UNIVERSITY OF KWAZULU-NATAL

Trade Security in Supply Chain: The Roles of Customs and Port Authorities towards Security and Trade Facilitation in South African Ports

BY

MTHOBISI SYDNEY BUSSE

208513689

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School of Law, Economics and Maritime Studies

College of Law and Management Studies

Supervisor: M.A. Goodger

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DECLARATION

I, **Mthobisi Busse**, declare that:

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ABSTRACT

Since 9/11 and the fundamental growth of terrorism, the reauting security threats at the seaports, with potential loss of human lives and theft of goods means Supply Chains, must be addressed to secure and predictable, particularly given the growth in the volume of global transport. Increasing pressure has been invoked on the governments of many countries by the World Customs Organisations (WCO) and other global organisations, to actively strategise and ensure the safety and security of the ports through new strategies directed at effective Supply Chain management initiatives. These new Supply chain standards are focused on achieving effective seaport security measures. Christopher and Peck (2013) mentioned in their thesis that, one of the ways of managing the challenge of security threats at seaports is to galvanise and manage Supply Chain risk through the creation of a more appropriate approach. The universal trading system is susceptible to terrorist exploitations and attacks that have the propensity to endanger the total global economy and the social security of nations.

Further, while this is being said, reports have shown that there is still a lack of empirical justification with respect to how security measures and Supply Chain management are related (Cavinato, 2010). This study thus focuses on Security in the Ports and examines the impacts from within the Customs Administration. It is hoped to culminate in adherence by the respective South African authorities in capturing and introducing compliance to security to the benefit of global traders for goods shipped to and from the Republic of South Africa. Through a desktop review of the literature, the study found that much is still expected from the ambit of the South African government and other government agencies to address the security challenges of seaports through appropriate and strategic interventions. The study concludes that there is an urgent need for more effective and robust monitoring functions by the South African Ministry of Transport, a genuine legislative review of seaport laws and regulations, as well as the need to address the challenges of security-related corruption in the operations of seaport activities. It is clear that Safety and Security in RSA Ports must be on par with global standards, for us, as a nation, to retain an economic advantage and continued participation in global trade.

Keywords: Supply chain, customs, seaport, security, trade facilitation, transports.

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LIST OF ACRONYMS

AEO: Authorised Economic Operator

CBP: Customs and Border Protection

CSI: Container Security Initiative

CPT: Carriage Paid To

C-TPAT: Customs-Trade Partnership Against Terrorism

ECP: Economic Competitivity Package

FAST: Free and Secure Trade

FOB: Free On Board

IATA: International Air Transport Association

ICAO: International Civil Aviation Organisation

IIS: Incident Information Service

IMO: International Maritime Organisation

ISPS: International Ship and Facility Ports Security Code

JIT: Just-In-Time

LDC: Logistics Data Communications

PIP: Partnership in Protection

RCAR: Regulated Air Cargo Agent Regime

RKC: Revised Kyoto Convention

RSA: Republic of South Africa

SA: South Africa (ZA)

SARS: South African Revenue Services

SC: Supply Chain

SCM: Supply Chain Management

SME: Small and Medium Enterprise

SMME: Small, Micro and Medium Sized Enterprise

SOLAS: Safety of Life at Sea

STP: Secure Trade Partnership

TAPA: Technology Asset Protection Association

TFA: Trade Facilitation Agreement

TNPA: Transnet National Port Authority

US: United States

WCP: World Customs Organisation

WTO: World Trade Organisation

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Figure 1.2 : Supply chain security measures now stretch from origin to destination

Figure 2.1: South African Supply Chain Management Model

Figure 6.1: Components of a Security System

Figure 8.1: Defence in depth

CHAPTER 1: INTRODUCTION

1.1 Background to the study

Over many years, international trading, transport networks and infrastructure have been described as possible threats for international terrorism and cross-border crime. In terms of barriers and limits, customs have always been responsible for regulating international trade. Customs is defined as an agency or body responsible for regulating the movement of goods into and out of the market (Holmstrom, 2008). Imports or exports of such goods may be banned, based on local laws and regulations, and the customs department enforces certain rules. Both imports into the country, the collection of duties and the avoidance of the smuggling of illicit goods into and out of the country, are the responsibility of customs services. The factor of protecting the supply chain for foreign trade has contributed to the development of Customs with extra burdens to manage this balance. The Supply Chain Management (SCM) in the global business landscape can be seen as the flow of goods and services, which involves the global movement and storage of raw materials, work-in-process inventory, and finished goods, from point of origin to point of destination and consumption. Mentzer (2012) explained the concept as the coordination and integration between different stakeholders participating in diverse activities that are related to the production of goods and services. Accordingly, the motive is to improve organisational efficiencies, quality, and efficient customer service relationships through robust collaborations (Chen & Gong, 2013). The topic of Security has become a phenomenon in the interest of many global trading nations, and its prioritisation, adoption, and implementation are critical and can impact the Supply Chain. Within the Supply Chain, many factors come under consideration. Therefore, ports play a strategic role in the trade facilitation of goods in global trade and it is important to examine the adoption and impact of such measures within ports. In South Africa, the ports are controlled and managed by The Transnet[1] Group.

The necessity of security measures within Supply Chain Management and Logistics functions has continued to ascend to importance from the perspective of both research and practice (Fine, 2010). In order to ensure the import and export of goods within a region, port protection is essential.

Simply stated, port protection applies to the security and law enforcement mechanisms used to secure a shipping port from crime and other criminal acts and activists (Pollara, Bunin & Pullen, 2015). It

[1] Transnet is a state-owned company which continues to leave an indelible mark on the lives of all South Africans. With a geographical footprint that covers our entire country, Transnet is inextricably involved in all aspects of life in South Africa. Transnet is the custodian of ports, rail and pipelines. Its objective is to ensure a globally competitive freight system that enables sustained growth and diversification of the country's economy.

also applies to the steps employed to ensure that the arrangements signed with other countries are also duly executed. The International Maritime Organisation (IMO) is responsible for global port management, which is a part of maritime security (Andritsos & Fivos, 2013). Port protection is crucial because marine transport, particularly cargo transport, is a thriving and commonly used mode of transportation (Talley, 2017). Due to the improper use of shipping containers, careful control and inspection of the transferred cargo must be carried out (Pollara et al., 2015). In recent years, the need for maritime protection has increased. Terrorists and pirates have begun to use the sea route to do greater harm to civilisation; as such, countries need to incorporate a systematic regulation that can help protect ports and maritime areas in general (Talley, 2017).

As a response to the constellation of risks associated with the transport industry (port system), there have been copious regulations enacted to combat the unceasing security threats emanating from different strands of terrorist attacks involving the transport and logistics systems (Haimes, 2014). More importantly, the world has recently become a conglomeration of maritime links in which seaports are now interconnected into sophisticated configurations of reliance with respect to hubs and feeder relationships (Fine, 2010).

This universal trade dependency is now being conducted within a wider competitive environment. With the expansion of maritime Supply Chain and Logistics functions, the need increased for more efficiency and security in the discharge of Supply Chain functions within the seaports. Needless to say, any aimless attitudes towards ensuring and achieving these measures, will continue to have a profound impact on the management and security of ports across the globe (Herald, 2012). While there have been several studies on the discourse of SCM in terms of its effectiveness for organisational productivity and growth (Haimes, 2014; Lasher, 2003), few of these studies have been conducted to understand how SCM initiatives can ensure security measures, specifically for port operations. As a departure from these studies, the current study seeks to understand how SCM initiatives can be positioned to ensure security measures, with specific reference to the Transnet Port Authority, Durban, South Africa, and the simultaneous developments within the Customs Authority.

The discourse revolving around maritime security through the lens of global level encapsulates transcontinental insecurities that happen on the sea and particularly occurred at the dock yards. No doubt, the sea and river system of transportation systems remain the most accepted means of transportation in relation to the shipments of goods (Johnston, 2003).

Again, while it is indubitable the verity that nearly 80 percent of the entire world trade are done through shipments (Kenberry, 2008), it is clear that international seaborne trade has gradually declined due to

the consistent global securities occurrence (Siteanu, 2013), leaving the security of maritime trade at a closed end. The unfettered maritime sector, more particularly the ports, has become the centre of devotion for global security outfits that controls and prevents security threats and crimes (Kenberry, 2008). This has further translated into a shared interest of ports in a bid to guarantee safe passage of ships across the oceans (Hettne & Fredrik, 2006).

In effect, a more proactive and integrated approach to global ports security has been laid down by the International Maritime Organisation (IMO) in ensuring seaports conform with international treaties and regulations (Levitsky, 2013). This act as motivated largely by the 9/11 US World Trade Centre (Twin Towers) incident in 2001, resulted in international security bodies instilling drastic scrutiny of insecurity threats, consistent cargo attacks, especially those masterminded by terrorists. Examples, including terrorist attacks on vessels conveying oil supplies, which could engender a severe consequence on an international level, and greatly impact oil prices and stability (Shah, 2017). In addition, at a global level, cargo shipping itself comprises insecurity to such an extent that containers are predominantly used to convey illicit and illegal drugs, and immigrants across oceans and into seaports (Pinto & Talley, 2006).

In contrast, however, 95 percent of freight between countries does so through water transportation (Mikes & Kaplan, 2013). To this end, if there are terrorist attacks within the confines of a maritime transportation system, it is probable to engender a severe outcome on international trade (Kumar & Hoffman, 2014). The flow of trade unarguably would likely come to a simulated stoppage for a long period. The outcome, of course, will be awful especially if the event were to happen in the US as a result of the US contributing to the largest world trading volume (Lee & Whang, 2013). One can also consider an attack on the Durban Port blocking the entry and exit, of the port would have a major negative impact to the city, as well as the internal trade corridors that it services, such as the Gauteng Inland Ports.

1.2 Statement of the problem

According to Lewis (2017), South Africa has consistently remained one of the emerging economies within the African continent. In other words, this position is to an extent, attributable to the contributions of various segments of the economy, which have continued to play a crucial role in sustaining the needs of consumers, and contributing to the South African economy annually (South African Revenue Services, 2016). However, among these key segments of the economy is the South African transportation factor in the Supply Chain, particularly the seaport transportation system

engendering substantial revenue for the country, and consequently providing potential employment opportunities for the unemployed (Fedderke & Szalontai, 2012).

However, despite its significant contribution, South Africa's seaport transportation system faces varied challenges, which have continued to hamstring this important sector from realising its full potential (Haimes, 2014). Seaports have been additionally compromised by several security threats, especially in its SCM functions of conveying and delivering goods and services (Lewis, 2017).

The ascending concern on the international scene about the security of Supply Chain and Logistics functions, given the danger posed by potential terrorist undertakings, regional and national crime, and other ill-fated crimes, such as smuggling and piracy, have further heightened the urgent need for effective security measures in securing the movement of goods and services, and preventing illegal human movements and trafficking of illegal substances. Thus, the need for protecting seaports as a means of transportation for the safety of human lives, and increased revenue generation for the country become fundamental (South African Revenue Services, 2016).

Furthermore, the dearth of the effectiveness of the port's functions and activities, is potentially greatly hindering the activities of a Customs Authority, for proper accountability checks of all the goods entering the different ports of South Africa, causing a big effect on South Africa's revenue generation (Holmstrom, 2008). In order words, the necessity to ensure secure Supply Chain functions, devoid of security threats and attacks, has been at the front call of institutions and practitioners. While this is known, the crux of the study will be to assess the impact of global security compliances within the Supply Chain, coupled with the focus on security as administered by Customs Authorities.

Customs Authorities globally are implementing measures at ports of export to identify security threats before goods are shipped out of the country, known as the paradigm shift. (See diagram below). In the past few years, what we saw was a paradigm shift in supply chain security. Traditionally, security checks started with a single intervention by customs at import location, but it ha now moved o intervention at export locations, as in the case of the Container Security Initiative (CSI) programme.

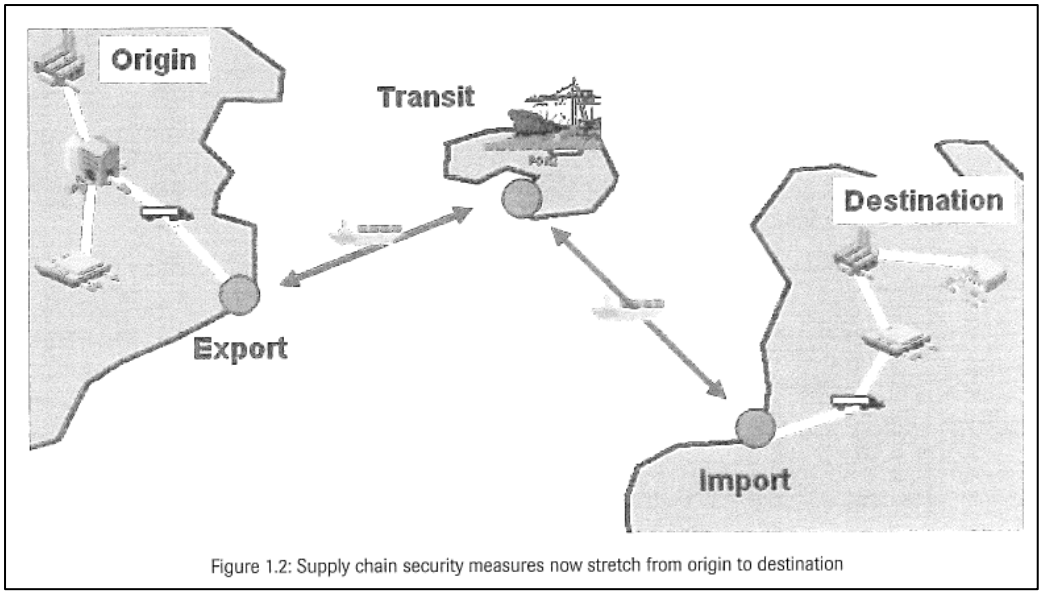


Figure 1.2: Supply chain security measures now stretch from origin to destination

Source: The Practitioner's Definitive Guide: Safety & Security by: Singapore Logistics Association

The supply chain is further tightened by the wider security coverage at a country's sea and air borders, as in the ISPS and ICAO requirements, in addition to the traditional tight security at land borders. The security net has been cast even inland, so that we are now looking at end-to-end security measures – from the point of origin to the final point of deconsolidation of goods. Making the entire supply chain secure is a particularly daunting and massive challenge because of the diverse modes of transport and intermodal operations involved.

1.3 Research Objectives

The main objective of the study is to understand the impact of SCM initiatives on security measures. The specific objectives of the study are to:

1. Provide a clearer understanding of the need to facilitate legitimate Supply Chain Management functions for improved security measures in Transnet Port Authority.
2. Identify the likely factors threatening free and secure movement of goods and people, in compliance with accepted global travel documentation.
3. Explain the role and impacts of the Customs Authority and its emerging aspirations towards modernisation in line with global standards.
4. Understand Transnet Port Authority standards in enhancing trade facilitation and the South African economy.
5. Make recommendations as may be deemed appropriate for both Transnet and the Customs Authority.

1.4 Research Questions

The following research questions shall be investigated in this study:

1. What are the required security-related measures to facilitate legitimate Supply Chain Management functions?
2. What are the global and national developments in this arena?
3. What are the factors which may threaten the secure and free movement of goods, which comply with global norms?
4. How effective is the standard of security practice of Transnet Port Authority in enhancing trade facilitation and the South African economy?
5. What are the security practice and compliance in South African Ports and dual security control of threats in tandem with the Customs Authority?

1.5 Justification of the study

The relevance of this study is precisely supported by the legislation of the new SARS Customs Control Act 31 of 2014. The purpose of the act is to provide customs control of all vessels, aircraft, trains, vehicles, goods, and persons entering or leaving South Africa and prescribes the operational aspects of the system and offer the following benefits:

- Simplified customs administration and speedier processes.
- Terminology that is clear and in plain language which follows global terminology. This will assist multinational companies in speaking one global trade language across their business.
- The proposed customs acts, Control Act 31 and Duty Act 30 of 2014, are designed in a logical and systematic way, with topic-specific chapters which can be easily followed.
- Flexible warehousing and manufacturing options, which will enhance South Africa's role as a distribution hub and stimulate industrialisation respectively.
- The 2014 customs acts also support the objective of the National Development Plan to promote exports and business competitiveness, stimulate domestic manufacturing and support small, micro, and medium-sized enterprises (SMMEs).

The laws vary the remedy of the motion of goods throughout the Southern African Customs Union (SACU), which is the oldest customs union within the world. International conventions, finest practice, globalisation, and expertise have assisted in giving the South African customs legislative framework

an update. The new Customs Control Act (no. 31 of 2014) aims to set up a world-class customs management entity that meets worldwide standards, best practices, and technology. The 2014 Customs Act is aligned with the Constitution and it additionally takes into consideration the revised Kyoto Convention, and the SAFE Framework of Standards to Secure and Facilitate Global Trade (SAFE Framework). It aims to harmonise, and provide safety and facilitate the worldwide commerce framework. The 2014 Customs Act provides for an end-to-end supply chain visibility for Southern African income providers (SARS) through advance cargo reporting, improved seal provisions and requisite digital communications and notifications.

Emergent security issues concerning the handling of goods and services through effective SCM functions have continued to be at the front of the policy agenda the world over. These concerns have continued to gain interesting attention, with little or no solutions put forward to ensure the security of humans and goods through SCM (Holmstrom, 2008). With this, the current study is justified and endorsed on many grounds. First, the impetus for this study is motivated by the sparsity of academic research work on the impacts of SCM initiatives on security measures, especially concerning Transnet Port Authority. Secondly, the timing of this study (2021) expressly justifies its necessity.

The development and improvement of Customs-to-Customs network arrangements to facilitate the smooth flow of goods across safe foreign trading supply chains are the key thrusts of the SAFE System. This network agreement would, inter alia, result in the sharing of timely and reliable information that will bring customs administrations to more efficient positions to manage risks. In such conditions, the SAFE Framework also allows for reciprocal acceptance of controls. The introduction of this tool would enable Customs Administrations to take a wider and more detailed view of the global supply chain and to create opportunities to reduce overlapping and various reporting requirements.

The SAFE framework would enable customs administrations to meet the complexities of the current international trade climate by putting in place the building blocks for the reform and modernisation of customs. The SAFE framework has also been flexibly designed to enable customs administrations to operate at various speeds. This would make it easier for customs administrations to enforce it in compliance with their own specific stages of growth, circumstances, and specifications.

The study seeks to engender deep discourse on how best to improve the security measures of seaports with regard to Supply Chain functions. In other words, the study, through empirical output, hopes to contribute to the ongoing discourse of ensuring the security of ports with reference to SCM activities. A dual relevance of the study will also tend to engender contributions to port operations and security, specifically through the lens of the International Ship and Facility Ports Security Code (ISPS).

Therefore, the study hopes to stimulate ship security plans that will reassess the commitment of Transnet Port Authority to committed values and best regulatory practices. For instance, the following ISPS Security Code will be examined and the appropriate relevance applied to this study.

- Security Level 1: At this stage of ISPS security level, the study anticipates to uncover the different levels of threats mitigating the normal operations of Transnet Port Authority.
- Security Level 2: The study equally envisaged to proffer measures to the security threats that have become visible to the operation of Transnet Port Authority.
- Security Level 3: The study is expected to suggest measures that could eliminate security threats and incidents that are already threatening the operation of the Transnet Port Authority.

In June 2014, in the presence of WTO Director-General Azevêdo, the WCO Council launched a strategic initiative to support trade facilitation, namely the WCO Mercator Programme. The Programme better positions the WCO to consolidate and promote its efforts in the area of trade facilitation support under a specific new branding. This support is aimed at assisting WCO Members worldwide to implement trade facilitation measures by using core WCO instruments and tools, such as the Revised Kyoto Convention (RKC), at the national, regional and global level, thereby also supporting various regional integration efforts (Ndonga, Dennis & Liza, 2018).

