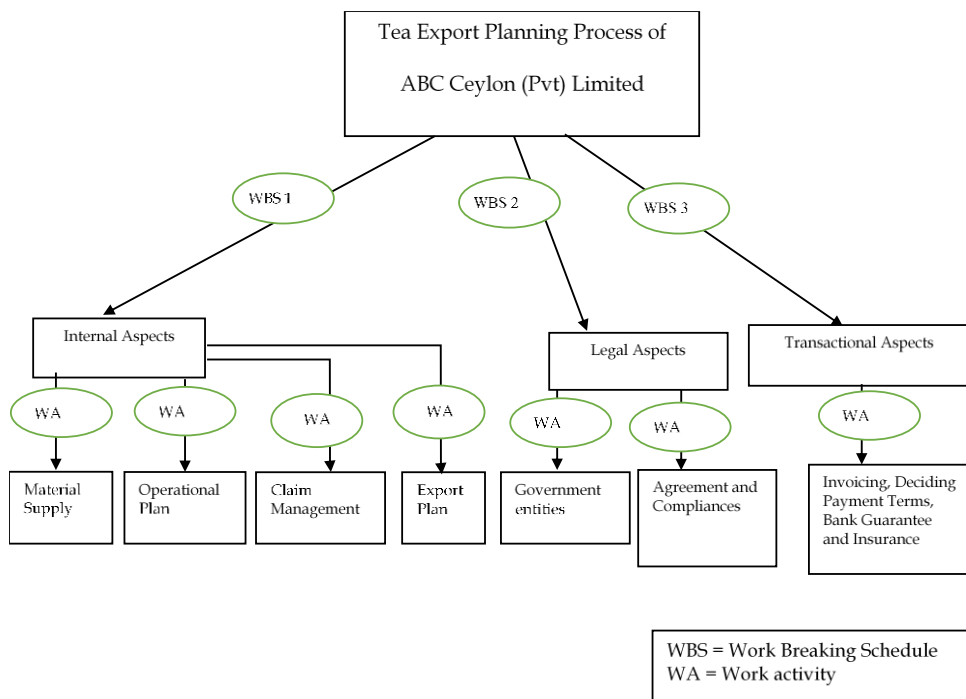


Source: Author Constructed

As per the tea director of ABC Ceylon (Pvt) Limited, tea export planning starts whenever the customer agrees to buy a product at the decided price. Tea selling business starts when the sample is approved by the customer which is to be referred to in future shipments. Then the selling product will be developed with packaging and finalized with shipment quantities. Since tea exports are governed by the SLTB with the guidance of the Tea Research Institute (TRI), all export companies follow the same export procedure.

Figure 2 was structured based on the feedback given by the interviewees of the ABC Ceylon (Pvt) Limited. Accordingly, three main work breaking schedules have been identified based on the nature and functionality of the identified tea export planning process. In addition, seven work activities have been observed under the main work breaking schedules. Accordingly, actors (human and non-human) who influence the tea export planning and how these actors influence the tea export planning are identified through analysing work activities under each work breaking schedule as explained below.

**Figure 2: Export Planning Process – ABC Ceylon (Pvt) Limited**



Source: Author Constructed

*Internal Aspects*

This includes the activities which could be selected and controlled under the power of company finance policy, quality policy and operational policy. Four work activities have been identified as below.

### *Material Supply*

Under material supply skill, experience and knowledge of the tea department personnel have been identified as the main influencing factors. Tea manager expressed how the skills, experience and knowledge of the tea executives influence the tea purchasing process:

"We regularly purchase tea through the tea auction system. Tea samples that are received weekly from the brokers are tested for the appearance of the leaf and quality before purchasing at the auction. Our well-trained tea executives perform this evaluation to select the best tea. This entire process of selecting tea is a cost and quality sensitive operation which will be highly depending on the talent and the experience of the tea executives" (Tea Manager).

Furthermore the non-human actors such as the auction system was revealed to be providing important information about market situation. Similarly, the supplier evaluation process and multiple supplier base also contributes in providing such useful information. Confirming these ideas, a Tea Executive expressed his ideas as follows:

"Tea executives or managers are always committed to deliver a quality product. They maintain a supplier base for different tea grades. They are grading all tea types weekly, and always keep alternative options among the various selected suppliers as there is a high risk of losing in auctions. Managing multiple supplier base will avoid any uncertainty in material supply and will assure the high quality of independent tea grades which are used for the optimum blending" (Tea Executive).

### *Operation Plan*

Operation team which includes representatives from production, technical, and quality departments directly influences export planning. Information related to the production capability, packaging design approval, machine availability and their condition for the production will be analysed by this team. Accordingly, these human actors utilise their knowledge in shaping the export planning process.



As the General Manager reveals Enterprise Resource Planning (ERP) system is the main non-human factor which facilitates operation planning of the ABC Ceylon (Pvt) Limited:

“We did a comparison between manual systems and the ERP based systems and found positive figures for assuring operation with high accuracy. It coordinates all individuals to one task and gives information that everyone requires. Especially in the planning stage, the product creation process is controlled by ERP system” (General Manager).

Therefore, it is evident that ERP is a main non-human actor which coordinates all internal actors which forms the major link that connects human actors within the supply chain network of ABC Ceylon (Pvt) Limited through acting as a major source of providing information.

#### *Export Plan*

The export process is mainly focused on planning of shipments. ABC Ceylon (Pvt) Limited has internal shipping department personnel specialised in their skills and knowledge in planning of shipments. The Shipping Manager expressed his ideas as follows:

"We are having a weekly shipping meeting to coordinate each activity related to shipments. All key personnel involved during the planning are participating in this meeting and they discuss resource allocation and progress. All of them have a good instinct on planning of shipments” (Shipping Manager).

On the other hand, shipment scheduling process (non-human actor) assists the human actors through providing accurate and reliable information in order to make decisions.

#### *Claim Management*

Claim management process is essential to recover any cost that would occur due to violation of contract agreement, amendment of contract specification or national level policy enhancements. Interviewees revealed that the central government, SLTB and TRI have equal responsibilities on policy creation,

updating and acknowledging the required parties. Hence the government entities (i.e. TRI, SLTB and Central Government) are identified as non-human actors and the information they process and disseminate are identified as influencing factors in the tea export planning process. Further, company management (Account Manager) is identified as a human actor who involves in decision making at the claim handling, and his knowledge and skills are identified as influencing factors towards the actors at the claim management process.

### **Legal Aspects**

The legal aspect is sub divided into two work activities: government entities; and agreement and compliance.

#### *Agreement and Compliances*

Under the work activity of agreement and compliance two important human actors were identified: NPD team and Accounts Manager. As the procurement manager explained the design of the packaging material depends on the nature of the product but the NPD team will guide procurement division to come up with a standard package which complies with all statutory requirements. Accordingly, the knowledge of the NPD team with regard to industry updates and shipping process plays a crucial role in the tea export supply chain process.

The company has assigned an accounts manager from the tea department who is specialized in tea trade. He will be assigned to a particular customer and would handle the quality of the product/order requirements and maintain a good customer relationship for the betterment of the business. Tea Director explained the importance of the agreement process which is critical to the planning process, as it defines the product attributes and the time frame. Therefore, the negotiation skills and knowledge on industry updates possessed by an accounts manager play a crucial role in the export supply chain process of the tea industry.

#### *Government Entities and Legal Framework*

SLTB is the main governing entity that controls the entire tea industry. It is the authoritative body, responsible for regulating the activities of the tea industry which includes tea production, tea cultivation and replantation,

rehabilitation of old tea estates, establishment of factories and monitoring their operation. As a Shipping Executive expressed:

“SLTB decisions are directly related to the export process as any tea exporting company needs to comply with it. All blend sheets and packing details are sent to the SLTB for reference. Any product which is carrying Lion Logo should comply with the given standards. Then the shipping department is planning the loading/dispatching based on the tentative dates. If SLTB delayed the process, they will not be able to load and ship as planned. Then the whole process will hold for weeks” (Shipping Executive).