The WCO Mercator Program is pointed toward helping governments worldwide to execute exchange assistance gauges quickly and in an orchestrated way by utilising centre WCO instruments and devices, like the RKC, while guaranteeing network at borders and along global exchange supply chains, consequently giving a combined stage to propelling the smooth progression of the merchandise being exchanged throughout the planet (World Customs Organisation, 2014). With an abundance of ability and involvement with worldwide Customs specialised help and limit building, including an organisation of licensed specialists available to its and thorough contributor commitment systems, the Mercator Program offers customised help for carrying out exchange assistance measures. In light of a long-standing history of collaboration with the WTO, other worldwide associations and the private area, the Mercator Program goes about as a significant vehicle for organising the requirements and needs of every concerned partner (Ferdinand, 2020), that implements the objectives of the WTO Trade Facilitation Agreement.

1.6 Security at the global level

The United Nations (UN) plays a role in ensuring countries improve their supply chain security. The United Nations Conference on Trade and Development monitors and reports on important

developments relating to maritime and supply chain security and, as appropriate, conducts research on relevant topical issues. Similarly, towards ensuring global security, the role of the UN remains fundamental. For example, with her sixty years of establishment, it is important to state that the UN structure and functionalities are more rationalised, such that its workings are now more effectively coordinated. However, it is important to confirm that the UN remains an institution arranged for a different epoch, as a large chunk of her activities has not been able to engender global security (Dorn, 2009). In other words, to offset these challenges and many more, the UN must work towards adjusting its workings and practices for possible global security.

The concept of global security can be conceptualised as the absence of danger to the world at large (Fidler, 2010). Specifically, there have been several contentions for the replacement of "global security", with the words "national security" (George & Whatford, 2007). This was advanced in order to capture the discourse of security, at a global, rather than a national level.

Several debates have equally exuded the necessity of security to extend well beyond the traditional discourse of military security and protection to comprise other related issues of political, social, environmental, and ports security and safety, among others (Goold, Loader & Thumala, 2010). With evidence of global threats and insecurity, the world over, it is fundamental at this time, to build a global agreement with respect to these issues, while the parties involved should enact a policy framework for the control and maintenance of global security.

To do this, it is needful to state that the cooperation of international organisations will become increasingly important for the realisation of these goals, specifically at the global level. Due to the improper use of shipping containers, it is critical that careful control and inspection of the transferred cargo is conducted (Pollara et al., 2015). That is why port security is crucial in every country. The factor of protecting the supply chain for foreign trade has contributed to the further development of Customs which assist in the protection. Supply chain security management has fast become a boutique speciality skill set in private and public sectors. A robust and secure supply chain ensures the integrity of the products and cargo in that chain prior to delivery to the end customer.

Redefining the discourse of global security has recently been given little attention within the framework of maritime industry (Dorn, 2009). Specifically, efforts towards revamping a strategy agenda, however, are more linked with redefining the policy schedules of nation-states than the concept of security in itself (Fidler, 2010). Most often, these policy agendas take the path of proposals with high attention given to such issues including economies, environment, drug, and social injustices, with little attention devoted to the security of ports and its activities (Dorn, 2009). In other words, the

contents of these proposals are fervently strengthened with a blend of normative contention with respect to the group of people to be protected, and experimental arguments with respect to the nature and magnitude of dangers (Goold, Loader & Thumala, 2010).

Talking global security within the constructs of redefining it since the end of the Cold War, one could as it was considered to question the fact that whether security should be understood or described as a deserted concept. To be sure, two main reasons have been advanced for this position. Firstly, security, especially within global space has been used to validate the suspension of civil liberties and other war like crisis (George & Whatford, 2010). Therefore, despite the outbreak of recent studies, it is evidently appropriate to contend that security as a concept within the domain of global security has received far less scholarly consideration than it deserved, especially within the maritime structure and workings (Fidler, 2007). Second, it is equally appropriate to argue that most of the scholarly works on security has not devoted attention to conceptual analysis of maritime and port threats (Goold, Loader & Thumala, 2010). Put together, maritime and ports security from the lens of global security has not received the desired attention as compared to the concept of justice, freedom, and other global issues (Levitsky, 2013).

1.7 The September 2001 Terrorist Attack (aka 9/11)

The September 11 terrorist attacks that took place in the United State of America (USA) is unquestionably the most well-known act of terrorism right from the inception of terrorist attacks the world over (Hagopian & Mainwaring, 2014). The attack in itself ensues with the question of safety of lives and properties of the US citizens, particularly within the confines of their borders and country (Department of Homeland Security or DHS, 2017). Before the occurrence of this attack, many Americans had no idea of what terrorist attacks looked like within the country's territory (Hettne, 2002). Specifically, the majority of the US agencies, especially those confined within local and domestic routine were reported to have little or no prior knowledge of terrorist attacks (Hettne & Fredrik, 2006; Thibault., Brooks & Button, 2006).

Previously the closest attacks or terrorist experience Americans had witnessed were the two major airplanes hijacking that occurred in 1970's and 1980's (Siteanu, 2013; Wuthnow, 2010). Again, what can be considered as one of the close incidences in terms of terrorist attack in the US up until the occurrence of the 9/11 was the event that characterised the 1993 bombing of the World Trade Centre by a group of Islamist terrorist which culminated into an explosion that saw thousands of people injured with six casualities (Shin, 2017). Similarly, the 9/11 attacks were an influential event in US history that perpetually changed the way governments the world over have come to conceive the

probable safety of the USA, along with the efficacy of her domestic security measures, law enforcement, military, and other intelligence agencies (DHS, 2017).

The outcome of this attack consequently led to high outline of government investigation to probe into the reasons for the attack with possible recommendations to avert future occurrence (The 9/11 Commission, 2004). Thus, one of the vital recommendations proffered by the 9/11 Commission was the establishment of the Department of Homeland Security (DHS) saddled with the mandate to ensure future possible attacks are well controlled and avoided (DHS, 2015). The DHS comprised stakeholders from 22 different state departments and organisations. The creation of this new government full-fledged agency has greatly changed the response tactics of other small government agencies to possible terrorist attacks in the US (DHS, 2015).

One of the main factors that gave success to the 9/11 terrorist attack was the ineffectual communication and deficiency of information distribution between government agencies, especially law and intelligence outfits (DHS, 2017). For instance, as at the time the attack occurred, there were too many red lines in operation that have been argued as hindrance preventing the sharing of information among intelligence agencies for effective responses (Hafetz, 2015). To put this into context, a handful of these rules and guidelines were established as a result of the aftermath of the Cold War. For instance, during the Cold War, it was reported that both the law enforcement and intelligence outfits worked in alliance in conducting domestic intelligence functions (Richardosn & Snaddon, 2015).

In contrast, however, during the 9/11 attack, many civil rights were violated as a result of how these agencies spied on US citizen with too many unethical intelligence practices (Shin, 2017). The manner and procedure by which the terrorist attack of 9/11 was initiated has engendered severe consequence on travellers. Specifically, the effect the attack had on airline and airport security has been the most devastating of all. Consequently, this has led to increased airport security which has thus resulted in compulsory earlier arrival at the airport, with tauter and long security checks and increased waiting time at the tarmac (Lee & Whang, 2013). To be sure, included in this arrangement is increased security threats across seaports the world over (Hogopian & Mainwaring, 2014). To place appropriately, concerns about air travel safety are no doubt important to all and sundry, since it has been repeatedly demonstrated to us by terrorists that the loss of lives can be swiftly activated by the hijacking of an airline. However, the real intimidations to global transportation and security reflect a departure from air related attacks, as attacks on maritime activities seem to pose more threats in the real sense (Schiele & Krabbendam, 2013).

While the forecasts of terrorism impact on the world's marine ports and activities may appear to reflect little implication to an average citizen, they are distance from irrelevance when it comes to recognising the role of maritime in world trade facilitation (Hettne, 2002). The verity is a large number of the international trade community is not adequately briefed with respect to US and other allied national security measures for maritime traffic system (MTS). This brings to mind the argument that we would never come to terms with understanding the implication of destruction coupled with the loss of human lives engendered by MTS (Schiele & Krabbendam, 2013). In other words, the main terrorist threat can be understood from the lens of major attacks on world vessel within the confines of a port (Richardosn & Snaddon, 2015). For instance, Airfreight constitutes only about 0.4 percent of US intercity carriage, while domestic intercity waterborne cargo constitutes over 27 percent of the overall domestic freight (Norman & Janson, 2014).

The cost of a terrorist attack on the supply chain can be potentially astronomical. For instance, in a worst-case scenario, involving the explosion of a weapon of mass destruction (WMD) at a port estimates conducted for the US Department of Homeland Security, put the cost of the resulting port closure at a staggering US$1trillion, while, in a less serious scenario involving a 12-day closure following the discovery of an undetonated WMD, the estimated cost would still be a colossal US$58billion.

For example:

The Munich Massacre (1972) – occurred during the 1972 Summer Olympics in Munich, West Germany when members of the Israeli Olympic team were taken hostage by the Palestinian organisation "Black September", a militant group with ties to the late Palestinian leader Yasser Arafat's Fatah organisation. By the end of the ordeal, the group had killed 11 Israeli athletes, and 1 German police officer.

Archille Lauro Hijacking (1985) – on 7 October 1985, four heavily-armed terrorists representing the Palestine Liberation Front (PLF), hijacked the Italian cruise Ship Achille Lauro, carrying more than 400 passengers and crew off Egypt. The hijackers demanded that Israel free 50 Palestinian prisoners. To prove their determination, the hijackers killed a disabled 69-year old American tourist and threw his body overboard, together with his wheelchair. After a two-day drama, the hijackers surrendered in exchange for a pledge of safe passage but, when an Egyptian jet tried to fly the hijackers to freedom, US Navy F-14 fighters intercepted and forced it to land in Sicily. The terrorists were taken into custody by Italian authorities.

Sarin gas attack on the Tokyo subway (1995) – on 20 March 1995, was an act of domestic terrorism perpetrated by members of cult group Aum Shinrikyo. In five coordinated attacks, the conspirators released sarin gas on several lines of the Tokyo Metro, killing 12 people, severely injuring 50 and causing temporary vision problems for nearly 1 thousand others.

Oklahoma City Bombing (1995) – was a domestic terrorist attack on 19 April 1995, aimed at the US Government, in which the Alfred P Murrah Federal Building, an office complex in downtown Oklahoma City, Oklahoma, was bombed by 27-year-old Timothy James McVeigh, using a vehicle bomb. The attack claimed 168 lives and left over 800 people injured.

World Trade Centre's Twin Towers (11 September 2001) – was arguably the most widely known act of terrorism as when 19 terrorists affiliated with Al-Qaeda hijacked 4 commercial passenger jet airliners and crashed two of them into New York's World Trade Centre, and one into the Pentagon in Arlington County, Virginia in the UA. As a result of the attacks, both of the World Trade Centre's Twin Towers, completely collapsed and nearly 3,000 people died in the attacks.

There are many faces of terrorism – people tend to think of terrorism as brutal and senseless. Brutal it is, no doubt, but senseless it is not. Although the nature of the acts varies widely from the use of kidnapping and extortion, to guns and bombs, they are neither spontaneous nor random.

The tactics of terrorists are intended to be spectacular. The greater the spectacle, the greater the fear and intimidation generated. In the words of Mr Brian Jenkins, a senior advisor to the President of the think-tank RAND Corporation, and one of the world's leading authorities on terrorism**,** "Terrorism is theatre."

1.8 Structure

The structure of the thesis will be as follows:

Chapter 1: Introduction

Chapter 2: The impact of security in the seaports

Chapter 3: Global security measures of customs

Chapter 4: International best practices of ports operations

Chapter 5: Recommendations and conclusion

CHAPTER TWO: THE IMPACT OF SECURITY IN THE SEAPORT

2.1 Introduction

The debate relating to how Supply Chain Management (SCM) initiatives have been employed as a security measure to an extent has not allured much research exertions. The crux of this chapter is to explain and synthesise related arguments with respect to SCM initiatives and security measures. To start with, the concept of literature can be explained as a vital aspect of the research process that engenders important contributions to the entire research (Saunder, Lewis & Thornhill, 2009). It is that aspect of the research process that gives empirical and theoretical direction to the research problem (Wilson, 2010). In other words, on the one hand, issues reviewed under this chapter are those that neatly capture the range of empirical discourse identified from peer-reviewed journals and other non-empirical materials. On the other hand, a theoretical framework is explained as the constellation of theories employed to guide the researcher to have a comprehensive understanding of the research problem (Sekeran & Bougie, 2016). To be sure, the utility of a theoretical framework in a study is clearly to explain the research problem, while guiding in the formulation of the research questions and objectives (Sekeran & Bougie, 2016). Precisely, a theoretical framework is equally employed in directing the best research methodology for a study (Saunder, Lewis & Thornhill, 2009).

Therefore, this chapter will discuss the following themes:

- The South African economy in brief through the lens of the seaport sector of the economy and a conceptualisation of SCM.
- SCM function and security measures; factors threatening the free movement of goods, and policy structures and standards in enhancing trade facilitation.
- The last section of this chapter explains the relevant theoretical framework underpinning the study.

2.2 The South African Economy through the lens of Seaport Economy Sector

The focus of this section is to explain the growth and pitfalls of the South African seaports as a cog of the South African economy. This is vital, in order to position the current thesis towards understanding the trends and activities of this especially important sector of the South Africa economy. However, to do this, it is important to unravel and understand the trends and activities of the South African economy in order to gain a fuller understanding of the seaport economy sector of Africa's second-largest economy (Bandara, Nguyen & Chen, 2013).

While it is no doubt, the verity that South Africa has undergone a significant transformation with her ushering into democratic governance since 1994, it is interesting to state that the economic growth and the generation of employment have largely remained unchanged (Lee & Flynn, 2011).

More worrying, however, is the escalating high rate of unemployment. Be that as it may, the democratic elected government managed by the African National Congress has practically been able to create a stable, nonviolent, and racially equal society (at least to an extent) with some level of political freedoms amongst and between the citizens (Meyric, 2016). Similarly, economic policy and decisions have been conducted fairly well to an extent and on several occasions, South Africa has been rated as the largest or second-biggest economic state in Africa (Lee & Flynn, 2011). Unfortunately, several political and economic policy initiatives deployed to address the inequalities of the past decades have not been largely implemented to transmute into a working and booming South Africa, in terms of economic growth. The most dreadful aspect of this economic outlook is the puzzle pertaining to unemployment (Lee & Flynn, 2011).

South Africa's unemployment rate as of the first quarter of 2018 stands at 27.5 percent in terms of those who are unemployed (Stat SA, 2018). This figure represents one of the highest unemployment rates in the world. South Africa's unemployment has been increasing right from the inception of the democratic transition. For instance, the South Africa unemployment rate has been witnessing a drastic increase from a low 13 percent since 1993, shortly before the transition to a democratic government (Kings, 2019). Expectedly, this tragedy of unemployment is no doubt more evident among the young and black population in general (Bandara, Nguyen & Chen, 2013). In other words, it has continued to pose a significant threat to the firmness of South African democracy (Brooks & Cullinane, 2017). South Africa as a nation does not have its own flat-bearing fleet. This could be used as an opportunity for future employment. Nevertheless, we cannot, as a nation, afford that our mainly import-reliant trade imbalance, is further hampered by the threat of security where a disaster could close the ports of entry into South Africa.

Having delved briefly into South Africa's economy, the rest of this section will be devoted to discussions on South Africa's seaport economy. To start, the South African seaports are no doubt one of the vital revenue generation sources for the country (Kings, 2019). South Africa is positioned along one of the busiest international seaport paths. Thus, this location is crucial to international maritime transportation, such that its geographical position presents a massive opportunity for investment in the maritime economic sector. In terms of economic contribution, the South African maritime economy and related supporting services such as cargo transportation comprise the biggest revenue generation base for the country.

For instance, only the input derived from port operations can be linked to measuring the net contribution of the sea-port economy sector to the South African national economy (Kings, 2019). Cargo and related seaport services, as seen in the global supply chain, are intertwined with related services such as freight forwarding, warehousing, packaging, and processing, SCM and other associated maritime activities.

The Durban Port, for instance, is tagged as the business seaport in Africa (Bandara, Nguyen & Chen, 2013). The number of volumes from the Durban port has continued to increase over the years due to the increasing number of automobiles exported through this seaport, particularly by BMW (Gumede, 2013), hence it is unarguably the largest exporter of the motor vehicle industry in South Africa and exported approximately 700,000 automobiles in 2018. A growth showing an increase of 7.2 percent over the previous year (Bandara, Nguyen & Chen, 2013). The Durban port employs over 6,200 people, interestingly, this figure is expected to rise sporadically after the port expansion (Meyric, 2016). The Richard Bay's port is the busiest port in South Africa by size and represents the top-two coal-handling ports in the world. While the Richard's Bay port particularly focuses on cargo handling, the Durban port focuses more on general cargo (Kings, 2019).

The Cape Town seaport of South Africa is strategically located in the southern midpoint of the country and handles cargo from South Africa to South America and other western countries, North America and Europe (Kings, 2019). The Cape Town seaport handles approximately 3,161 vessels cargoes in a year. All the international voyage vessels are employed to dock at the Cape Town seaport being the first port of call.

The Port of Mossel Bay, otherwise called Mossel Bay Harbour, is arranged in the Western Cape, somewhere between Cape Town and Port Elizabeth. While it is surely the smallest business harbour along the South African coast, it assumes a functioning part in both the oil and fishing industries. Despite being small, the Port of Mossel Bay is a significant supporter of the economy of the Garden Route and Southern Cape says Nico Walters, General Manager: Strategy at Transnet National Ports Authority (TNPA).

The immense potential of small ports and harbours to add to economic development is recognised in government's quest for utilising little harbours to draw in interest in state waterfront sea, foster framework and properties, develop organisations, make occupations and rearrange abundance. The Port of Mossel Bay is among the ports reserved for venture under Operation Phakisa. The Operation Phakisa strategy, intended to open the sea's economy, has brought about significant redesigns and new offices for transport fix just as the advancement of offices to serve the oil and gas industry, to guarantee that South Africa draws in much of this business. The improvement of the Small Harbours and State Coastal Property Development unit (SH&SCPD), inside the National Department of Public Works is important for the Oceans Economy procedure inside Operation Phakisa (Engineering News, 2018).

Saldanha Terminal is the largest natural, deep-water port in the southern hemisphere, situated 140 km northwest of Cape Town. It started operating in 1976 exporting iron ore to the Middle East, establishing itself as a bulk facility. Transnet Port Terminals Saldanha consists of two key Terminals: namely the Iron Ore Terminal, which has the capacity to handle up to 60 million tons of iron ore, whilst the Multi-Purpose Terminal has the capacity to handle up to 8.5 million tons of breakbulk Cargo (Transnet, 2017). In July 2014, the South African government launched the 'Phakisa' strategy to unlock the economic potential of South Africa's oceans stylised as the 'blue economy' with Saldanha Bay Port as part of the strategic plan to create jobs and alleviate poverty in the West Coast region (Lesley & Ferreira, 2016).

The Port Elizabeth terminal is midway along the South African coastline and it supports surrounding areas such as the Eastern Cape. Main cargo activities include automotive CKDs and parts, motor vehicles, and a range of agricultural products (Gumede, 2013). In other words, the terminal offers a range of value-added services such as storage, packaging, and other logistics functions. Currently, the terminal handles approximately 1,272 ships with a total gross capacity of 25,756,823.

The Port of Ngqura is deliberately situated on the worldwide east-west exchanging course; this deep-water port offers worldwide compartment transportation and other top-notch port offices to organisations arranged in the adjoining Coega Industrial Development Zone, and past. The Coega Industrial Development Zone gives the rear of-port offices and framework to the Deepwater Port of Ngqhurha. This makes for consistent joining among landside and marine framework bringing about calculated and operational effectiveness. Development of the Port of Ngqhurha is probably the greatest venture of its sort on the landmass and one of the biggest attempted in post-politically sanctioned racial segregated South Africa.

The East London Terminal is South Africa's only river port, fully equipped and trading with the world's leading automotive brands. The terminal now trades in coal. The East London Terminal (MPT) consists of a Ro-Ro terminal, the largest grain silo on the South African coastline, break-bulk and containerised cargo facilities. The NOSCAR rated Ro-Ro facility includes a sophisticated multi-level car terminal. The East London Terminal was established in 1963 and currently employs over 120 people (Transnet, 2017).

Put together, it is clear from the above that the South African seaports have a huge potential that could upturn the economics of the country for the greater good. The next section of this chapter will be devoted to discussions on the conceptualisation of SCM.

2.3 Supply Chain Management: a conceptualisation

Security is extremely important for all businesses. Lack of security could lead to the business being vulnerable to attacks (Hinsta, Gutierrez, Wieser, Ari-Pekka & Hameri, 2009, p. 15). Supply chain security is the part of SCM that focuses on minimising risk for the supply chain, including logistics transportation management systems. It combines traditional supply chain management practices with security measures, allowing the protection of the business against threats to the supply chain. This should be a high priority for an organisation as a breach within the system could damage operations. Delivering products that have been tampered with or unauthorised could be harmful to customers and lead to unwanted lawsuits (William, Leug & LeMay, 2008, p. 255). An example of supply chain security is screening all of the contents within a cargo that is being shipped. Securing the cargo in transit or storage with the use of access controls, alarms, locks, surveillance, or tamper-proof seals. For the importance of Supply Chain Management security to be understood, a conceptualisation of SCM needs to be discussed to bring more understanding.

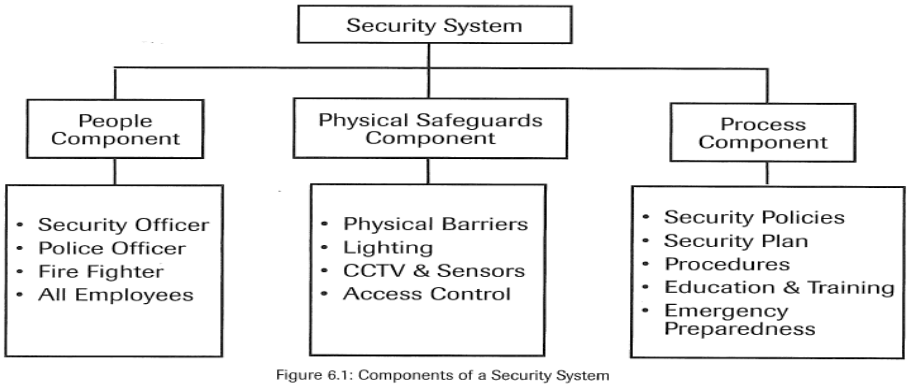


Figure 6.1: Components of a Security System

Source: The Practitioner's Definitive Guide: Safety & Security by: Singapore Logistics Association

The subject of SCM no doubt has recently received great attention within both the corporate world and the academia. This feat of course is not far-fetched. For instance, the rising influence of globalisation which has resulted in the world becoming a "single village" can be connected to this claim. In other words, globalisation aided by technology has increased the means of conveying goods and services from the producer to the end consumer and by extension gave great recognition to the subject of SCM. The concept of SCM particularly has received extensive attention in an increasingly flexible and competitive labour market (Chen & Gong, 2013). The subject of SCM is a much complex subject to comprehend due mainly to the array of players across the divergent functions of an organisation (Billington, 2010).

Notwithstanding this, it is important to add that the subject of Supply Chain Management neatly cuts across disciplines such as marketing, logistics, information management and operations management among other allied disciplines (Chen & Gong, 2013).

According to Billington (2010), SCM has been greatly confused with other elements in the SCM phenomenon including inventory management, process integration, and to an extent, neglecting the fuller scope of SCM.

Therefore, there are copious definitions of the concept of SCM. To start with, Mentzer (2012) defined the concept as the coordination and integration existing between different partners participating in diverse activities that are related to the production of goods and services. Accordingly, the motive of course is improved organisational efficiencies, quality, and efficient customer services relationship through robust collaborations (Chen & Gong, 2013). The term SCM is defined by Harrison (2005) as the chain of facilities and distribution alternatives that complete the purpose of obtainment of products, the conversion of these products for immediate use, and the distribution for the customers' consumption. Making sense from this definition, the subject of SCM can therefore be conceptually explained as the transformation of products into finished use involving different agents or departments of an organisation. Furthermore, Billington (2010) rightly explained SCM as the incorporation of activities that are taking place among other networks of activities requiring the acquisition of raw materials to be transformed into intermediate products and finished goods through an appropriate system of distribution.

In the opinion of Ellram (2007), the leitmotif of SCM is explained as the incorporation of vital business processes emanating from end-user through the suppliers providing the goods, services and the required services for customer's services added value, respectively.

In other words, this definition neatly aligns with Little (2010) who defines SCM as a system whereby an organisation seeks to provide the right mix of goods, in the right location, quantity, timing and best possible costs. Again, this definition clearly explains the variety of processes that needed to be integrated to have efficient and effective SCM. For instance, the right products, what to produce, and how to convey it to the audience must be clearly set.

Simchi (2010) defines SCM as a set of methods utilised to efficiently organise suppliers, producers, and other allied chains of production, in order to ensure that the commodities produced are distributed in the right mix of quantities, to the envisaged location and at the appropriate times for the need to lessen systems costs. Notably, SCM must be monitored so as to ensure fast, trustworthy and flexible customers' requirements. Ayers (2015) makes a distinctive case by suggesting that the subject of SCM comprises a comprehensive life cycle including physical, information, financial and knowledge acquisition which are prerequisites for the need to satisfy end consumers with effective and efficient products.

From this definition, it can be deduced that the complete SCM process covers a broad range of activities including manufacturing, transportation, and the marketing of physical products to the end-users. Therefore, the subject of SCM can be conveniently explained from three interconnected flows including the material flow, informational flow, and financial flow (Karunaratne, 2012). Put together, the combination of these flows makes the entire Supply Chain function seamless.

According to Closs (2011), SCM is concerned with all activities and movements from the external customers through to the management of all processes and activities that are prerequisites to provide the needed customer relationship and value-added advantage. Therefore, within the context of this study, SCM comprises all integrated management in an organisation throughout the entire chain of the organisation. In other words, it entails the combined process for the management of goods beginning from the supply point to the point of delivery and consumption. This contextualisation from the perspective of the seaport operation and security thereof connotes how goods are being managed from the point of manufacturing up until the point of delivery, such that the goods can be protected from attacks or other forms of terrorism.

Placing the subject within the context of South Africa, SCM can be rightly contextualised as the vital part that monitors all financial management processes by seeking to introduce all forms of international best practices. In other words, it bridges the breach between the outdated means of procuring goods and services, the introduction of conventional ways and patterns through which goods and services can be acquired for customer satisfaction (Vokurha, 2010).

Furthermore, SCM in South Africa is neatly guided by relevant legislation. For instance, Section 217 of the South African Constitution (1996) legislated that "the acquisition and other contractual obligation involving the acquisition of goods and services must be done in a fair, equitable, and transparent possible manner. Furthermore, Section 217 of the Constitution is foundational legislation in the Supply Chain Management system must be conducted compliantly in line with allowing for preference in the distribution of contracts as well as 'the protection of persons from unfair discrimination".

It must also be bore in mind that the supply chain presents continual challenges and changes, and therefore business and ports, and the role of the customs authority is meeting and addressing those challenges.

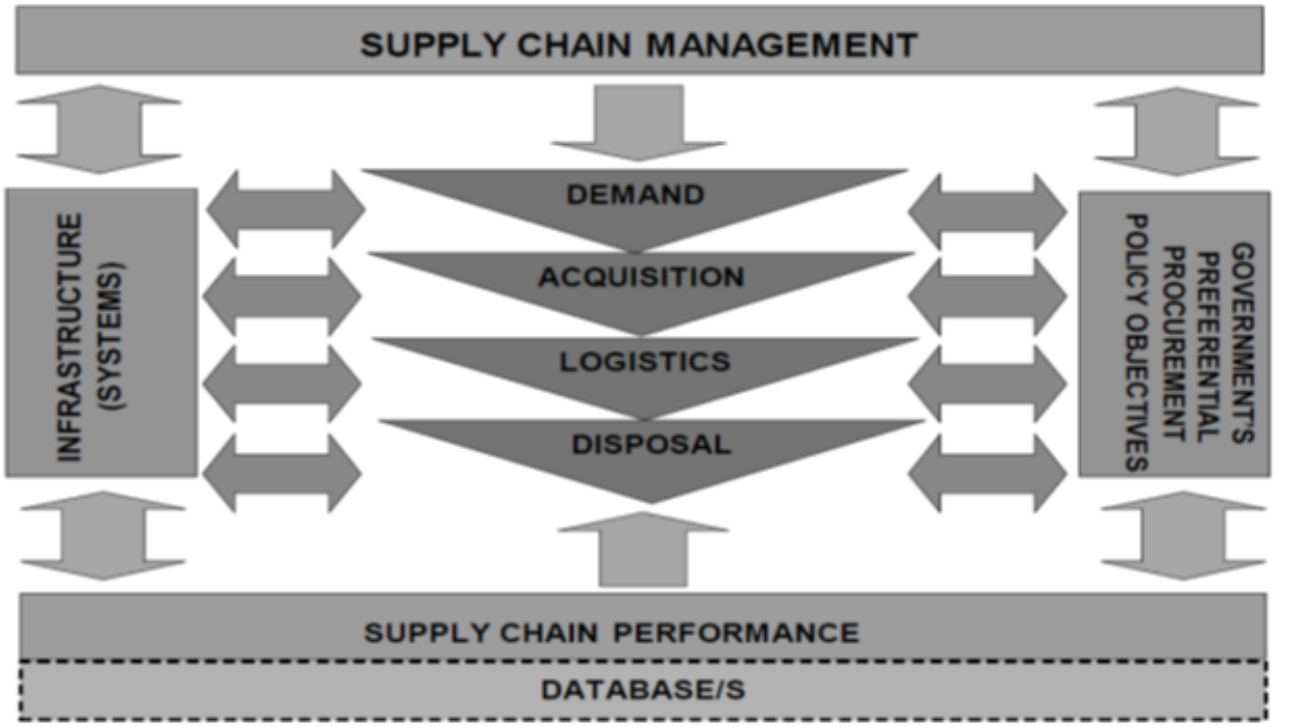
The development of SCM should ordinarily not be conceived as a specialised process, rather it should be seen as a basic planned business process (Chong, 2011), with the primary goal of replacing inventory with information in order to provide visibility, hence goods and services can be restocked quickly and arrive at their point of usage at the right time (Tan, 2002).

Specifically, the development of SCM was to upturn the traditional means of conveying goods and services for improved customer satisfaction. Furthermore, it can be inferred that SCM was developed as an alternative to improving customer satisfaction through enhanced quality and speed of delivery for cost maximisation (Vokurha, 2010). Therefore, it is unlikely that a single organisation would be able to attain this type of customer demand without the support of other organisations in the Supply Chain trust (Tan, 2002).

Interestingly, the concept of SCM has gone beyond a mere explanation of logistics activities, planning and control of materials within an organisation or between organisations (Vokurha, 2010). For instance, the concept has metamorphosed into explaining other strategic and organisational concerns.

Supply Chain Management has now transformed from the traditional means by which manufacturers supply goods to their customers. Lately, it has now become a system whereby customers now pre-inform their manufacturers how and when they want their goods delivered (Closs, 2011). To put it into context, the emergence of SCM has to do away with the inadequacies and surplus costs attached to the delivery of goods and services. Table 2.1 below shows a typical Supply Chain Management process, specifically within the context of South Africa.

Figure 2.1 South African Supply Chain Management Model



Source: National Treasury, 2005

2.4 Supply Chain Functions and criteria as related to Security Measures

The discourse of ensuring the safety of goods and humans at the seaport, especially through Supply Chains functions has remained at the front line of government and practitioners alike. Accordingly, the necessity for effective and efficient systems of port transportation is crucial for the survival of domestic and international business (Lee & Whang, 2013). In other words, the implementation of international standards for ensuring effective security measures in the transportation of goods and commodities is a critical element in a globalised and interdependent economy (Kumar & Hoffman, 2002). For Sheffi (2014), the necessity for organisations to operate under sensitive security measures and the need to always arrange for rapid recovery after terrorist attacks of ports is sacrosanct for business continuity (Hoffman, Schiele & Krabbendam, 2013). In a similar line of argument, Christopher & Peck (2015) argued that the challenge for an organisation is to be able to manage and moderate the risk of the Supply Chain by creating a more resilient SCM initiative. To make sense of this, the onus is on the management of organisations to set out modalities ahead for curbing the risk associated with smuggling, piracy, and other seaports attacks.

Moving further, a study conducted by Hoffman, Schiele and Krabbendam (2013) identified that the scourge of risk management has continued to be a bane in the Supply Chain functions due to the threat of disruptions caused by factors emanating from within the Supply Chain and other environmental factors. The authors emphasise further that the sources of these risks are greatly engendered from suppliers, customers, including others associated with natural disasters, political and economic dynamics, changes in technology trends and others connected to human behavioural dispositions (Hoffman, Schiele & Krabbendam, 2013). Richardson and Snaddon (2015) in their study found out that the unceasing competition within the seaport business is unconnected to the many puzzles threatening the security of doing business in this important sector of the economy. In another related study, Mikes and Kaplan (2013) identified the deficiency of buyer-supplier confidence and teamwork, supplier proficiency and relational relationship as the major puzzles threatening the security of Supply Chain functions.

For Norman and Jansson (2014), there is still a dearth of understanding on how to identify and evaluate the trade-offs between risk management practices and philosophies of SCM in order to achieve efficient security measures at all times. In support of this position, Hale and Moberg (2010) argued that planning for security measures might involve inventory management strategies. Thus, Lee and Whang (2013) advocate that the application of quality supervision values can further advance both the cost competence and security of Supply Chains for a robust relationship with suppliers, to appositely transmute to effective security measures.

Put together, the literature review has exuded that more in terms of security needs to be advanced for effective SCM functions.

Terrorist groups can be categorised in several ways, such as where they are from, where they operate, the weapons and tactics they use, and the targets they attack. One labelling that seems to work well is motivation, but even then, the motives of terrorist groups often do not fall into just a single category. These groups could sometimes be seen operating out of a combination of motives, such as political, religious and/or special interest.

2.4.1 Customs impacts and Port Security impacts

Customs are an entity or body responsible for regulating the movement of goods to and from a country (Liwen, 2015, p. 89). They are responsible for all imports, collecting tariffs, and preventing illicit goods from being smuggled into and out of the country. Regulations can limit the import or export of certain goods, depending on local legislation, and the customs agency enforces these regulations (Liwen, 2015, p. 89).

It is possible to view security in the global supply chain as conflicting with the goal of promoting foreign trade. Security is part of the conventional supply chain model and a driver of trade facilitation (Pourakbar & Zuidwik, 2018, p. 326). Previously, we would look at security risks as limited to theft or tampering. Today, there is the terrorist connotation[2].

The Supply Chain Security control are in place to seek supportive provisions amongst regulatory businesses and agencies. The aim is also to categorise security risks prior to the movement of goods. The next discussion section will highlight the difficulties regarding the cross-border environment at the United Kingdom ports. The institutional mechanism among private and public sector actors shaping cross-border procedures will be mapped out. The enforcement agencies are an integral thread within the supply chain to meet objectives such as identifying security risks.

On 1 January 2020, Incoterms 2020 ushered in a new era for the world's most essential terms for trade. Free Carrier (FCA) was revised for Incoterms 2020 to cater to a situation where goods are sold FCA for carriage by sea and buyer or seller, or either party's bank requests a bill of lading with an on-board notation (ICCWBO, 2020). FCA in article A6/B6 now provides for the parties to agree that the buyer will instruct the carrier to issue an on-board bill of lading to the seller once the goods have been loaded on board, and for the seller then to tender the document to the buyer. The former Delivered at Terminal (DAT) has been changed to Delivered at Place Unloaded (DPU) to emphasise that the place of destination can be any place and not just a "terminal," and to underscore the sole difference from Delivered at Place Unloaded (DPU) – under DAP the seller does not unload the goods, under DPU, seller does unload the goods (ICCWBO, 2020). Amongst the changes there are many Incoterms® Rules Articles which deal with the aspect of compliance to trade security measures. The following examples are cited:

Below as extracted from the ICC publication of the Incoterms® 2020 electronic book.

CPT (Carriage Paid To)

A4 Carriage

The seller must contract or procure a contract for the carriage of the goods from the agreed point of delivery, if any, at the place of delivery to the named place of destination or, if agreed at any point at the place. The contracts of carriage must be made on usual terms at the sellers cost and provide for carriage by the usually route in a customary of the type normally used for carriage of the type of goods

[2] Even though terrorism has been used since the beginning of recorded history, it can be relatively hard to define. Terrorism has been described variously as both a tactic and a strategy, a crime and a holy duty, a justified reaction to oppression and an inexcusable abomination. Obviously, a lot depends on whose point of view is being presented. A 1998 study by the United States Army found that there are more than one hundred definitions of the word.

sold. If a specific point is not agreed or is not determined by practice, the seller may select the point of delivery and the point at the named place of destination that best suits its purpose.

The seller must comply with any transport – related security requirements for transport to the destination.

B4 Carriage

The buyer has no obligation to make a contract of carriage

A7 Export/Import clearance

a) Export clearance

   Where applicable, the seller must carry out and pay for all export formalities required by the country of export such as,

   - Export license
   - Security clearance for export
   - Pre-shipment inspection: and
   - Any other official authorisation

b) Assistance with import clearance

   Where applicable, the seller must assist the buyer, at the buyer's request, risk and cost, in obtaining any documents and/or information related to all transit/import clearance formalities, including security requirements and pre-shipment inspection needed by any country of transit or the country of import

B7 Export/ Import clearance

a) Assistance with export clearance

   Where applicable, the buyer must assist the seller, at the seller's request, risk and cost, in obtaining any documents and/or information related to all transit/export clearance formalities, including security requirements and pre-shipment inspection needed by any country of transit or the country of export

b) Import clearance

   Where applicable, the buyer must carry out and pay for all formalities required by the country of import such as,

   - Import license and any license required for transit
   - Security clearance for import and any transit
   - Pre-shipment inspection: and

- Any other official authorisation

A9 Allocations of cost

The seller must pay:

a) All costs relating to goods until they have been delivered in accordance with A4, other than those payable by the buyer under B9.
b) Transport and all other costs resulting from A4 including costs of loading the goods and transport related costs
c) Any charges for unloading at the agreed place of destination but only if those charges were for the sellers account under the contracts of carriage
d) The cost of providing usually proof to he buyer under A6 that the goods have been delivered.
e) Where applicable, duties, taxes and any other costs related to export clearance under A7(a); and
f) The buyer for all costs and charges related to providing assistance in obtaining documents and information in accordance with B7(a).