Accordingly, it is evident that SLTB is the key legal regulator that influences export planning. Hence this study identified government entities (i.e. SLTB), as a non-human actor as its structure and procedures have been influencing the tea export planning process. As explained above government entities (i.e. SLTB) influence the tea export planning process through processing tea related market information and through acting as an effective intermediary in communication.

#### *Transactional Aspects*

Transactional aspects carry the main role in order processing as it gives a guarantee to the buyer and seller. Accordingly, invoicing, deciding payment terms, issuing cheques for bank guarantee and providing insurance policies fall within this work activity. In this regard one shipping manager expressed his thoughts on the importance of transactional aspects and its related activities as below:

“Insurance of the cargo and the bank guarantee are the main steps to reduce the risk in the transaction which Finance and Account Manager should follow” (Shipping Manager).

Accordingly, this study identified the transactional process which includes transactional aspects as a non-human actor and transition of information and ensuring transparency as influencing factors which explains how the transaction process (non-human) actor influences the tea export planning process.

The above explained actors related to work breaking schedules of the tea export planning process and how these actors have influenced the tea export planning process (through identifying influencing factors) have been illuminated through the ANT in the next section.

#### *Data in Light of ANT*

This section illustrates the data gathered in light of ANT. Appendix C exhibits the human and non-human actors of the work activities under each work breaking schedule of tea export planning and the relevant influencing factors (skill, experience, knowledge, information, communication and transparency) which illustrates how each actor influence the tea export planning process. Appendix D has encapsulated the interaction of human and non-human actors and their influencing factors pertaining to the identified work activities of tea export planning process through ANT. Accordingly, it was identified that, irrespective of which type of actor (human or non-human) all the actors influence the export planning process in ABC Ceylon (Pvt) Limited through different influencing factors. More importantly, it was also identified that human actors and non-human actors influence the tea export planning process differently. As the findings suggests, the human actors such as the tea department personnel, shipping department personnel, operational team, NPD team and account manager have influenced the export planning process through skills, experience and knowledge while on the other hand the non-human actors such as auction system, multiple supplier base, supplier evaluation process, ERP system, shipment scheduling process, government entities and transaction processes aid the tea export planning process through facilitating information dissemination, communication and transparency.

### **Discussion and Conclusion**

#### *Discussion*

##### *Planning and Decision Making in Exports*

Researchers have revealed that a firm's planning process is exposed to high uncertainty in the international context as exporters have to deal with multi-economic and multi-cultural considerations (Zekiri, 2016). Similarly, our paper also reveals that tea exporters have to deal with these uncertainties and illustrates how it incorporates non-human actors such as multiple supplier base to reduce these negative effects of uncertainty.

*Importance of Actors in the Exports Planning Process*

*Skills, Knowledge and Experience of Management*

Researchers have studied the involvement of management on export planning. The study of Sadeghi and Esmilli (2011) has illustrated that company management's contribution plays an import role in planning of exports. Similarly, in relation to our study it was observed that the skills, knowledge and experience of tea department personnel have a major influence on the tea export planning process. In this relation, studies have also claimed that the lack of knowledgeable and skilled managers lead to inefficient export planning (Dawn, 2006; Muhammad & Brookshire, 2001). Accordingly, our study also reveals similar findings.

*Importance of Information Systems*

The study of Dawn (2006) illustrates that lack of incorporation of information systems leads to inefficient export planning in the Pakistan textile industry. Our study also identified non-human actors such as ERP system contributes a lot in planning tea exports. Furthermore, the other non-human actors such as auction system, multiple supplier base and supplier evaluation process also aid in the above export planning process through providing the required information to the human actors in order to make appropriate decisions. Incorporation of systems such as ERP systems not only facilitates the actors to communicate with each other but also it provides means of integrating with the components of the supply chain (Tyndall *et al.*, 1998). In addition, under intense competition, information systems such as ERP systems effectively links various operations with suppliers such as wholesalers, retailers and end customers through sharing information among supply chain members (Tyndall *et al.*, 1998; Salcedo *et al.*, 2000; Au & Ho, 2002).

*Soft Skills of Actors*

Studies have also revealed that relationships backed by soft skills such as negotiation and communication skills are crucial for the export oriented planning process (Muhammad & Brookshire, 2001; National Skill Development Corporation on Human Resource and Skill Requirements in the Textile Industry, 2010). Similarly, our study also reveals that the negotiation

and communication skills of the human actors such as the Accounts Manager plays a crucial role in building up relationships and enforcing the tea export planning process.

#### *Translation process in light of ANT*

It was evident that both human and non-human actors constantly associate with each other through a process of translation (Callon, 1986; Czarniawska, 2000) in the tea export supply chain network. Currently, the tea export supply chain network is in a state of “Mobilisation” in which the roles and influencing factors of the respective human and non-human actors have gained wider acceptance, and have become taken-for-granted and black-boxed. Since tea industry has been evolving in Sri Lanka for over a century and accordingly the tea export market and its supply chain actors have prescribed established roles which actors question very less. In the lens of the ANT, the influencing factors of the respective actors could be seen as black boxed which will not subsequently be questioned for at least some time (Latour and Woolgar, 1979, pp. 241-3).

#### *Conclusions*

This research seeks to identify the actors who influence the tea export planning process and their influencing factors (which explains how the actors influence the said planning process). The below section explains how the respective research objectives were achieved.

#### ***Objective 1: To identify supply chain actors who influence planning of tea exports in ABC Ceylon (Pvt) Limited***

This study revealed the human and non-human actors who influence the tea export planning process of ABC Ceylon (Pvt) Limited. Tea department personnel, shipping department personnel, operational team, NPD team and account manager have been identified as human actors who influenced the above export planning process. On the other hand auction system, multiple supplier base, supplier evaluation process, ERP system, shipment scheduling process, government entities and transaction processes were identified as non-human actors in the supply chain network of tea export planning process.

***Objective 2: To identify how supply chain actors influence planning of tea exports in ABC Ceylon (Pvt) Limited***

As explained in section 5, the actors' influence on the tea export planning process has been identified as the influencing factors. When considering human actors, knowledge has been identified as the common influencing factor among all the human actors (Tea Department Personnel, Operational team, Shipping Department Personnel, Account Manager and NPD Team). In addition to knowledge, skill and experience of the tea department personnel has been identified as influencing factors. Furthermore, together with knowledge, skill has been identified as an influencing factor of account manager and shipping department personnel.

When considering non-human actors (i.e. auction system, multiple supplier base, supplier evaluation process, ERP System, shipment scheduling process, government entities, transactional process), provision of information has been identified as the common influencing factor of all the non-human actors. In addition to provision of information the government entities facilitate communication among supply chain actors. Furthermore, in addition to providing information, the transactional process signals transparency through ensuring the trustworthiness of invoicing and when making cheque payments. Accordingly, the influencing factors were identified pertaining to each human actor and non-human actor which indicated how these actors influenced the tea export planning process.

***Directions for Future Research***

This study adopted ANT to identify the human and non-human actors related to the supply chain network of tea export planning process. Future researchers are encouraged to use a different theoretical framework to capture these elements. Furthermore, this research could be applied to a different export contexts (i.e. cinnamon, cocoa etc.) in different countries (i.e. developed countries) in order to identify different actors and their influence on the planning of exports.