B9 Allocations of costs

The buyer must pay:

a) All costs relating to goods from the time they have been delivered under A4, other than those payable, by the seller under A9.
b) The cost of transit, unless such costs were for sellers account under the contract of carriage
c) Unloading costs, unless such costs were for the sellers account under contracts of carriage
d) The seller for all costs and charges related to providing assistance in obtaining document and information in accordance with A5 and A7(b)
e) Where applicable, duties, taxes and any other costs related to transit or import clearance under B7(b); and
f) Any additional costs incurred if it fails to give notice in accordance with B10, from agreed date or the end of the agreed period for shipment, provided that the goods have been clearly identified as a contract goods.

FOB (Free on Board)

A4 Carriage

The seller has no obligation to the buyer to make a contract of carriage. However, the seller must provide the buyer, at the buyer's request, risk and cost, with any information in the possession of the

seller, including transport related security requirements, that the buyer needs for arranging carriage. If agreed, the seller must contract for carriage on the usual terms at the buyer's risk and cost. The seller must comply with any transport related security requirements up to delivery.

B4 Carriage

The buyer must contract at its own cost for carriage of the goods from the names port of shipment, expect when the contract of carriage is made by the seller as provided for in A4.

A7 Export/Import clearance

a) Export clearance

   Where applicable, the seller must carry out and pay for all export clearance formalities required by the country of export such as:

   - Export license
   - Security clearance for export;
   - Pre-shipment inspection; and
   - Any other official authorisation.

b) Assistance with import clearance

   Where applicable, the seller must assist the buyer, at the buyer's request, risk and cost, in obtaining any documents and/or information related to all transit/import clearance formalities, including security requirements and pre-shipment inspection needed by any country of transit or the country of import

B7 Export/Import clearance

a) Assistance with export clearance

   Where applicable, the buyer must assist the seller, at the seller's request, risk and cost, in obtaining any documents and/or information related to all export clearance formalities, including security requirements and pre-shipment inspection needed by the country of export

b) Import clearance

   Where applicable, the buyer must carry out and pay for all formalities required by any country of transit and the country of import such as:

   - Import license and any license required for transit;
   - Security clearance for import and any transit;
   - Pre-shipment inspection: and
   - Any other official authorisation

A10 Notices

The seller must give the buyer sufficient notice either that the goods have been delivered in accordance with A2 or that the vessel has failed to take the goods within the time agreed.

B10 Notices

The buyer must give the seller sufficient notice of any transport-related security requirements, the vessel name, loading point and, if any, the selected delivery date within the agreed period

The organisational frustration at the United Kingdom (UK) ports is that the management priorities in today's supply chains concentrate on value development and cost reduction (Christopher, 1992). Ultimately, any wasteful transaction costs would put companies at a competitive disadvantage (Porter, 1998). It should come as no surprise that all professionals involved in ensuring that products travel up and down the supply chain are especially vulnerable to the cost of transactions.

The cross-border environment of the UK has been described as a dynamic structure dominated by operational frustrations and subsequent transaction costs. Regulatory controls are not always considered to be consistent with organisational needs. This can lead to unnecessary transaction costs and inefficiency.

Some of the government inspectors have expressed concerns about laws and regulations. A port health officer, for instance, complained that he had to periodically review tinned tuna consignments from a reputable food importer because of regulatory inspection limits, although the public health danger was negligible from his point of view as compared to other food categories or forms of traffic. Traders and government inspectors have also identified instances where official controls, such as a veterinary inspection followed by a customs inspection and vice versa, have been uncoordinated. This raises questions as to whether this is due to the Authorised Economic Operator (AEO)[3] not being practised or observed. The same can be said about the statement pertaining to the RSA State Vet and SARS Customs lack of coordination.

The task of minimising transaction costs and meeting regulatory control targets is to consider how best to match the institutional structure with organisational criteria, such as those of enhanced protection. As set out earlier, it is for government agencies to make effective use of scarce compliance resources, strengthen border controls, expand controls up and down the supply chain, and ensure that trade continues. For companies, the management goal of SCM is about reducing costs and increasing value.

[3] All World Customs Organisation (WCO) member nations have committed themselves to adopting some version of an AEO system at some point in the future. The ultimate goal is a WCO-facilitated network of nations that mutually recognise each other's trade facilitation and supply chain security programmes.

Neither the company supply chain goals nor the regulatory regulation goals are likely to be served given the existing environmental uncertainty and operational overlap. Any real incentives by regulators to offset increased pressure tend to be thin. The resulting task is one of realigning a dynamic structure of regulatory bodies to meet the needs of stakeholders. This ultimately entails the full cross-section of traders and their intermediaries in an international market setting.

Global measures introduced by Customs are for example, the AEO. The Authorised Economic Operator (AEO) programme was officially launched in Europe on 1 January 2008. The EU hopes that this security initiative will benefit both importers and exporters by expediting clearance and increasing security for shipments entering or leaving the European Union. EU companies that obtain an AEO Certificate may receive priority treatment at European Customs, expedited passage through third country borders, and reduced entry/exit declaration documentation. They would also be given priority treatment during the resumption of trade following a security incident.

Some forms of business interests may be underrepresented or not represented at all in the existing institutional set-up, supported for instance by the studies by Verwaal and Donkers (2002; 2003) and Grainger (2007), which indicate that cross-border operations are subject to economies of scale. Traders and operators with larger operations are able to offset the mainly fixed costs associated with regulatory enforcement over larger quantities of trade. This suggests that certain smaller-volume traders are more likely to rely on intermediary providers and are less likely to invest in building their own enforcement capabilities.

However, as regulatory institutions are overhauled, updated, or modified, the economics are also evolving, as with the implementation of supply chain protection regimes. This creates new actors and can render other actors redundant or less necessary. Although this gives rise to concern (and resistance) among some interest groups, it also gives rise to creativity, the scope for reductions in transaction costs and increased resource utilisation.

In the United States, the US Customs Service is responsible for the customary duties of assessing admissibility, protecting, and collecting revenue, handling passenger and commercial traffic, detecting contraband and fraud, and the customs service has expanded over the years with the globalisation of the world economy and the US penchant for imports. The position of Commissioner of Customs shall be appointed by the President and shall serve as instructed by the US President.

The devastating events of September 11, 2001 changed several viewpoints and helped to strengthen the need for customs and trade to work in collaboration towards a fresh and mutual objective of securing terrorism from the supply chain. Soon after 9/11, the US Customs Service ceased to exist as

we knew it. A new name, US Customs and Border Protection (CBP), and a completely new set of goals and tasks were assigned to them. The number one role of the service was no longer protecting and collecting the revenue as it was when they were established. It was important to change CBP's expedient paradigm from compliance and regulation to engaging the trade in a collaboration. It was a dramatic departure and a great leap of faith.

CBP learned two crucial things quickly. More of awakening was the first. CBP was not aware of how a global or international supply chain actually worked; what knowledge was available, who the stakeholders were, what the mechanics and touch points were. Before 9/11, most of the inspectors and employees of the CBP just understood that a consignment had been presented at a port of entry into the US; and now their work included assessing admissibility and collecting duties. They knew very little about what had happened until the cargo arrived with the consignment upstream. CBP had an immense learning curve ahead and needed to obtain thorough knowledge of the intricacies and inner workings of a multinational supply chain quickly.

The second thing CBP discovered is that the best thing is what most legitimate businesses want to do. They are corporate citizens whose workers and clients in the neighbourhoods they represent, live, work and play. They have a vested interest in keeping their companies going and in keeping the society in which they work stable. CBP has found that often the private sector can do it much faster and, in many ways, cheaper and less costly than the government.

CBP recognised that businesses normally do the bare minimum to comply when you implement new rules or pass laws; on the other hand, the joint effort results in a more comprehensive and flexible program when you involve businesses in the spirit of collaboration. Today, as the most effective public and private partnership ever established, the CBP C-TPAT Program is celebrated. Both sides, CBP and trade, have eliminated their gaps in technical and enforcement issues to tackle common threats and compliance issues.

The USA also introduced additional security measures and legislation as per example below:

The Container Security Initiative (CSI) was launched in 2002 by the US Bureau of Customs and Border Protection (CBP), an agency of the Department of Homeland Security. Its purposes were to increase security for container cargo shipped to the Unit States. As the CBP put it, the intent is to "extend the zone of security outward, so that American borders are the last line of defence, not the first." CSI consists of four core elements:

• Using intelligence and automated information to identify and target containers that pose a risk for terrorism.

• Pre-screening those containers that pose a risk at the port of departure before they arrive at US ports.

• Using detection technology to quickly pre-screen containers that pose a risk.

• Using smarter, tamper-evident containers.

CBP has not drawn a sufficiently bright line of differentiation between C-TPAT members and non-C-TPAT businesses, or the known and the unknown, from a profit point of view. As first imagined, the initial concept of making C-TPAT a voluntary program for separation purposes did not succeed. In short, the idea was that if a large number of importers to the US agreed to take responsibility for and use their own assets to secure the supply chain of the company, the level of confidence in CBP would be increased, enabling them to reduce the number of inspections as a benefit of being in the program. Finally, while CBP seems transfixed these days on the identification and capture of data items, they have completely taken their eye off the intelligence ball; at least as far as trade is concerned. This may be a huge error and oversight.

Studies in this regard have shown the need for Supply Chain functions on the part of the government with respect to regulation, monitoring and evaluation functions. For instance, Briano's (2012) study highlighted four distinct government strategies of Supply Chain functions for ensuring effective security measures at seaport including customers, government pressure, implementation, and monitoring functions, respectively. The study further revealed that among these cohorts of Supply Chain Security functions, none of the strategies showed a significant relationship to security measures (Briano, 2012). Findings from this study, to an extent, clearly exude the South African government dilly-dally involvement in ensuring seaports security through appropriate SCM functions.

Reflecting from the above submission, William (2012) and Manuj and Mentzer (2010) separate studies showed a contrary result in terms of government role in ensuring the safety and security of seaports through robust Supply Chain policy and functions. Their separate studies explain that government and other international agencies have been very active at the forefront of ensuring the appropriate design of Supply Chain plans, regulations and other standards, while businesses and organisations are sanctioned to ensure the application of these measures in the design of their policies, strictly to ensuring the safety of seaports (William, 2012).

2.4.2 A brief introduction to the SAFE Framework in terms of Supply Chains

SAFE calls for the harmonisation of the criteria for advanced cargo information and the use of a standardised approach to risk management in order to counter threats. It established the Authorised Economic Operator (AEO) concept as a way of providing legitimate trade with a mechanism to obtain tangible benefits for their commitment to invest in and comply with supply chain security standards.

The concept would help avert the time-consuming accreditation processes in every country. Finally, the Healthy Standards System provides a clear recommendation for governments to apply state-of-the-art non-intrusive inspection technologies, which can improve protection while helping to discourage unwanted physical inspections.

The structure consists of four core principles, namely:

1. Advanced electronic data;
2. Risk management;
3. Outbound inspection; and
4. Business relationship.
    - Advance electronic information, harmonising the criteria for inbound, outbound and transit advance electronic information.
    - Risk management is committed to using a consistent approach to risk management to resolve safety risks.
    - Outbound inspection, preferably by non-intrusive inspection methods, of high-risk consignments being shipped.
    - Customs would offer incentives to organisations that meet minimum supply chain safety requirements and best practices in the Business Relationship.

In the next section, the foundations will be explored in detail.

Sub-heading 3.2, "The World Customs Organisation (WCO) and security measures", will explain the three pillars of the WCO SAFE Framework of Standards specifically. The three pillars of SAFE Framework; customs to customs network arrangement, customs to business partnership and customs to other government agencies cooperation. These are the strategic standards for the customs authority to achieve the dual objective of security and trade facilitation

However, other commentators have rightly alleged that one of the vital problems confronting government is the snag of appropriately defining and implementing satisfactory control procedures, which could improve security at seaport without further endangering business and trade in the long run (William, 2012; Christopher & Peck, 2013). Consequently, organisations need to invest sensibly in security measures and comply with the international regulations and control measures (William, 2012), and at the same time contribute efficiently to their Supply Chain efficiency (Christopher & Peck, 2013). In other words, the interaction between government and seaports organisations in ensuring the security of ports could be measured by whether government regulations will contribute to the development of standards and other policy agenda thrusts or not.

This needs to be further explored in SCM literature. Still discussing Supply Chain functions as a recipient for achieving effective seaport security measures, Christopher and Peck (2013) mentioned in their thesis that one of the ways of managing the challenge of security threats at seaports is to galvanise and manage Supply Chain risk through the creation of a more appropriate approach. The authors emphasised these approaches or needs:

1. The need to design resilient;
2. The need for high rate of teamwork;
3. The need for supports; and
4. The need for quick and fast response to security threats.

To gauge an appropriate circle of risk in addressing a business, the following diagram will assist in relation to security considerations.

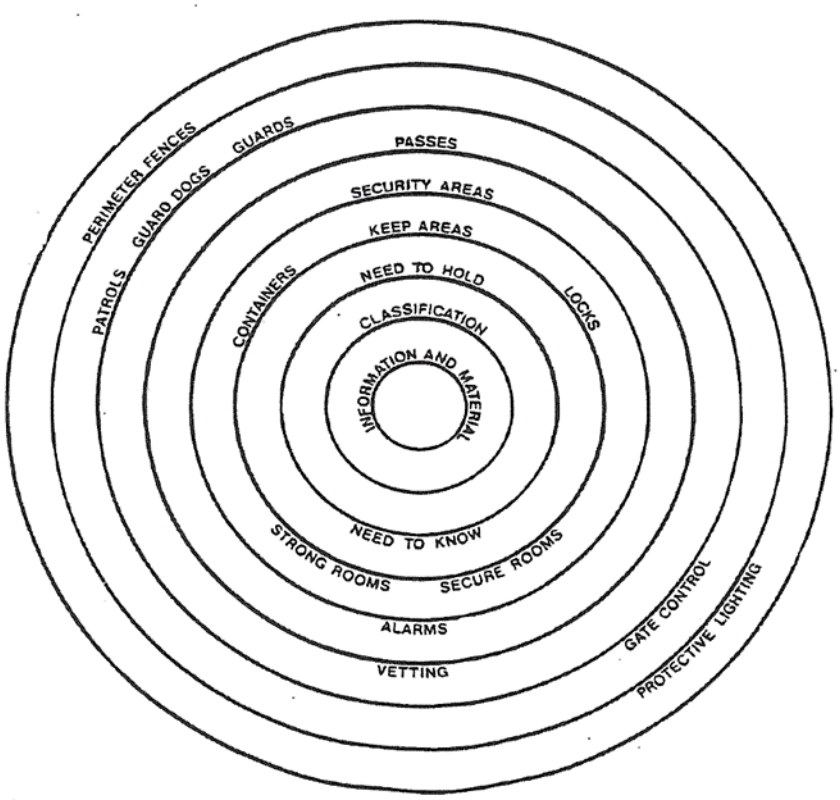


Figure 8.1: Defence in depth

In a similar contention, Sheffi's (2010) study highlighted the need for seaport organisations to constantly operate under a high-security atmosphere, specifically through effective SCM functions. The author comments that the procedure can aid in quick recovery measures after any attacks such as theft and terrorist attacks (Sheffi, 2010).

A study conducted by Pillay and Mafini (2012) identified the snag of inadequate SCM skills, qualifications, malpractices, poor Supply Chain relationships and the challenge of poor Supply Chain

integration networks among the many factors threatening security measures of seaports. However, one question that readily comes to mind is the need to know if these challenges are peculiar to other contexts such as organisations and regions (William, 2012). Interestingly, to provide an explicit response to this question, it is important to state that since every country has its distinct economic and political structure, the effect of poor SCM initiatives on security measures is likely to be different as well.

There is an agreement at least, to an extent between SCM functions and security risk. For instance, Cavinato (2010) highlighted that ensuring security measures with Supply Chain functions greatly requires the consideration of executive management and other management boards in giving explicit direction that could broaden the scope and direction of the risk management process (William, 2012). In other words, security control measures were seen as an avenue of plummeting Supply Chain risk in a broad context. Seaport security is particularly identified as the main initiator of change in the implementation of SCM functions. Thus, the question of whether or not to invest in the security of seaport has long waned. In recent times and due to the ascending rate of security threats in seaports, the question is now on what, where and what security initiatives are best to comply with respect to ensuring the safety of seaports from attacks and other threats (Cavinato, 2010).

With respect to Supply Chain function, security risks or threats as the case maybe can be characterised into three. In the opinion of Paulsson (2010), these security threats include:

1. Threats emanating from the use of a vessel for criminally inclined intention;
2. Poor Supply Chain control and measures due to government policy initiatives; and
3. Costs associated with interruption in the movement of goods and services (Cavinato, 2010).

In a more recent study, attention is now shifted to guaranteeing that Supply Chain function covers areas of ensuring that containers are not being deployed to transport weapons and other illegal goods across the seaports (William, 2012). Government initiatives, through effective Supply Chain functions are arranged to reduce the threats associated with terrorist attacks, yet few of these claims have largely remained diminutive in the Supply Chain literature (Shashank & Goldsby, 2009).

The fact is that the utility of SCM function as a check to reducing seaport threats and terrorist attacks is further supported with the need to ensure investment in technology, security planning and strict compliance to regulatory policies (Shashank & Goldsby, 2009). Making sense from this, it is needful to highlight that the application of Supply Chain management initiatives, cannot be robustly effective to reduce seaport security threats without the application of the aforementioned.

Further, while this is being said, reports have shown that there is still a lack of empirical justification for how security measures and SCM are related (Cavinato, 2010).

Norman and Jansson (2010) argued that, while SCM functions might be useful in the prevention of security threats in seaports, the puzzle of quantifying the cost associated with security remains a challenge. To mitigate this gap, Shashank and Goldsby (2009) rightly confirm that the necessity of creating a risk-Supply Chain initiative for identifying likely vulnerability becomes sacrosanct. For these authors, as soon as vulnerability is spotted, there is a further need to ensure the protection of the Supply Chain against likely threats and associated risks (Kerm, 2013).

Reflecting from the above, ensuring an appropriate communication as a cog of the Supply Chain function is also critical to safeguarding the security of seaports as it were. For instance, Kerm (2013) mentioned that the need to adhere to all safety policies and procedures for the seaports is not distanced from ensuring communication channels are left open for prompt interchange. Ensuring compliance with communication has been linked with compliance with security regulations against threats and sea security (Hendricks, 2009).

Furthermore, related studies have shown the importance of minimising risk as a vital SCM function. As noted by Hendricks (2009), to minimise risks and other associated threats with robust SCM initiatives, clear attention must be given to trade-offs of the Supply Chain to interruptions and the overall competence of the Supply Chain under standard procedures. However, while many other writings have stressed the position of leanness on the one hand, and Supply Chain stoutness on the other, particularly, one concern has been the increase in the number and costliness of Supply Chain disruptions (Hendricks, 2009).

The leitmotif of security for the Supply Chain function has continued to raise important questions in both practice and research. In addressing the risks associated with the transport industry, several security threat measures have been instituted to wrestle security threats and curtail terrorist attacks involving seaport transportation and other logistic functions (Norman & Jansson, 2010).

One of the most chief threats emanates from containerised cargo, and hijacking is also considered as another potential security threat (Norman & Jansson, 2010). In other words, there have been three main objectives making the rounds in the SCM literature as the basic requirement for ensuing the security of seaports. These procedures can be compartmentalised into either organisational or technical. Interestingly, the technical and organisational solutions, have their inherited weaknesses as well. For instance, the weakest aspect has to do with the lack of appropriate methods available to quantify the benefits and vulnerability costs (Hendricks, 2009).

The customs authority presents itself as the only non-governmental organisation through the WCO that has a role in global trade security through its SAFE Framework of Standards.

2.4.3 Customs and Excise Act 91 of 1964 (as Amended), Section 64E

The Customs and Excise Act intends to provide for the levying of customs and excise duties, the prohibition and control of the importation or manufacture of certain goods, and for matters incidental thereto. The Customs and Excise Act, 1964, has not kept pace with the changing focus of customs work or with the radical changes to the environment in which international trade is conducted, particularly the rapid growth in the use of information technology and the exchange of electronic data.

SARS has published the "South African Revenue Service – Service Charter". It provides the following in terms of customs and excise:

- Customs registrations will be finalised within 5 business days where no inspection is required and where an inspection is required, the application will be finalised within 21 business days.
- Customs declarations will be processed within 4 hours of receipt and where an inspection is required, within 48 hours.
- Customs and excise refunds will be paid within 30 business days of finalising the application and refunds will be paid into the same deferment account, provided that the original payment was also made from this deferment account.
- When an application is made for deferral or suspension of payment and all the requirements have been met, SARS will endeavour to consider the request within 21 business days of receipt of the complete application.
- Finalise and communicate the outcome of the Determination of Tariff/Valuation/Origin within 90 days of receipt of all required information/documentation (excluding cases of escalation or exceptional cases, i.e., World Customs Organisation or legal referrals); and

There is an impact on all customs clients, particularly in relation to system, process, and policy changes. There will also be new compliance measures for traders and changes to the penalties' regime. They are aligned to the Constitution and were benchmarked against other customs administrations and international conventions such as the WCO Revised Kyoto Convention[4], which aims to harmonise,

[4] The International Convention on the simplification and harmonization of Customs procedures (as amended), known as the Revised Kyoto Convention is the blueprint for modern and efficient Customs procedures in the 21st century. The Convention elaborates several key governing principles- chief among these are the principles of: transparency and predictability of Customs actions; standardization and simplification of the goods declaration and supporting documents; simplified procedures for authorized persons; maximum use of information technology; minimum necessary Customs control to ensure compliance with regulations; use of risk management and audit based controls; coordinated interventions with other border agencies; partnership with the trade. The revised Kyoto Convention promotes trade facilitation and effective controls through its legal provisions that detail the application of simple yet efficient procedures. The revised Convention also contains new and obligatory rules for its application which all Contracting Parties must accept without reservation. The revised Kyoto Convention entered into force on February 3, 2006.

secure, and facilitate international trade. The Acts provide end-to-end supply chain visibility for SARS, due to mandatory electronic submission of communications, advance cargo reporting, improved sealing provisions and the requirement of various electronic notifications throughout the process.

Now through the Preferred Trader Programme of SARS, they wish to introduce the SAFE AEO Security initiatives, yet SAFE's first version was published already in 2005. RSA must ensure that its programmes and customs controls also meet global security standards as soon as possible.

2.5 Unpacking factors militating against free and secure movement of goods and people at the seaports: the security measures perspective

Several factors have been recounted in literature as threats limiting the free and secure movement of goods and humans across the seaports. However, it is important to mention that the constellation of these factors affects the seaports of countries since the economic and political considerations of countries differ. Yet, the array of these factors is not entirely distinct with respect to how they affect the security of seaports across the globe. This section of the chapter attempts to uncover and synthesise commonly mentioned and reviewed factors in the body of SCM literature and security. The identified factors include but are not limited to seaport location, seaport productivity and competence, infrastructural facilities, organisation and structure of seaports, seaport linkages, associations of seaports (Scot, 1992).

Armue (2013) identified that irrespective of the strategic and geographical location of the US seaports, several attacks have been carried out in the US, which were perpetuated through access to several seaports in the US. The contention, therefore, is the verity that the geographic location of seaports, instead of acting as an advantage to security measures, can in contrast be used as an attack to seaport efficiency.

In other words, it is interesting to mention that government and seaport operators should carve a niche for robust protection of seaports, which have been consistently used as channels of attacks.

2.5.1 Seaport productivity and competence

Productivity and competence in the context of seaport operation can be contextualised by the means of handling containers for speedy turn-around times. For instance, many studies on seaport productivity and competence have shown that the several deficiencies in seaport competence in managing and handling containers have opened up several threats to seaport functional operations (Newman & Rebeck, 2015).

Marlow and Paixaxo (2010) recounted that seaport competence performance are critical to ensuring the safety of the seaport. In a study conducted by Porter (2010), competence performance changes in Mexican seaports show a drastic reduction of safety threats in the operation of seaport activities. In a similar study, Barros' (2009) study indicates that in the case of the Italian seaports, competence-based performance was not correlated to the reduction of safety threats in the functional operation of seaports activities. Another study conducted by Barros (2009) shows that the performance of seaports in terms of improved competency level is a critical factor to judge the safety of the seaport operations. Making sense from the above submission, it is not far-fetched to mention that, having competent seaport operations can to an extent reduce the risks associated with seaports operations. In a contrary perspective, Peypoch's (2008) study makes a case that the safety of any seaport is dependent on the benchmark of its competence, tradition, and other practices.

2.5.2 Infrastructural facilities

The need to ensure the safety of seaports from damages and other forms of terrorism is seldom possible without the provision of robust port infrastructural facilities (Chen, 2015). Infrastructural facilities, in the context of port safety measures, include equipment and storage facilities capable of ensuring the safety of the ports. For Larsson (2012), the traditional means of competition has long been fashioned out and no longer provided by individual firms, but now lies within Supply Chain functions. Thus, the competitiveness and safety of seaports have now been determined by the worth of infrastructural facilities present at the seaports. Accordingly, De Maritino and Morvillo (2010) make a case that the quality of infrastructural facilities at the seaport plays a crucial role in advancing the development of seaport functions among other organisational key functions. However, within the context of maritime, there are sparsely available studies giving credence to the importance of infrastructural facilities as a prominent factor in ensuring the safety of seaports.

2.5.3 Organisation and structure of seaports

The organisation and structure of the seaport play a crucial role in engendering safety measures to the seaport operations and activities. This organisation and restructuring extend to improving the performance of Customs duties, the controlling of risk, and other security and safety measures. The role of organisation and restructuring in relation to port improvement have been evaluated at various levels of management. For instance, Peypoch (2008) and De Langen (2010) separate studies have rightly showed the different strands of these illustrations. For emphasis, these separate studies indicated that a well-organised and structured seaport has the tendency of reducing the many seaport threats and challenges.

On the other hand, a seaport lacking a well-structured and organised set-up is bound to attract threats not limited to damages, attacks, and terrorism among other security challenges. In other words, having a well-articulated and organised seaport has shown how security threats have been dictated by many port operations (Mentzer, 2013). The next section of this chapter is devoted to explaining the theoretical framework.

2.6 Theoretical framework: The Principal-Agent Theory

There is no clear-cut theoretical framework that explicitly explains the relationship between SCM initiatives and security measures. However, among other likely theories, the Principal-Agent Theory is more appropriate, at least to exude the nexus between SCM and security measures to an extent. The main assumptions of the Principal-Agency Theory (PAT) became widely accepted with the work of foremost Economist, Adam Smith (1937), in his book, the Wealth of Nations. The theory is predicated on delegation of assigned duties by the principal to an agent, with the goal of engendering solutions to organisational puzzles, specifically that could arise in the course of executing organisational tasks and functions. While it is a known verity that the discourse of ensuring the security of seaports through effective SCM functions shoulders several managerial issues and tasks (Stock, 2014), the role of agency cannot be over-emphasised. In this study, the presumptions of the Principal-Agency Theory are employed to understand the Supply Chain paradigms with regards to the design of efficient SCM initiatives. Specifically, the narrative is to develop the most SCM techniques for effective seaport security measures. For instance, in the principal-agent relationship, it is envisaged that the extent to which effective Supply Chain functions are being produced by the principal (in this instance, the organisation or seaport company), the better the extent to measure the safety of seaports for the agency (operators and consumers) from security threats including thefts, attacks, and other forms of terrorism.

In a typical principal-agency relationship, the principal would ordinarily seek to minimise agency costs through appropriate monitoring of the agent's behaviour on the one hand. On the other hand, the agent works towards ensuring the maximisation of the principal's rewards and control (Li, 2014). For emphasis, the appropriate and efficient management of the agency hinges on the need for an effective and efficient chain of supply, the structure and organisation of the seaports, and availability of effective infrastructural facilities which are vital elements for an effective principal-agent relationship. Put together, the principal-agency theory provides a useful thesis to explain the nexus between Supply Chain initiatives and security measures since these chains are complete with the principal-agent relationship. The port authority being Transnet is responsible to implement and observe the ISPS Code of the IMO. However, the question must be raised to ask: to what extent does Transnet and the customs authority cooperate to reduce port security threats?

The customs authority, through cooperation with global customs authorities in export countries issues advanced manifests to detect high-rick cargo. Therefore, does Transnet rely on these to also conduct port security?

2.6.1 Organisation and structure of seaports

The security of the supply chain can be accomplished by looking at a supply chain as a whole and not by concentrating on the isolation of the components. Therefore, protecting the supply chain would entail securing every node and connection along the chain, so as to establish a much stronger chain of accountability than its individual links. Many countries and international organisations have established or are developing guidelines and best practices to ensure the protection of cargo, methods and workers involved in the supply chain. Security checks originally began with a single customs intervention at the import site, but have now moved to export site intervention, as in the case of the Container Security Initiative (CSI) programme. As with the ISPS and ICAO requirements, the supply chain is further tightened by the broader security coverage at the sea and air borders of a country. Therefore, all borders control agencies and government organisation must work together in cooperation.

2.6.2 Security initiatives

Security programs to reduce and deter foreign, national, and industrial crimes have been developed. Their compatibility will be tested and the security measures that could become compulsory will also be established.

2.6.2.1 International Ship and Port Facility Security (ISPS) code

The criteria for security management in foreign shipping and at port facilities are formulated by this code. For the activity of vessels, maritime security is critical. An amendment to the Protection of Life at Sea Convention (SOLAS 1974/1988, as amended and came into force January 2020) on the minimum safety arrangements for ships, ports and government agencies are covered in the ISPS Code. The SOLAS amendments address maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear. It is governed by the International Maritime Organisation (IMO), which ensures that all flag states and port states have a global implementation of the code. The code is a two-part manual detailing the minimum safety standards for ships or port facilities used for foreign trade purposes.

As per the ISPS Code, it is a prerequisite for all vessels to have a Ship Security Plan (SSP) on board including all defensive means that the team ought to apply at every security level.

Additionally, SSP ought to show the confined regions and give rules to a compelling execution of the Code, with Risk Assessment structures and agendas to be utilised by key staff during a few activities on board (Safety4sea, 2021).

Important tips for effecting implementation involve access control, vessel search, restricted area control, stores and deliverables check, documentation control, SSAS regular test, and drills and briefings/training. In access points of the vessel should at all times be secured and used only for specific purposes. When the pilot ladder or rope ladder is in use whether the vessel is at sea, at anchorage or in port, the embarkation area should be supervised at all times for the period the ladder is in use and further securely folded in its position on completion of its use. For vessel search, the restricted areas on board and areas surrounding the ship shall be monitored at all times. Such monitoring capabilities may include the use of lighting watch-keepers, security guards and deck watches including patrols, and shore/boat patrols in cooperation with the port facility. In restricted area control, any unauthorised presence within restricted areas constitutes a breach of security. Adjoining areas to restricted areas will be manned or patrolled when visitors have authorised access to restricted areas.

In stores and deliverables check, the security measures relating to the delivery of ship's stores should: ensure checking of ship's stores and package integrity, prevent ship's stores from being accepted without inspection, prevent tampering, and prevent ship's stores from being accepted unless ordered. For documentation control, it includes security-controlled documentation. Security-controlled documentation includes but is not limited to the following; Ship Security Plan, Ship Security Assessment (incorporated in the relevant section of the Ship Security Plan), and Continuous Synopsis Records. The SSAS regular test involves two ways of testing the SSAS; testing of the alert buttons and test transmission. Lastly, it includes drills and briefings/trainings. The company CSO must have attended relevant training courses by a training facility recognised and endorsed by the Administration or an RSO designated by the Administration. The risk is however, that vessels below a designated carriage capacity appear to be exempted by the ISPS Code and therefore cooperation initiatives are needed to ensure customs controls also contribute to security measures.

Below we indicate the examples of Global Customs and Trade Partnership programmes which promote security in the supply chain.

2.6.2.2 U.S. Customs-Trade Partnership Against Terrorism (C-TPAT)

The C-TPAT initiative is an American voluntary collaboration intended to minimise security risks and costs in the customs and US import trade community.

C-TAT seeks to improve and strengthen the supply chain of imports into the US against terrorism and to balance the need for improved security measures against the need to minimise unnecessary delays in legitimate and compliant trade due to greater customs interference.

Participation in the C-TPA programme requires importers to:

- Submit an application to customs to obtain approval for participation;
- Conduct a comprehensive self-assessment of their supply chain security using C-TPAT security guidelines on various aspects, such as procedural security, physical security, personnel security, education and training, access controls, manifest procedures, and conveyance security;
- Submit a supply chain security;
- Develop and implement a programme to enhance security where they have control throughout the supply chain; and
- Communicate the C-TPAT guidelines in areas where they do not have control over other companies in their supply chain that do have control and work towards building a secure relationship with these companies.

2.6.2.3 Canada: Partnership in Protection (PIP)

PIP is a voluntary initiative designed by Canadian Customs, similar to C-TPA, to encourage collaboration with the private sector to strengthen border protection, tackle organised crime and terrorism, raise awareness of customs enforcement problems, and help identify and deter smuggling. In order to find gaps in the security process, the programme is also focused on self-assessment. The aim is to minimise the danger of criminal activity.

2.6.2.4 Free and Secure Trade (FAST) programme

The joint Canada-U.S. program is the Quick program. The Canada Border Services Agency, Citizenship and Immigration Canada and the US Bureau of Customs and Border Protection (CBP) initiative FAST facilitates the rapid movement of pre-approved qualifying products across the border and the verification of trade enforcement away from the border. It is a harmonised commercial mechanism that is provided to importers, carriers and licensed drivers who are pre-approved. In today's competitive environment, organisations are increasingly becoming aware of the need to adopt new strategies to respond to rapidly changing business conditions. Greater market share and customer loyalty can be gained by the quick and reliable responses to customers' changing needs.

Speedy delivery of goods and services emerged at the end of the 1990s as a critical element in winning customers, retaining existing customers, and enjoying a position as an industry leader. RAPID, therefore;

- Provides false or incomplete information on applications;
- Provides information on those who have been convicted of a criminal offence or have been found in violation of customs or immigration laws or those who fail to meet other requirements of the FAST-commercial driver programme.

Canadian or US privacy legislation is applicable, and information shall only be shared with the relevant law enforcement agencies. The driver's participation in the FAST programme is communicated to outside parties.

2.6.2.5 Sweden: Stair Sec

Stair Sec is the security portion of Swedish Customs voluntary programme which is targeted at setting down practical solutions for establishing an authorised and secure supply chain for all stakeholders in the international supply chain, namely importers/exporters, brokers, forwarders independent of transport mode, and also terminal operators, such as seaports, warehouses and other hubs for cargo management.

2.6.2.6 New Zealand: Secure Export Partnership

The Secure Export Partnership scheme sees security issues sorted out prior to leading by customs performing; Audits on companies to verify compliance with the requirements of the Secure Export Partnership and Inspections on cargo before it is shipped and enters the supply chain. The scheme requires businesses to have robust security measures in place to ensure export goods cannot be tampered with or used to smuggle contraband. At the point of packing for export, the consignment of goods is sealed with a customs-approved seal, signalling that it is under customs control and can be considered secure by the overseas customs administration. While the scheme is voluntary, customs control over the sealed consignments is legislated in the amended Customs and Excise Act.

2.6.2.7 Singapore: Secure Trade Partnership

The STP is a voluntary certification programme consistent with the World Customs Organisation (WCO) SAFE Framework of Standards to secure and facilitate global trade. The programme encourages companies to adopt robust security measures using a risk-based approach in their trading operations to improve global supply chain security. By participating in the programme, a company demonstrates commitment and willingness in keeping the supply chain secure.

Companies with robust security measures will benefit from increased visibility of goods in the supply chain, reduction in pilferages and greater efficiency in their supply chain management.

2.6.2.8 European Union: AEO Customs programme

The EU AEO Programme introduced flexibilities into the standards to be used by the EU MS government when examining applications for the AEO status. The objective is to minimise costs and burdens of the authorisation process for AEO for SME. The AEO programme is open to all economic operators including SME and the conditions and criteria for an AEO authorisation are the same for all economic operators. But MS administrations can grant flexibilities to SME in particular with a view of the examination of the criteria for the authorisation. They can implement different measures to fulfil the AEO criteria or to demonstrate conformity with the criteria, depending on the size of the operator.

2.6.2.9 Technology Asset Protection Association (TAPA)

This is a unique forum that unites global manufacturers, logistics providers, freight carriers, law enforcement agencies, and other stakeholders with the common aim of reducing losses from international supply chains. The Association's Security Requirements are recognised globally as the industry standard for cargo facility and transport security TAPA's Incident Information Service (IIS) constantly captures and shares data, enabling stakeholders to use the latest cargo crime intelligence to avoid incident 'hotspots', protect goods in transit and, if required, to report and trace stolen property. TAPA regularly consults at the highest level of relevant government departments and with law enforcement agencies to support the requirements of its members in their campaign to reduce crime.

2.6.2.10 QMS pertaining to security for global trade

The definition of quality can be a complex matter, Juran (1999) cited by (Magaud, 2006) offers two meanings to the term quality management; "quality means those characteristics of the products which satisfy the customers' needs and ensure their satisfaction" and "quality means lack of deficiencies i.e. the absence of errors that require reprocessing or are the results of accidents, customer dissatisfaction, customer complaints, etc.". These two Juran approaches highlight the idea that the goal of quality management is to provide greater customer satisfaction and to avoid wastage of all kinds: financial, image, etc. Radu, et al.'s (2013) view is that the purpose of quality management is to increase competitiveness, which determines increased profits.

A Quality Management System (QMS) is an important process that must be put in place in an organisation. A QMS takes a critical look at the set of policies, processes, and procedures in a company. It helps in planning and executing the core business areas of an organisation, such as production, development, and service.

The quality management systems utilised by global trading organisations must therefore embrace security as well as to ensure customs cooperation to other governmental agencies.

2.7 Conclusion

The chapter provided an insight into the impact of security in the seaport. It discussed the South African economy through the lens of the seaport economy sector. The chapter also provided a conceptualisation of supply chain management. It further discussed the supply chain functions and criteria as related to security measures, and the security measures perspective. Lastly the theoretical framework was discussed with a view to the dual role and cooperation possibilities for cooperation with the focus on SCM security measures and standards, through the accession to the WCO SAFE Framework of Standards. Information sharing and cooperation is key to the cooperation.

CHAPTER THREE: GLOBAL SECURITY MEASURES OF CUSTOMS

3.1 Introduction

The rise of international terrorism has made the issue of security one of the major concerns confronting Customs operations and management globally (Swahn, 2002). Prior, a large number of Customs operations and administrations conducted their preventive operations and measures as goods reached seaport, airport, and land borders at the time of entry declaration of such goods. However, the need for the necessities for improving security measures of Customs in the Supply Chain functions requires that the previously adopted traditional security measures must change. To do this, however, the Customs operations must be organised towards the gathering of information and assess risk much in advance, in order to allow effective action to be taken, possibly before the arrival of a ship or aircraft as it were (Stopford, 2009). The information required for the security processes emerges from several sources, but a very sacrosanct aspect of this information is the advance information made available from the exporting business owners. Therefore, Customs skills in evaluating the information through systematic utilisation of resources, and operational communication, therefore, has become more important in recent time than in the past.