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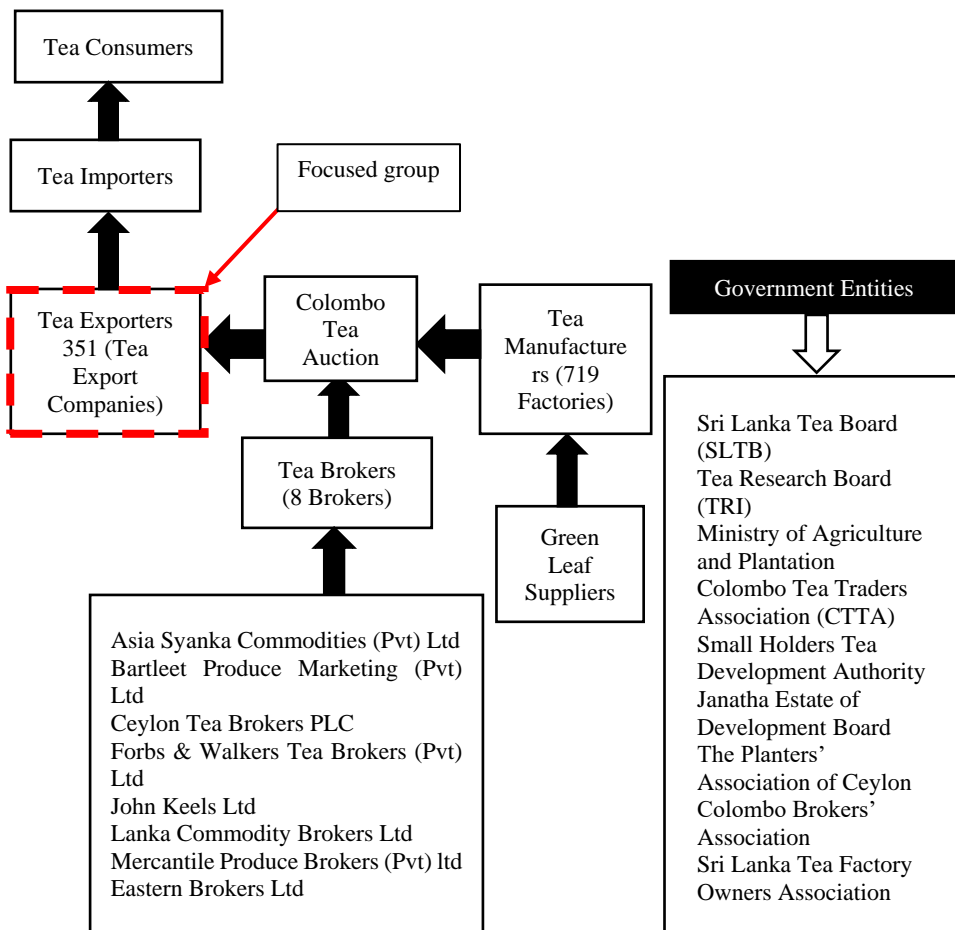
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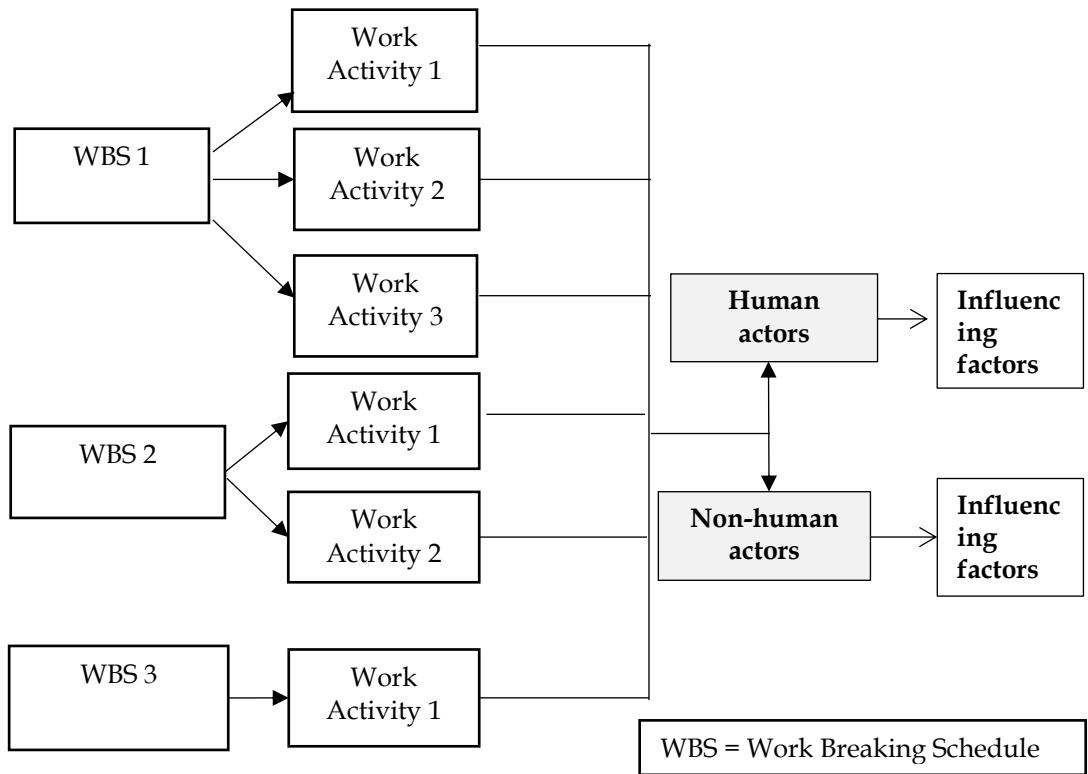
## Appendices