The security of the supply chain can be accomplished by looking at a supply chain as a whole and not by concentrating in isolation on the components. Therefore, protecting the supply chain would entail securing every node and connection along the chain, so as to establish a much stronger chain of accountability than its individual links. Many countries and international organisations have established or are developing guidelines and best practices to ensure the protection of cargo, methods and workers involved in supply chain security. Security checks originally began with a single customs intervention at the import site, but have now moved to export site intervention, as in the case of the Container Security Initiative (CSI) programme. As with the ISPS and ICAO requirements, the supply chain is further tightened by the broader security coverage at the sea and air borders of a country.

The discourse of security is of great significance to governments and so is the need for the facilitation of legitimate trade (Jones, 2002). If utilised effectively, security information of Customs can help towards enhancing facilitation by building business self-assurance, increasing certainty and trade flow, and in return, aid improved investment (Lee & Flynn, 2011). The trust of protecting the society in such an effective and well-organised means necessitates that the international trade supply becomes the centre of attention in its entirety, rather than merely when goods are entering, parting, or transiting a country. In other words, the varying environment requires an inclusive government approach.

The government would therefore have the opportunity to employ Customs as a critical resource in the management of border security by applying Customs experience with respect to the management of risks and understanding of international trade as a vital component of addressing issues related to national security. Importantly, Customs responsibility in security and acceleration complement the assistance offered by other complementary agencies as a gesture of an integrated approach. Therefore, the level of collaboration and communication between Customs and other lead agencies such as immigration, maritime policing, aviation, and sea navy in security measures of the port and other borders represent an important measure for the global security of the ports (Notteboom, 2011).

Developing and employing security principles across international borders is can posit a difficult challenge but also engenders the importance of protecting the integrity of the international Supply Chain (Jones, 2002). Fundamental efforts towards developing intentional standards are ongoing on several grounds, but it is expected that more is still being looked out for to standardise these standards and implement them effectively (Song, 2003).

3.2 The World Customs Organisation (WCO) and security measures

The WCO has adopted the Secure System of Standards in response to the increasing challenge of ensuring safe international trade. The goal of these standards is to offer a stronger emphasis to the principles of the revised Kyoto Convention that enhance customs administration cooperation, ensure the protection of the supply chain, and encourage security and predictability at the global level. The international structure for the standardisation and harmonisation of the authorised economic program is also provided. The SCM, as a government job for Customs, puts extra pressure on Customs to find the right balance between regulation or security and trade facilitation. The Secure Standards System comprises a range of significant standards explicitly dedicated to trade facilitation.

SAFE calls for harmonisation of the criteria for advanced cargo information and the use of a standardised approach to risk management in order to counter threats. The concept of the Approved Economic Operator (AEO) was developed as a way of providing legitimate trade with a mechanism to gain tangible benefits for their commitment to invest in and comply with supply chain security requirements, in addition to the AEOs, in every country again would not have to undergo time-consuming accreditation processes. Finally, the Healthy Standards System provides a clear recommendation for governments to apply state-of-the-art non-intrusive inspection technologies, which can improve protection while helping to discourage unwanted physical inspections.

The framework consists of four core principles which are advanced electronic information, risk management, outbound inspection, and business partnership. Advance electronic information harmonise the advance electronic information requirement on inbound, outbound and transit. Risk management commits to employing a consistent risk management approach to address security threats. The framework emphasises outbound inspection of high-risk consignments being exported, preferably using non-intrusive inspection methods. Customs will provide benefits to businesses that meet minimal supply chain security standards and best practices. The expedite trade and the flow of cargoes, and the SAFE Framework were devised in three distinctive pillars, namely:

1. Customs-to-customs;
2. Customs-to-business; and
3. Customs-to-other government and inter-government.

3.2.1 Pillar 1 – Customs-to-Customs (WCO, 2018, p. 6-19)

The first pillar consists of 11 standards which are discussed below.

1. Standard 1: Integrated Supply Chain Management

   The Customs administration should follow integrated Customs control procedures as outlined in the WCO Customs Guidelines on Integrated Supply Chain Management (ISCM Guidelines).
2. Standard 2: Cargo Inspection Authority

   The Customs administration should have the authority to inspect cargo originating, exiting, transiting (including remaining onboard), or being Trans-shipped through a country.
3. Standard 3: Modern Technology in Inspection Equipment

   Non-intrusive inspection (NII) equipment and radiation detection equipment should be available and used for conducting inspections, where available and in accordance with risk assessment. This equipment is necessary to inspect high-risk containers or cargo quickly, without disrupting the flow of legitimate trade.
4. Standard 4: Risk-Management Systems

   The Customs administration should establish a risk management system to identify potentially high-risk shipments and automate that system. The system should include a mechanism for validating threat assessments and targeting decisions and identifying best practices. Transnet would gain valuable port security information via cooperation with the customs authority.
5. Standard 5: Selectivity, profiling and targeting

   Customs should use sophisticated methods to identify and target potentially high-risk cargo, including - but not limited to - advance electronic information about cargo shipments to and

from a country before they depart or arrive; strategic intelligence; automated trade data; anomaly analysis; and the relative security of a trader's supply chain. For example, the Customs-Business Pillar certification and validation of point-of-origin security reduces the risk, and therefore, the targeting score. The port authority will have such information available from the customs authority which it currently does not get.

6. Standard 6: Advance Electronic Information

   The Customs administration should require advance electronic information on cargo and container shipments in time for adequate risk assessment to take place. The port authority by way of example, does not get this information as does the customs authority via its legislation.

7. Standard 7: Targeting and Communication

   Customs administrations should provide for joint targeting and screening, the use of standardised sets of targeting criteria, and compatible communication and/or information exchange mechanisms; these elements will assist in the future development of a system of mutual recognition of controls.

8. Standard 8: Performance Measures

   The Customs administration should maintain statistical reports that contain performance measures including, but not limited to, the number of shipments reviewed, the subset of high-risk shipments, examinations of high-risk shipments conducted, examinations of high-risk shipments by NII technology, examinations of high-risk shipments by NII and physical means, examinations of high-risk shipments by physical means only, Customs clearance times and positive and negative results. Those reports should be consolidated by the WCO.

9. Standard 9: Security Assessments

   The Customs administration should work with other competent authorities to conduct security assessments involving the movement of goods in the international supply chain and to commit to resolving identified gaps expeditiously.

10. Standard 10: Employee Integrity

    The Customs administration and other competent authorities should be encouraged to require programs to prevent lapses in employee integrity and to identify and combat breaches in integrity.

11. Standard 11: Outbound Security Inspections

    The Customs administration should conduct outbound security inspection of high-risk containers and cargo at the reasonable request of the importing country (WCO, 2018).

3.2.2 Pillar 2- Customs-to-Business (WCO, 2018, p. 23-24)

The second pillar consists of six standards as follows:

1. Standard 1 - Partnership

   A self-assessment process measured against predetermined security standards and best practices to ensure adequate safeguards against the compromise of their shipments and containers until they are released from Customs control at the destination.
2. Standard 2 - Security

   AEO will incorporate pre-determined security best practices into their existing business practices.
3. Standard 3 - Authorisation

   The Customs administration, and the trade community, will design validation processes or quality accreditation procedures that offer incentives to businesses through their status as AEO.
4. Standard 4 - Technology

   All parties will maintain cargo and container integrity by facilitating the use of modern technology.
5. Standard 5 - Communication

   The Customs administration will regularly update Customs-Business partnership programs to promote minimum security standards and supply chain security best practices.
6. Standard 6 - Facilitation

   The Customs administration will work co-operatively with AEO to maximise security and facilitation of the international trade supply chain originating in or moving through its Customs territory (WCO, 2018).

3.2.3. Pillar 3- Customs-to-other Government Agencies (WCO, 2018, p. 29-30)

The third pillar consists of 12 standards as follows.

1. Standard 1 - Mutual Cooperation

   Governments should foster mutual cooperation between their Customs administration and other competent government agencies. The port is an important component of the supply chain. Transnet must cooperate to its advantage with the customs authority.
2. Standard 2 - Cooperative Arrangements/Procedures

   Governments should develop and maintain cooperative arrangements or procedures among their agencies that are involved in international trade and security.
3. Standard 3 - Alignment of security programmes

Governments should, where appropriate, align the requirements of the various security programmes/regimes that are implemented to enhance the security of the international supply chain.

4. Standard 4 - Harmonisation of national control measures

   Governments should harmonise the supply chain security national control measures of government agencies, including risk management and mitigation, in order to limit any negative impact of those measures on legitimate trade and international movement.

5. Standard 5 - Development of continuity and resumptions measures

   Customs should work with other government agencies as well as the private sector to identify their respective roles and responsibilities in relation to trade continuity and resumption measures in order to continue trade in the event of a disruptive incident.

6. Standard 6 - Harmonisation of data filing requirements

   Customs should develop cooperative arrangements with other government agencies that require data for the clearance of goods in order to facilitate the seamless submission, transfer, and reuse of international trade data, consistent with the Single Window concept. This is highly important and allows for greater port security through advance information.

7. Standard 7 - Mutual Cooperation

   Governments should foster mutual cooperation between Customs administrations and other competent government agencies involved with supply chain security across borders or within a Customs Union.

8. Standard 8 - Development of Cooperative Arrangements or Protocols

   Governments should develop cooperative arrangements or protocols among their agencies that are working side by side on a shared border or within a Customs Union.

9. Standard 9 - Harmonisation of security programmes

   Governments should, where appropriate, harmonise the requirements of the various security programmes that are implemented to enhance security of the international supply chain.

10. Standard 10 - Harmonisation of cross-border control measures

    Governments should work to harmonise cross-border control measures. The trade facilitation is key, hence, the global customs standards.

11. Standard 11 - Establishment of Mutual Cooperation

    Together, governments should foster cooperation between and among international bodies that are involved with supply chain security.

12. Standard 12 - Development of cooperative arrangements or protocols

The WCO on behalf of its members should develop and maintain cooperative arrangements with those international governmental bodies (e.g., ICAO, IMO and UPU) that are involved with supply chain security.

The WCO's response to port and land security is carried out in alliance with other specialised international trade partners that are focused on the security of transport modes including the International Maritime Organisation (IMO), the International Civil Aviation Organisation (ICAO) and the International Air Transport Association (IATA). In the pursuit of ensuring the mandate of the effectiveness of Customs operations and administration, the WCO seeks to build suitable security edges in order to avert the undue security threats jeopardising the port operations (Omeje, 2006). The WCO in June 2002, permitted a resolve on security and facilitation of the international Supply Chain (Mensah, 2003). In return, the permission of this resolution resulted in the development of the International Task Force on Security and Facilitation of the International Trade Supply Chain, consisting of Customs administrations, and other assigned international organisations. According to Wang and Olivier (2004), the task has produced a wide-ranging package of guidelines and other important measures that would assist Customs administrations to implement and utilise contemporary risk-based mechanism processes. The security and acceleration concepts established by the task force comprise the submission of advance electronic information of the Supply Chain cycle, in order to allow Customs administration to carry out risk assessment process prior to shipment.

Furthermore, this method tends to give room for security roles to be initiated prior to or after export, while merchandises are still in transit on or before importation (Omeje, 2006). The range of information is given by the most suitable private sector units involved in the Supply Chain. The processes are contained in the Advance Cargo Information Guidelines, which form an important part of a holistic package of measures.

Some of the guideline instruments developed by the WCO for the security of ports include:

i. a list of important data component needed for the identification of high-risk shipment;

ii. new international traditions of Customs administration, which will inform Customs administration dissemination of information across regional and international levels; and

iii. guidelines regarding the purchase and set-up of container scanning equipment.

Therefore, the implementation of the WCO security measures is being managed by the Director-General who is saddled with the provision of tactical advice on the deployment of security and facilitation procedures and standards.

World trade is reliant on maritime transport. Much progress has been recorded in recent years to render this system as open as possible to engender great economic prosperity. However, the array of issues that have aided the maritime transport in contributing to economic boom in contrast also pose some important security risks. Risks from physical breaches pose threats to the integrity of shipments.

Customs has traditionally been responsible for implementing a wide range of border management policies, often on behalf of other government agencies. The role of Customs has, however, changed significantly in recent times. This is reflective of the changing environment in which customs authorities operate, and the corresponding changes in government priorities (Valantiejus, 2015).

The World Trade Organisation, World Customs Organisation and other international bodies are responding through the development of global standards that recognise the changing nature of border management (Hintsa et al., 2014).

Traditionally, however, Customs has been responsible for implementing a wide range of government policies, spanning areas as diverse as revenue collection, trade compliance and facilitation, interdiction of prohibited substances, protection of cultural heritage and enforcement of intellectual property laws. There has been mounting pressure from the international trading community to minimise government intervention in commercial transactions, and a growing expectation for customs authorities worldwide to place an increasing emphasis on the facilitation of trade (Richardson, 2020). This is in no small part due to the changing environment in which customs authorities operate. For centuries, the customs role has been one of 'gatekeepers', with customs authorities representing a barrier through which international trade must pass, in an effort to protect the interests of the nation. In this day and age, however, social expectations no longer accept the concept of intervention for intervention's sake. Rather, the current catch-cry is 'intervention by exception', that is, intervention when there is a legitimate need to do so; intervention based on identified risk (Simmons, 2021). The changing expectations of the international trading community are based on the commercial realities of its own operating environment. It is looking for the simplest, quickest, cheapest, and most reliable way of getting goods into and out of the country. It seeks certainty, clarity, flexibility, and timeliness in its dealings with the government. Driven by commercial imperatives, it is also looking for the most cost-effective ways of doing business (Hintsa et al., 2014).

3.3 Risk and security management in Customs operations

The conception of organisational risk explains the occurrence of events and other activities that are capable of hindering an organisation from the realisation of its objective (Ndlovu-Gatsheni, 2007). Therefore, Customs authorities are mandated to be compliant with two objectives such as to:

- Provide a well thought out international trading arena with a suitable level of facilitation, and
- Ensure acquiescence with other regulatory enforcement measures of mitigating risks.
- Working together with other organisations towards promotion of supply chain security.

A careful examination of the risk and security threats facing Customs operations include the likeliness of nonconformity with Customs laws.

The regulatory guidelines include licensing prerequisite, assessment necessities, rule of origin, duty exemption and the likely failure of facilitating international trade (Omeje, 2006).

In other words, Customs authorities like any other establishment need to manage their security risks. This necessitates the logical application of management processes employed to dwindle those risks in order to ensure its objectives are realised in the best effective ways possible.

Such processes include amongst others documentation, examination, assessment, management, and the appraisal of risks that are likely to alter the attainment of these objectives (Bo¨rzel & Thomas, 2005). This is sufficing to say that robust risk management is sacrosanct and fundamental to effective Customs operations since it is a truism that all organisations, either formal or informal employ some form of risk management to organisational tasks (Mancini, 2006). Making a case for the place of intelligence, information and experience, Customs in its operation has always employed procedures for the identification of unlawful activity towards the need to reduce its risks (Mancini, 2006). The traditional form of procedures includes consistent border patrols with respect to the monitoring of the movement of goods and services and people, and other activities such as important documentary checks and inspections geared towards the identification of illegal trade. The inclusion or utility of these kinds of controls explains a strand of risk management but has yet to prove to be the most effective risk management strategy (Ndlovu-Gatsheni, 2007).

The growing complexity engendered by technological advances that has recently altered global trading practices has in consequence affected the way and manner Customs operations and activities are now executed (Bo¨rzel &Thomas, 2005). As a response to this change, several Customs operations globally have now been entrenched with a sophisticated approach towards the management of risk and security at both the air and land ports. Similarly, this has also contributed hugely to the effective management of their operations with an outlook of a reduced regulatory burden that is known to characterise Customs operations and activities.

3.3.1 Facilitation and control of risk in Customs operations

The two main objectives of Customs are particularly referred to as facilitation and control (Mensah, 2003). In a bid to strike a balance between facilitation and regulatory control, Customs must be willing to manage two potential risks namely the possible failure to ease international trade and the probable for noncompliance with Customs laws (Notteboom & Rodrigue, 2005). In other words, the utility of risk management procedures provides an appropriate means of accomplishing this balance. The phrase "facilitation and control" is commonly used in Supply Chain literature as against "facilitation versus control". This is so since it is expected that as the level of facilitation surges, the level of control decreases as well (Mensah, 2003). In addition, in an instance where regulatory controls are tightened, it is generally perceived that facilitation will suffer some setbacks. As a crucial point, the elimination of border administrative and regulatory bottlenecks can have a powerful impact on reducing the cost of trade and rising trade.

The new WTO Trade Facilitation Agreement is intended to speed up the movement, discharge, and clearance of goods, including those in transit. Implementation can help improve and reduce boundary inefficiencies and the associated costs for LDC members so that these benefits are realised. The LDC stands for least developed countries. WTO members concluded negotiations at the 2013 Bali Ministerial Conference on the landmark Trade Facilitation Agreement (TFA), which entered into force on 22 February 2017 following its ratification by two-thirds of the WTO membership. The versatility of execution that it accounts for is one specific aspect of the agreement. First, many of the approximately 35 technical trade facilitation measures are written in a language that does not mandate but requires "best efforts." Second, the Agreement enables each developer or LDC member to decide when each trade facilitation measure will be introduced and to determine the support required for its implementation. Port authorities must, despite their obligations and services, facilitate trade.

Consider the roles of stakeholders that are particularly impacted by inefficient procedures to provide more background as to why the TFA is essential. Smaller businesses that do not have the same resources to cope with burdensome regulations are especially at a disadvantage because of these types of inefficiencies, as are exporters and producers in landlocked developing countries whose products and supplies have to cross borders many times over (often those of other developing countries). The same also applies to suppliers of agricultural and other perishable products or goods operating in just-in-time (JIT) markets, where any delay in delivery can have a direct negative impact on the value of the goods and the financial well-being of the goods being dispatched or received by the companies.

As a note of importance, in terms of added export opportunities, increased foreign investment and greater access to a broader range of goods for customers, removing these unnecessary or burdensome regulatory barriers will bring substantial economic benefits. Increased accountability, better governance, modernised border procedures, transit and flexibility in implementation can also help. Developing countries may have the most benefit from reforms, where these administrative and procedural hurdles appear to be more prevalent.

3.3.2 The management of compliance associated with risk and security of ports

In the quest towards ensuring the safety and security of ports, the responsibility of Customs is to ensure compliance is effectively managed in such a way that will guarantee the facilitation of trade (Borzel & Thomas, 2005). To enable this, many Customs administrations have employed an appropriate compliance management policy as mandated by the WCO, especially those that are predicated on the processes of risk management. The compliance management framework offers a valuable conceptualisation of the interrelationship existing between facilitation, regulatory control, and risk management. The next line of compliance is the identification of a risk-compliance management strategy.

A suitable legislative framework is an important element of any regulatory measure since the main role of Customs is to ensure compliance with the rules and regulations governing international trade.

In other words, irrespective of the compliance management strategic approach that is evident in the mitigating of risk for ensuring security, the place of the legislative framework must be neatly employed to provide a basis in law for the growth of the collection of administrative and risk management strategies that Customs have adopted (Wang & Olivier, 2004). For instance, a proper basis in law must be evident to enable Customs to untie the relationship between its physical control over internationally traded goods and the revenue liability that such goods may entice (Ndlovu-Gatsheni, 2007). Cooperation with the customs authority allows Transnet use of information for security purposes.

Strengthened by available related legal provisions, the various fundamentals of the administrative and risk management frameworks utilised by Customs importantly imitates the essential style of agreement management being chased by the administration, with a cumulative utility of risk management procedures as the administration moves away from the traditional, risk-oriented style of compliance management approach (Notteboom & Rodrigue, 2005). Therefore, the available technological framework depicts an enabler and serves as an important aspect to the management of risk and compliance in Customs operations.

3.4 World Custom Organisation SAFE Framework of Standards (2018 version)

An essential driver of economic growth and prosperity is unconnected to genuine international trade (Notteboom & Rodrigue, 2005). The universal trading system is susceptible to terrorist attacks that have the propensity to endanger the total global economy and the social security of nations. As an arm of government agencies and department that monitors and regulates the international movement of goods, Customs administration is in a special position of providing appropriate security to the global Supply Chain in order to engender socio-economic development through the act of collecting revenue (World Customs Co-operation Council, 2004).

Therefore, there is an urgent need for the World Customs Organisation (WCO) validated strategy in securing the movement of goods in such a manner that will not impede but facilitates the flow and movement of such trade. This is sufficing to argue that safeguarding the international supply trade chain remains critical to the holistic process of reinforcing and organising Customs administration in this 21st century.

Consequently, to reinforce and move beyond the extant programmes and practices, WCO member states have established a command that will improve the safety and facilitation of international trade (Pallis, 2006). This command structure was followed by the establishment of the WCO SAFE Framework and Standards enacted to protect and ensure the safety of international trade. The SAFE Framework seeks to introduce the philosophies and the values and present them for implementation as a minimal threshold of what is expected from the confines of WCO (Pallis, 2006). The WCO is an independent intergovernmental body that has an influence on at least 99 percent of global operations and trade. Customs administrations have a significant influence that occurs nowhere else in government. In addition, Customs also have the authority to deny access or departure and the power to facilitate entry as the case may be (Robinson, 2002). Customs responsibility also extends to such powers of being able to require information concerning the nature and content of goods being imported and exported as the case may be. In other words, they can enact legislation, mandated that information be made available in advance by electronic means. However, given this array of critical responsibilities, and as mentioned before, Customs are expected and should play a vital role in both the security and facilitation of trade. To do this, an all-inclusive approach is necessary to enhance securing of the international trade Supply Chain with the mindset of guaranteeing continued development in trade facilitation (Song, 2003). Put together, Customs should be reinvigorated to establish a solidarity arrangement with other agencies of government for effective results.

It is important to note the impossibility on the part of Customs to inspect and monitor every shipment as engaging in this would bring global trade operations to a halt (Song, 2003). Therefore, restructured Customs administrations employ mechanised systems to manage risk in several ways. In this arena, they are expected not to act as a burden on the community of international trade with different clusters of requirements to ease and protect commerce, with the recognition of other important standards and monitoring measures (Robinson, 2002). To this end, the SAFE Framework of Standards considers important elements required for capacity building and necessary legislative authority (Pallis, 2006).

3.4.1 The management of compliance associated with risk and security of ports

The SAFE Framework seeks to:

i. Establish principles and offer Supply Chain security and facilitation on a global scale for the promotion of inevitability and expectedness;

ii. Allow combined and coordinated Supply Chain management for all types of transport;

iii. Improve the responsibilities and capabilities of Customs to mitigate the dares and chances of the 21st century;

iv. Reinforce the cooperation between Customs administration through an appropriate interchange of information and other administrative functions;

v. Reinforce cooperation between Customs and other related government agencies and department; and

vi. Encourage a unified movement of goods through protected international trade Supply Chains.

This study specifically deals with i), ii), and vi).

3.4.2 Fundamentals of the SAFE Framework

The SAFE Framework comprises four cardinal elements. One of these elements is the importance of coordinating the advance electronic freight data on inboard, outboard and on shipments (Robinson, 2002). Secondly, every country that participates as a member of the SAFE Framework is obliged to commit to utilising a constant risk management method for addressing and mitigating the effect of security threats. Third, it necessitates that at the equitable request of the receiving country, grounded upon an equivalent risk levelling methodology, the sending country's Customs administration must implement an outbound review of high-risk shipments and other transport deliveries, while utilising non-intrusive recognition equipment such as large-scale X-ray apparatuses and other radiation

detectors (Pallis, 2006). Lastly, the SAFE Framework suggests reimbursements that Customs will offer to businesses that attain the least Supply Chain security principles and best practices.

Operational capacity building initiatives remain an important thrust of ensuring widespread adoption and enactment of the SAFETY Framework. Nonetheless, it is critical to recognise that part of the mechanism can be applied instantaneously (Rice & Spayd, 2005).

In other words, the approaches are mandated to improve the capacity building offered to members to facilitate the implementation of the SAFETY Framework. For capacity building to be effective, a footing of the political will should be supported by the WCO and a syndicate of members and other associated agencies (Rice & Spayd, 2005). Again, implementation forms another important aspect of the SAFE Framework element. For instance, to appropriately implement this SAFE Framework instrument, it is obvious that the utilisation of capacity building will not be sufficient, but with the integration of a clear-cut understanding of the implementation process (Psaraftis, 2005). Thus, it is unlikely to conceive that every Customs administration will be in the position to effectively implement the SAFE Framework. Similarly, while the SAFE Framework is reflected on as a least set of standards, it will be enacted at different stages in tandem with each administration capability and the required jurisdictive power (Johnston, 2004).

The SAFE Framework offers an important consolidated agenda that will augment global trade, safeguard security against terrorism and other types of crime, and upturn the support of Customs and other trade associates to the economic and social well-being of countries (Psaraftis, 2005). In other words, it is the position to advance the ability of Customs to perceive trading with severe risk shipment and increase competencies in the administration of goods, thus accelerating the clearance and release of goods. Therefore, the benefits of the SAFE Framework depict important benefits to the government, Customs administration, and other business associates in the communities as well. It will also facilitate trade.

One of the chief objectives of the SAFE Framework is to ensure the security and facilitation of global trade (Ointo, Rabadi & Tally, 2008). This will present the international trade with the opportunity to contribute to fiscal development. Importantly, the SAFE Framework also possesses the benefits of securing trade against the danger of international terrorism, and other forms of crime (Mensah, 2007). In addition, it will enable Customs administration to expedite the movement of genuine trade and upturn and modernise Customs operations (Brooks & Pelot, 2008). In exchange, this will increase the rate of revenue remission and the discharge and uses of national legislation. In a nutshell, the SAFE Framework, therefore, backs fiscal and social protection, with the prospects of enhancing foreign direct

investment. The SAFE Framework also supports the development of cooperative schedules between Customs and other agencies and government departments. This will support the government in ensuring harmonised border supervision and control (Johnson, 2004). In other words, by adequately putting the necessary measures in place, the SAFE Framework also enables the government to increase the obligation and accountabilities of Customs in this capacity.

3.4.2.1 Benefit to Customs

One of the chief thrusts of the SAFE Framework is to establish and augment the relationship and network between different Customs administrations to advance a unified movement of goods via secured and protected Supply Chain functions (Psaraftis, 2005). This array of networks will provoke among others, the exchange of suitable and precise accurate information that will aid Customs administrations towards managing high-risk shipments (Johnston, 2004). In addition, it will also assist Customs administration for the need to improve their regulating mechanism alongside the international Supply Chain towards making for improved and sustained allocation of Customers resources (Johnston, 2004). Therefore, the relationship between the Customs administration can be reinforced in such a way that will enable administrations to manage controls promptly in Supply Chain.

Similarly, the SAFE Framework also provides for the communal recognition of controls under specific conditions. For instance, the application of the SAFE Framework instrument will allow Customs administration to employ a broader and wide-ranging view of the global Supply Chain and create the prospect to eradicate repetition and multiple reporting necessities (ISO, 2006). Therefore, the SAFETY Framework will assist Customs administrations to manage any challenges that the new environment might provoke to international trading by putting appropriate measures in place.

3.4.2.2 Benefit to Business

The SAFE Framework initiates, amongst other things, the settings for the protection of international trade and entry to ports. This gesture inspires and makes it stress-free for consumers and vendors to move goods and products across boundaries (Banomyong, 2005). In other words, the SAFE Framework takes cognisance of and is predicated on contemporary international production and delivery models. Thus, approved economic operators have the opportunity to reap many benefits, not limited to quicker processing of possessions by the client, for instance, by decreasing inspection rates. One of the most important thrusts of the SAFE Framework is to establish one set of global standards, and this, in turn, transforms into consistency and predictability. In addition, it also moderates manifold and complex reportage requirements.

3.5 Revised Kyoto Convention

The revised Kyoto Convention (RKC) is the primary Customs Convention for trade facilitation. It was developed by the World Customs Organisation and came into force on 3 February 2006. It constitutes an update and modification of the 1973-1974 International Convention for the Simplification and Harmonisation of Customs Procedures (Kyoto Convention).

Through the harmonisation and simplification of customs procedures and practices, the RKC aims to promote trade. The Convention offers guidelines and suggested practices for modern customs procedures and techniques for this reason.

To reiterate, Customs plays a critical role in trade operations and revenue collections, which directly or indirectly affect the private privileges and obligations of citizens (Banomyong, 2006). Therefore, Customs are also expected to play a crucial role in defending society and countrywide security from cross-border movement of proscribed or restricted goods, with the inclusion of illegal drugs (Brooks & Pelot, 2008). In clear terms, the operations, and activities of Customs no doubt require a robust legal framework in order to explicitly set out how its duties and activities can be enforced and implemented (Ng & Gujar, 2008). Therefore, with the absence of a clear and operative legal framework that ensures transparency, predictability and rapid Customs processes, the effect on the international private sector will become severely burdensome not only to conduct trades but such that it will become difficult to compete in an international business environment (O'Neil, 2003).

Thus, it is crucial and represents a critical national interest for countries to uphold Customs activities and operations in a very high sense of dealings that dovetail with international best practices. As a reaction to the intense increase in trade volume and amplified prerequisite for security, many Customs procedures are revising their operations within the context of international best practices and safety standards for the necessities to inculcate legal reforms. Rejuvenation of Customs laws, regulations, and backup legal systems are crucial for modern Customs management to survive with the swelling demands of their services. The International Convention on the Simplification and Harmonisation of Customs Procedures was legislated in 1974 and revised in 1999 (popularly known as the Revised Kyoto Convention-RKC) to provide a robust blueprint for Customs laws and reforms (Ng & Gujar, 2008). South Africa acceded to the Revised Kyoto Convention in 2004.

To recap, the Revised Kyoto Convention was established basically for the regularisation of Customs policies and operations throughout the globe (Ng & Gujar, 2008). It exemplifies best practices of national regulation across the globe, and its operation would allow countries to attain international assurances regarding the trade and border processes, not excluding the guidelines of the World Trade

Organisation (WTO). In addition, the Convention assists each country to arrange its policies and processes to dovetail with the unique lawful, political, and cultural requirements. Other Customs statutes such as the Customs Code of the European Community are neatly related to the Convention (European Union, 1992).

Within the new Customs Control Act (not yet entered into force), the RSA embraces the RKC.

Customs Control Act - Preamble

WHEREAS current customs legislation has not kept pace with technological advances and does not fully reflect the modern standards of the Revised Kyoto Convention and other related international instruments to which the Republic has assented;
AND WHEREAS the Revised Kyoto Convention and these other related international instruments serve as a model framework for modern, efficient, and cost-effective customs control and simplified customs procedures and formalities;
AND WHEREAS there is a need for establishing a new legislative framework for the further development and reform of customs legislation in an open and democratic society;
AND WHEREAS the mere amendment of current legislation will not achieve the desired result of modernisation and transformation of customs legislation and the simplification of customs procedures and formalities;

Since its establishment on 26 January 1952, the World Customs Organisation (WCO) has been developing modern ethics that would support effective Customs administration by inspecting Customs procedures and practices worldwide, collaborating with its member's administration, and liaising with other components of the international communities and agencies (Wang & Oliver, 2004). One of the initial exertions made towards simplifying and coordinating Customs processes eventually led to the Kyoto Convention, which was implemented by the WCO in 1973 and entered into implementation in 1974 (Brooks & Pelot, 2008). In recognition of its global membership, the CCC was renamed the World Customs Organisation. Consequently, globalisation, rapid alteration of international trade configurations, and improvement in information computer technology (ICT) from this period have obliged the WCO and its members to assess and update the Convention. The outcome of the revision of the Convention reflects the economic and technical changes and integrates best practices of member administration. In other words, the Revised Kyoto Convention was implemented by 114 Customs administrations who are members and attended the WCO's 94th session in June 1999 (Ng & Gujar, 2008).

3.5.1 Fundamentals of the Revised Kyoto Convention

As mentioned before, the Revised Kyoto Convention is an international mechanism intended to standardise Customs guidelines and processes throughout the globe. Customs procedures based on national Customs regulations that are in tandem with the convention will give room for Customs to process import, export and international travels aided more appropriately. In other words, the elimination of deviating Customs processes within the global space will allow international businesses to attain and achieve their Customs obligations effortlessly (Ng & Gujar, 2008). In addition, the Convention can aid in the implementation of Customs-related principles established by WTO. The Convention comprises the body of the Convention, The General Annex, and the Specific Annexes. The central body of the Convention is a brief 14-page manuscript that explains in its preamble the vital principles of modern Customs Administrations and discusses the General Annex and Specific Annexes that are essential parts of the Convention. The Articles of the Convention offer explicit rules of consent with regard to the administration of the Convention. The introduction of the Convention explains the following as the regulatory principles:

i. presentation of Customs processes and practice in a predictable and transparent manner;

ii. provision of data on Customs laws, procedures, regulation, and practices;

iii. adoption of modern methods including risk supervision and maximum expected use of IT;

iv. cooperation, where apposite, in conjunction with other national establishments, Customs administration and the wider trade community;

v. application of relevant international standards; and

vi. provision of easily available supervisory and judicial review of affected parties.

The general Annex comprises the main Customs guidelines and procedures, and the precise Annex contains the individual Customs procedures and practices with respect to import, export, and other enforcement measures (Carlue, Alix & Joly, 2008). The Convention obliges countries to consent to the provisions contained in the General Annex and necessitates them to computerise their power system, corporate on trade, legislate risk management procedures, and establish a mechanism to uphold and apprise the Convention (Bichou, 2004). In addition to these available legal articles, there are other meticulous standards and best practices to help nations in the understanding of how to enact the convention. Furthermore, available evidence reveals that forty of the existing contracting parties of the Convention must endorse the Protocol of Amendment for the Revised Convention to reach enforcement.

3.5.2 A synopsis of the Convention

The main highlights of the Convention are discussed in the flowing paragraphs, 35.2.1 and 3.5.2.2:

3.5.2.1 The General Annex

The General Annex of the Revised Kyoto Convention specifies the main principle for all Customs processes and dealings such that there is a level of consistency utilised by all Customs administrations. These processes include normalisation and simplification of goods pronouncement and supporting documents, appropriate necessary control, risk management and audit assessment, quick track procedures for endorsement of persons and entities, transparency, and certainty. The General Annex contains the chief Customs Roles and Definitions, Principles, and Impermanent Standard, all of which possess the same legal worth. The Convention obliges the recognition of the General Annex for consent. In other words, no uncertainties are allowed. To be sure, the General Annex is compartmentalised into 10 chapters as highlighted below:

Chapter 1 of the Convention captures the general principal theme. It explores the two main principles of the Convention, such as the generalisation and management of Customs procedures. Specifically, this chapter captures that the provision as a whole must be implemented in national statutes in the easiest way possible and that the administration of Customs must show some level of cooperation with members of the community at large.

Chapter 2 addresses the definition of terms connected to the diverse level of responsibility and structure of the convention.

Chapter 3 addresses the issue of authorisation of goods. It enunciates the different provisions for the clearance measures (Carlue, Alix & Joly, 2008). The chapter describes the responsibility of Customs to inaugurate Customs offices and scheduled business hours, the requirement of a declarant, their right, and responsibilities, the establishment of the necessary prerequisite for the clearance of goods and other important documentation. In addition, the chapter expressly stipulates the need for coordinated intervention with other government departments and agencies, with a well-articulated procedure to be employed in an instance of unintentional errors and slight offences.

Chapter 4 of the Convention captures the duties and taxes. It highlights procedures aimed at attaining limpidity, certainty, and interpretation of Customs revenue collection exercise that necessitates national laws to stipulate conditions, controls and approaches of duty and tax remission. In addition, it explains the processes for delayed payment and reimbursement.

In Chapter 5, the convention explains the security and protection of the Customs activities. In other words, the chapter explains the processes required for the realisation of transparency and easiness of Customs procedures and practices relating to security. However, national laws must ensure the identification of instances where adequate security is essential and must in clear terms state the nature and quantity of security required (Mensah, 2003). Specifically, the chapter explains that the quantity of security required must be as low as possible and must not surpass the amount that is hypothetically chargeable for payment of duties and taxes.

Chapter 6 of the Convention states issues relating to Customs control. In this chapter, the Convention addresses that all goods arriving or departing Customs terrain are under the control of Customs. In other words, Customs are mandated to enhance their security controls in line with contemporary technologies including techniques like the use of risk management and audit control measures, collaboration with other Customs administration and the entire trade community respectively (Mensah, 2007). Acceleration of international trade is one of the most salient aims of the Convention, and contemporary Customs measures are the key to attaining this aim (De Wulf & McLinden, 2008). Notably, risk management, for instance, accelerates the clearance of appropriate shipment while upholding apposite border regulators through the identification of high-risk cargo (Thibault, Brooks & Button, 2006). Furthermore, it captures a transference from the need to engage in 100 percent examination of booklets and shipment to selective examinations. Therefore, such a platform will permit a Customs administration to improve the utility of its resources and permit the development of a quick access program through which approved traders with genuine compliance records can acquire the release of cargo with appropriate Customs intervention. In specific terms, the overview of audit-based control balance risk management is a crucial element for the effective execution of the WTO Valuation Agreement (Mensah, 2007).

In Chapter 7 of the Convention, the utility and application of information technology to the functions of Customs operations are spelt out. The utility of information technology remains an important aspect of Customs operations such as aiding in the interpretation and harmonisation of Customs procedures and processes. In other words, this chapter mandates Customs administration and procedures to utilise IT as a support system to its operations, especially where it is cost-friendly for Customs and members of the trade community at large (De Wulf & McLinden, 2008). The chapter obliges new or reviewed national regulation to offer for electronic medium of exchange in lieu of paper proceed communication pattern, and the responsibility of Customs to safeguard information as appropriate and share with other Customs entities. The chapter also stipulates that administrations must establish information technology in alliance with all appropriate parties.

The recommendation for this chapter of the Convention offers some important information that will aid Customs in the determination of their duties to improve upon the service they provide to clients and other trading agents with the use of information technologies and other relevant communication technology means.

In Chapter 8, the Convention spelt out the relationship between Customs and other third-party agents. Specifically, the chapter offers the third party the opportunity of conducting business with Customs. In other words, third parties are bestowed with the same privilege as those they represent.

Chapter 9 of the Convention explains Customs information, resolutions, and rulings in Customs operations and procedures. The chapter specifically highlighted essential principles required for Customs to attain transparency and predictability of their process through the utility of law, guidelines, judicial resolutions, and other managerial rulings. Furthermore, the chapter seeks to explain that all information with regards to the operation of Customs must be made to public consumption and that any alterations must be presented prior to effecting such changes (De Wulf & McLinden, 2008). Similarly, the chapter stipulates that Customs administration must offer prompt specific information as demanded by an interested party in addition to any information considered beneficial to the parties. Any opposing decisions from Customs must be well justified with the right of seeking an appeal by parties upon which such decisions are binding. The guidelines spelt out in Chapter 9 of the Convention offer comprehensive information for administrations to establish their measures for publication of information. These include quality and lucidity of information, trade discussion, exhibitions, enquiry offices, and announcement of compulsory rules by Customs (De Wulf & McLinden, 2008).