### Appendix A – Research Site Under Study



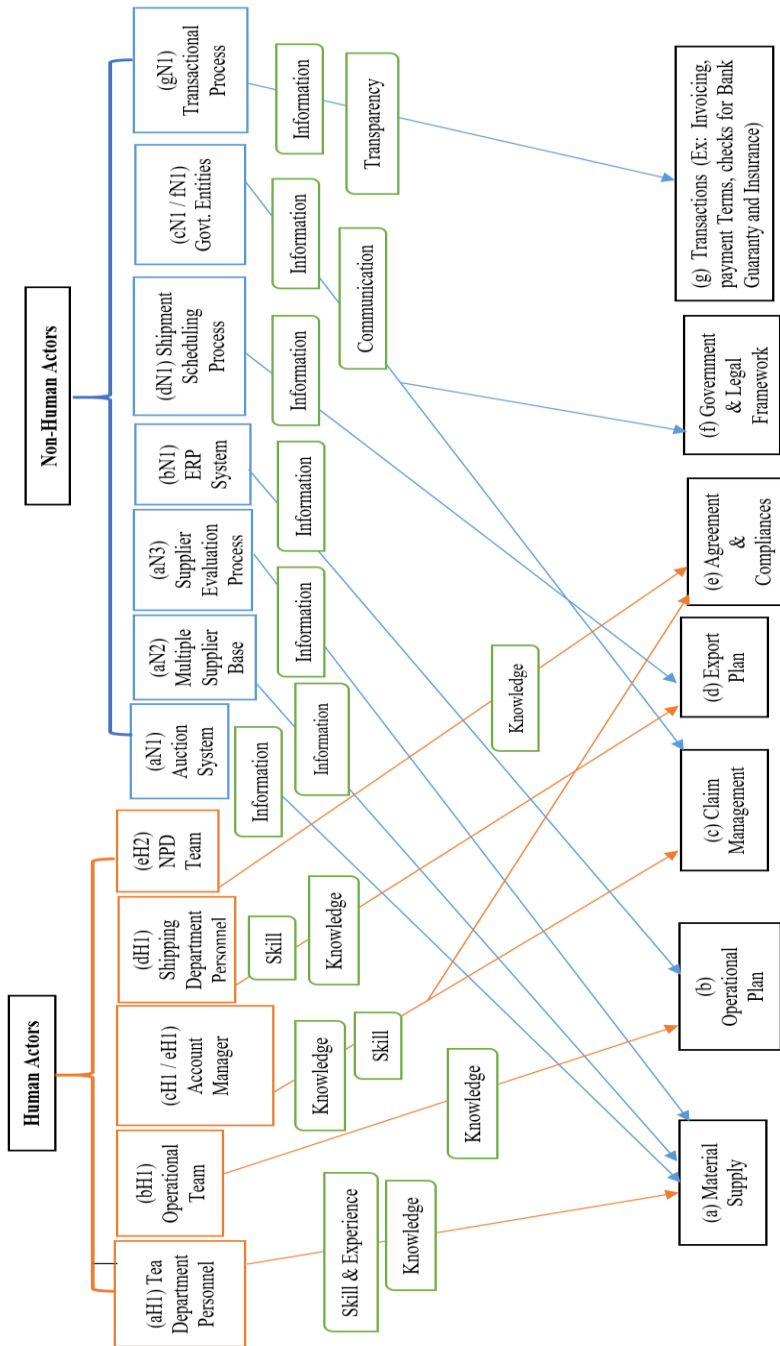
Source: Author Constructed

**Appendix B – Interaction of Human Actors and Non-human Actors of Work Activities**



Source: Author Constructed

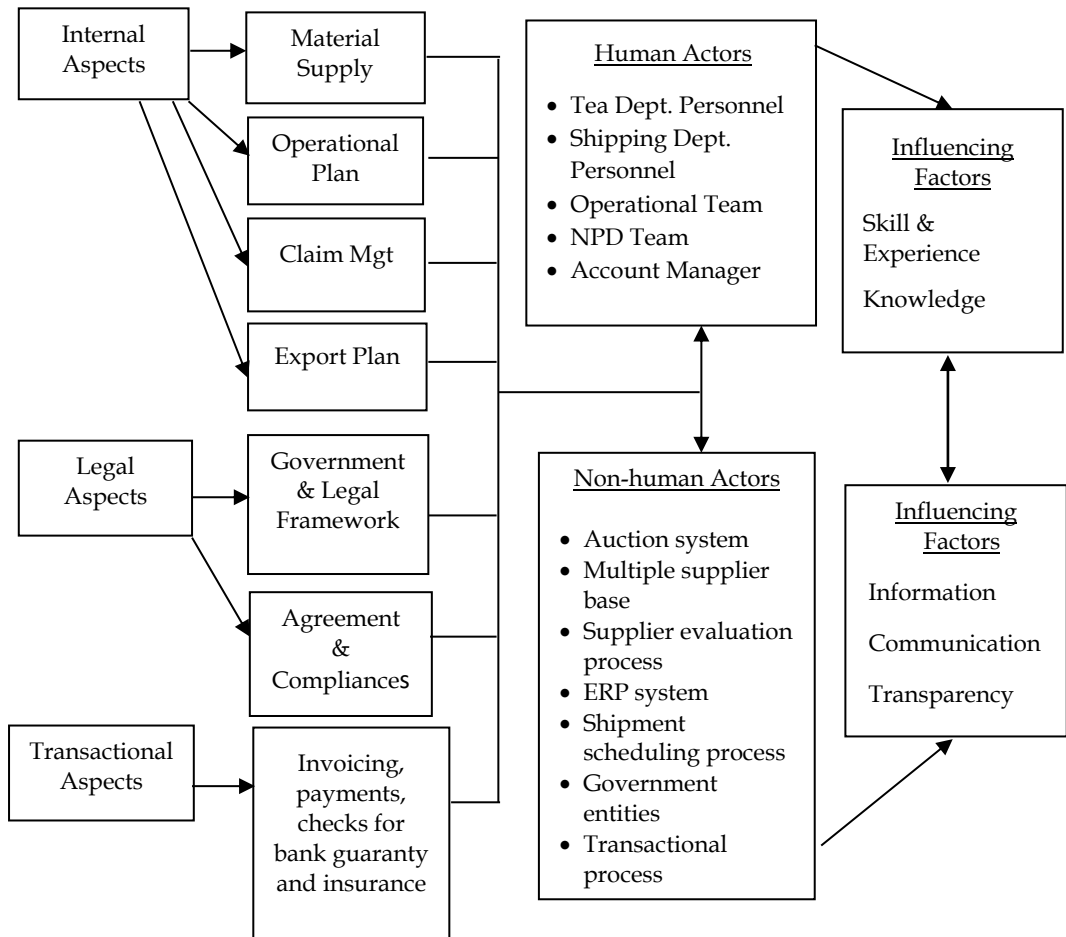
**Appendix C -Tea Export Planning Process with Actors and Influencing Factors**



Source: Author Constructed



**Appendix D - ANT Theoretical Model in relation to Tea Export Planning  
Process – ABC Ceylon (Pvt) Limited**



Source: Author Constructed