In Chapter 10, the Convention spelt out issues of appeals in Customs matters. In this chapter, the right of appeal also captures transparency and expectedness of Customs processes and practices. In specific terms, issues covered in this chapter seek to protect individuals in contradiction of the decisions of Customs that may appear opposing or not in tandem with international legislation (Wang & Oliver, 2004). In addition, the appraisals of the challenged resolutions of Customs expressly ensures the application of a uniformed authority in terms of compliance. Therefore, the provisions contained in the chapter offer a multistage petition process and an independent evaluation as a final path of appeal. Ideally, Chapter 10 of the Convention necessitates that national legislation should offer a right of appeal in Customs issues and offers any person affected by Customs decision such a right.

3.5.2.2 Specific Annex

Annex A, Chapter 1 will be discussed below. Annex A deals with the arrival of goods in a Customs territory. It discusses formalities prior to the lodgement of the Goods declaration.

Standards

1. Standard

Customs formalities prior to the lodgement of the Goods declaration shall be governed by the provisions of this chapter and, insofar as applicable, by the provisions of the General Annex.

2. Recommended Practice

Customs formalities prior to the lodgement of the Goods declaration should apply equally, without

Introduction of goods into the Customs territory

(a) Places at which goods may be introduced into the Customs territory

3. Standard

National legislation shall specify the places at which goods may be introduced into the Customs territory.

(b) Obligations of the carrier

4. Standard

The carrier shall be held responsible to the Customs for ensuring that all goods are included in the cargo declaration or are brought to the attention of the Customs in another authorised manner.

Production of goods to the Customs

7. Recommended Practice

(a) Documentation

Where the Customs office at which the goods are to be produced is not located at the place where the goods are introduced into the Customs territory, a document should be required to be lodged with the Customs at that place only when the Customs consider it necessary for control purposes.

(b) Arrival outside working hours

13. Standard

The Customs shall specify the precautions to be taken by the carrier to prevent the goods from entering into unauthorised circulation in the Customs territory when they arrive at a Customs office outside working hours.

Unloading

(a) Places of unloading

15. Standard

National legislation shall specify the places which are approved for unloading.

(b) Commencement of unloading

17. Standard

The commencement of unloading shall be permitted as soon as possible after the arrival of the means of transport at the place of unloading.

Charges

19. Standard

Any expenses chargeable by the Customs in connection with:

- accomplishment of Customs formalities prior to the lodgement of the Goods declaration outside the designated hours of business of the Customs.
- unloading goods at a place other than the one approved for unloading; or
- unloading goods outside the designated hours of business of the Customs, shall be limited to the approximate cost of the services rendered.

3.4 Conclusion

The chapter discussed global security measures of customs. It started with discussing the World Customs Organisation, its roles, and responsibilities. It further discussed risk and security management in customs operations. The chapter further discussed World Customs Organisation SAFE framework and the Revised Kyoto Convention.

CHAPTER FOUR: INTERNATIONAL BEST PRACTICES OF PORTS OPERATIONS

4.1 Introduction

The focus of this chapter is to understand ports' best practices, their operations and performance through international lens. The emphasis, therefore, will be on understanding these criteria from the international best practices of South Africa and Nigeria. The choice of these two countries is predicated on being the two most vibrant economies on the African continent, thus understanding the performance of their ports operations is crucial to gauging of the development and performance of port operations in Africa. The performance of port operations has continued to be a huge source of revenue generation for economies and countries with massive coastal areas (Fedderke & Simkins, 2012). Therefore, the performance of these ports is an important indicator for economic sustainability and growth (Maharaj, 2013). While some ports have been faced with huge operational deficiency culminating in poor performance outlook, others such as South Africa and Nigeria have specifically made this important sector an important driver of the economy.

4.2 Understanding South African ports best practices

It has been shown on all fronts that the South African ports lack a well-defined ports principle for best practices (Fedderke, 2002). Therefore, the South African ports practices possess some fundamentals of the Anglo-Saxon ports practices, some other components resembling the African continent practices while others reflecting what can be termed the Asian ports practices (Krugell & Matthee, 2009). In a sense, many of the South African ports can be described to be experiencing contradictory port objectives as a result of the different practices reflecting in their operations (Gumede & Chasomeris, 2018). In other words, the South African port operations system explicates a system where costs are not in tandem with prices charged, while the revenues and costs of commodities are largely not justified (Bhuckory, 2013).

Studies have shown that approximately 90 percent of total ports trade and operation is seaborne bound while the South African ports trade only share a volume of 3.5 percent of this figure (Fakir & Chasomeris, 2019; Department of National Treasury South Africa, 2013). Specifically, out of all the ports trade activities in South Africa, 98 percent of all of its exports are conveyed through the seaports (Department of National Treasury South Africa, 2013). Interestingly, this confers on South Africa as a major sea trading country with a certain planned geographic arrangement in the Southern African geography (Meyiwa & Chasomeris, 2016).

No doubt, South Africa is to an extent protected from the relatively port competition that ensues when maritime nations are in close range to each other as reflective from the far East and West respectively

(Roberts & Rustomjee, 2010). Therefore, it the country is in a position of benefiting from a strand of transshipment opportunity owing to her geographic location (Chasomeris, 2011). South Africa has a total of eight public ports with the remit of its maintenance levied on one port authority - Transnet National Ports Authority (TNPA). The ports are Saldanha, Cape Town, Mossel Bay, Port Elizabeth, Ngqura, East London, Durban and Richards Bay. Transnet, by virtue of public enterprise legislation is a fully South African corporation with 100 percent of its operations and shares fully owned by the government through the Department of Public Enterprise and other of its detachment (Transnet National Port Authority, 2012). These detachments include Transnet Freight Rail and Transnet Engineering (Havenga, 2010). In other words, TNPA, a former division of Portnet, is now the overall lead in all port activities and facilitates all sea trade in South Africa.

With the expansive role of the seaports and their associated role in the global economy, the seaports represent one of the critical linkages between the local economy and the world economy. For instance, it is explained that adequate development and preservation of the seaports aid in promoting commerce flow and thus contribute to economic development (Bichou, 2004). Therefore, the management of the port, its arrangements and structure reflect an important dimension of what constitutes most port problems (Haralambides, 2002). In other words, what constitutes portadministration greatly influences the pricing guidelines and the competency of the ports. Out of all the eight public ports in South Africa, the Durban port represents one of the busiest in Africa, with the biggest port size in Africa, respectively. However, with regards to its fundamental and sacrosanct role in the area of trade facilitation and its geographic location, the port has been bedevilled with the puzzle of congestion (Notteboom, 2011).

One of the main objectives of the TNPA is to reflect a full-time landlord and operator of all ports in South Africa in contrast to its existing position of being a more or less public port model (Chasomeris, 2013). In other words, as obtainable in other climes, terminal operations and administrations are effectively managed by private operators within the jurisdiction of the landlord ports, however, for the case of South Africa, Transnet a public utility possesses a large function of these operations (Notteboom, 2011). South African ports are public sector driven, although not in their entirety a public entity. South Africa’s competitive position within the international market has been robustly predicated on the survival and growth of its maritime Supply Chains for the exportation of merchandises and raw supplies (Gumede, 2013). The Supply Chain network comprises multiple modal links which are tailored towards achieving effective and efficient delivery patterns.

For instance, the movement of cargo within the Durban port represents one of the most fundamental links within the South African SCM, and a major challenge to the development of port operations in

the country. It has an impact on cargo movements to the hinterland and the trade corridors to neighbouring states.

Within the context of South Africa, there is a propensity to link Supply Chain with the delivery and procurement of goods and competitive advantage in the global market necessitates production enmeshed into Supply Chain functions (Richards' Bay Coal Terminal, 2013). In other words, industrial firms that are seen competing successfully within the global arena are adequately integrating Supply Chain functions into their production activities. The most efficient integration is attained when all the link suppliers within the chain framework contribute effectively to the sole purpose of delivering the products to the location where it is required at the least possible cost, in contrast to the fulfilment of their own ends means (Hoshino, 2010).

The turnaround times for the ports are as follows; In Durban, the turnaround time is one to two days, in Cape Town, there is a similar trend from less than a day to peaking at almost two days and then reducing to just over 1 day, and Port Elizabeth also with one to two days (Benchmarking Report, 2016). The costs of procurement are transaction costs that are separate from the direct costs of a project. The costs involve fixed costs that do not vary with the amount of work undertaken by the firm or with a particular project while variable costs are the opposite of fixed. Short-term costs are those which have to be met in the near future. Long-term costs must eventually be met. Long and short-term are not fixed periods of time but vary according to the matter under consideration. Money costs are outgoings that have a clear monetary value. Social costs are costs to the community. Private costs are costs to the individual or a group of individuals. As the above ports have indicated their turnaround times, the turnaround time plays a crucial role in the costs. The ports have managed to decrease their turnaround time over the years. This is good for the organisation as this means that they can decrease the costs.

Importantly, the South African maritime Supply Chain model integration is not yet developed to compete with those of other climes in the global market. Although the ascending increase seen in exportation by local manufacturers in the automotive businesses, lately is requiring the efficient utilisation of Supply Chains broadening through South Africa's port from other strands of manufactures from other countries (Krugell & Matthee, 2009). Again, it is important to stress that the channelling cargos in Supply Chain is normally done by specialised companies in line with the rules of their Logistics and not by the topography of the ports. In other words, ports are often selected in accordance with saving expedition time at the expense of longer overland transportation wherein the cargo can be conveyed in the shortest possible time (Arvis, Raballand & Marteau, 2009).

4.3 Nigeria port operations

Nigeria manages over 70 percent of all the maritime and sea-related trade in the West-African sub-region as a result of her increasing population and economic buoyancy (Badejo & Solaja, 2017). The incessant deficiencies noticed in her shipping and other Logistics activities led to the concession of Nigeria's maritime seaport terminals (Gbadamosi, 2004). Prior to now, vessels were delayed at ports, and there was ineffective planning, and bureaucracies in terms of clearance made ports activities and performance unattractive, and a chunk of the port's activities was implemented and carried out manually (Ndikom, 2008). In order to address these problems, the Nigerian government in 2006 privatised and and made concessions for the ports (Adepoju, 2015). However, the shortage of adequate storage capacity within the Nigerian ports and its terminal as a result of the unavailability of land and ascending level of congestion within the ports provokes different approaches towards ameliorating these problems.

The Nigerian Ports Authority (NPA) serves the function of managing and developing port infrastructure. It supervises and monitors all Nigerian possessed seaports (Ogunsanya & Olawepo, 2004). Ndikom (2008) contends that ports authority is robustly involved in infrastructure access and operations that have to do with maritime transport and other hinterland activities (Oyatoye, Adebiyi, Okoye & Amole, 2011). Therefore, the supervision and maintenance of dockside, rail yards, storeroom and waterfronts are important to guaranteeing the sustainable performance of port operations and their development in Nigeria (Ogunsiji & Ogunsiji, 2011).

According to Badejo and Solaja (2017), the Nigerian government initially commercialised the NPA into a public entity in 1992, but later privatised it in 1996. This move, as observed by Ndikom (2008), encouraged the purchase of port equipment and other development infrastructure which has continued to pave the way for the growth of the ports, increased revenue, and service quality, especially in the operations and performance of the ports. In contrast, Somuyiwa, Dosunmu and Adepoju (2005) argued that the Nigerian port system does not have sufficient computerised amenities that can upturn the speed and operations of the ports in comparison with what is evidenced in other developing countries. However, the argument then becomes that the maintenance culture attitude of Nigerians represents an important factor to be put in context as it would amount to not having such equipment when the poor behavioural and attitudinal dispositions of port operators are not in tandem with the maintenance of equipment (Ogunsanya & Olawepo, 2004).

The place of port infrastructure and maintenance in Nigeria cannot be over-emphasised. Put in context, the significance of maritime transport as it relates to service delivery in Nigeria and vital aspects of

the economy such as manufacturing, agriculture, energy, tourism and transport, the security and functionality of its operations must therefore be adequately protected for optimum performance (Adepoju, 2015). Several scholarly contentions have been advanced with the position that for effective functions of the ports and their operation, there must be the provision of adequate and well-maintained infrastructure.

One of the turning points in Nigeria's port operations was the 2004 reforms that saw the commissioning of the ports with the aim of restructuring them to meet up with global best practices (Akinyemi, 2015). However, one of the salient attempts towards increasing the efficiency and efficacy of the ports can be traced to the commercialisation of the ports in the year 1992 (Onwuegbuchunam, 2014). However, while much was not evidenced in terms of change in the operations and performance of the ports, the Nigerian government in 2003 undertook a wide-ranging reform program called the National Economic Empowerment and Development Strategy to improve transparency and accountability of the public sector establishments (Aponjolosun, 2018).

Port management and supervision remain crucial for port operations and performance. The organisation and the administration of ports greatly influence their operations and performance (Emeghara, 2008). For instance, economic theories have clearly shown that port authorities tend to apply more sovereignty as the structure and administration of ports develops into a more decentralised outfit (Chioma, 2011). For the case of Nigeria, it is evident that prior to the port's reforms, the NPA was in control of all the operations in both the public and private arm of the establishment. For instance, it sustains and operates all available assets including those that are fixed and moveable, while other concerns related to warehousing and industrial functions were managed by private operators under the watch of the NPA (Onwuegbuchunam, Aponjolosun & Ajayi, 2016). It is important to state that the responsibility of the Nigerian government on the operations of the ports such as in the area of salaries, appointments and other decision-making responsibilities were exercised in full over the NPA (Onwuegbuchunam, 2014).

The centralised system is hindering the operations and performance of the ports on many fronts resulting in high tariffs, abuse of power and complete inefficiency (Alderton, 2008). However, the mismanagement of resources in the face of mounting competition from other countries such as Ghana and Togo affected the operations and performance function of the ports (Gudelj, Krcum & Twrdy, 2010). In other words, the performance of the ports was at its low ebb and there was increased pressure from all stakeholders towards resuscitating the efficiency of the ports (Ajore, 2004). As a result of the reforms, the Nigerian ports were thereafter divided into six different ports authorities including Lagos,

Apapa, Tin Can, Delta, Calabar and Onne ports (Maduka, 2004). Each of these ports was restructured into different terminals which were privatised (Maduka, 2004).

Presently, the NPA now concentrates on planning, development, management, and other safety responsibilities of the ports (Iwori, 2011). However, the Nigerian government still maintains the possession and owns the land and other infrastructure of the ports (Ugboma, Calistus & Innocent, 2006). Importantly, the decentralisation of the ports was sacrosanct and fundamental as a pathway towards expunging the administrative and bottlenecks that had engulfed ports administration; it gave port managers an opportunity to oversee port operations more effectively (Onwuegbuchunam & Okeudo, 2012).

Port operations are essential to international maritime transport and Logistics chain (Oni, 2007). In other words, cargo management interruptions happening in many parts of the Nigerian ports have transformed transport and Logistics around the ports.

Thus, many maritime countries, including Nigeria that are into seaborne trade, have repeatedly provoked strategies towards improving the activities of the ports for optimum performance (Victor, Adepoju & Somuyiwa, 2016).

In most developing countries such as Nigeria, port development and management exertions have been critically hindered by a constellation of challenges such as sparse public finance and other managerial requirements (Okorigba, 2008). These challenges have been enhanced with the increasing growth of the globalisation of production, technology, and other maritime activities. In most of the Nigerian ports, considerable funding is required to facilitate upgrading of the ports at all levels. In addition, the decreasing government funding climaxed into insufficient ports and maritime access infrastructure, which to a large extent, became manifest in dwindled levels of efficiency and delayed clearance of containers at the ports (Somuyiwa, 2008).

On the other hand, the private sector was saddled with responsibilities in terms of purchase, construction, and other port activities (Okeudo, 2013). Some of the specific port performance concerns that the reform seeks to address include the need to increase and enhance efficiency through the privatisation of terminals to private ownership, lessening the cost associated with services to the port users by offering a less competitive market-driven price and reducing government outflow on the maintenance of the ports (Somuyiwa, 2008).

The port access road linking both the Tincan and Apapa ports has been renowned for serious grid traffic caused by the presence of too many vehicles struggling for road space, amidst a large number of trucks packed on both sides of the road.

This has led to occasional additions such that the available infrastructure cannot effectively cope with this demand (Victor, Adepoju & Somuyiwa, 2016). There have been varying arguments with regards to port productivity and performance using gauges such as turnaround time and other human capacity development measures to assess the functional performance of ports (Chioma, 2011).

In other words, an operational and active seaport is conceived as one that creates the capacity of cargo essential for the country, furnished with all of the essential facilities for cargo handling and other important equipment required for the handling of all shipping dealings (Gudelj, Krcum & Twrdy, 2010). Therefore, port operations should be harmless for all operators and cargo, specifically in terms of being environmentally safe (Ehbenine, 2009 Quansah, 2008)).

The next section will be addressing designated ports in South Africa, in terms of their operations and performance.

4.4 Ports in South Africa

The global practice of port operations is to allow the Supply Chains to connect with each other and the negligence on the part of any country to facilitate international best practices for their exporting nations often results in some dire consequences on the economic development of such nations (World Bank, 2013). In other words, ports are often the most important in these international Supply Chain links, with evidence from the past decades reflecting that several stakeholders including the district councils and other business investors have committed hugely to the development of these ports. These partnerships have been established to ascertain unified interfaces amongst shipping connections, port stations and land transport (World Bank, 2013).

Specifically, the surroundings and geography of the Durban port incorporate a large chunk of South Africa's neighbouring countries to the North and in alignment with global trends and practices should be advanced as the main connection in well-organised international Supply Chains of all cargos aiding the country (Arup, 2008). In other words, it is important to have considerable arrangements not only in the port, but in scenery rail and the road links which will allow cargo to move effortlessly and swiftly through the port terminal (Valodia & Velia, 2006). In a report by Transnet in 2012, it was highlighted that approximately 65 percent of South African combined ratio of import and export is shipped through the Durban port. However, it is also important to note that the port has been ineffective in terms of its capacity to function optimally owing to the frequent delays in the clearance of cargos that have persisted for many years.

South Africa has the biggest amount of intra-regional maritime links providing uninterrupted access to 29 other countries within the African continent (Department of National Treasury South Africa,

2013). However, with the increase in maritime transportation volumes, at their heights, South African ports controlled approximately 158 million tons in the year ending 2008, although relatively experienced a drop in 2009/2010 as a result of the global financial crisis (Department of National Treasury South Africa, 2013). Interestingly, the rising demand at the South African ports exceeds the combination of all countries both in Eastern and Southern African countries. Therefore, with a collection of eight networks strategically located across the country, the country has a fundamental responsibility in the international global trade, especially for the Southern African countries.

In terms of performance outlook, it is generally acknowledged in comparison to other countries in the South African space that South Africa and all its connected ports is ranked 28th in the Logistics Performance Indicators, with a follow up by Senegal coming 58th position (Department of National Treasury South Africa, 2013). In addition, South Africa is estimated to be controlling the highest number of containers to an approximate number reaching 3.9 million in 2008, exclusively with the Durban port accumulating over 60 percent of this number (Department of National Treasury South Africa, 2013).

4.5 South African port performance

As indicated earlier, the TNPA, as the landlord of all South African ports, is saddled among other responsibilities the task of performing port operation oversight towards ascertaining that the port terminals continue to enjoy international competitive advantage (Notteboom, 2011). However, this is accomplished by assessing important functioning performance standards to increase marine and terminal performance in accordance with set targets, benchmarks, customer demands and in gauging port performance.

The TNPA has often established active targets for sea operations and emphasise its focus on four known performance indicators, namely:

- port waiting time;
- container dispatch time;
- dock occupancy; and
- dock utilisation charges (Strandenes & Marlow, 2016).

However, these pointers are assigned for the measurement of ports' crucial drivers, especially those to do with dwindling unnecessary port time, attaining all-out quantity and effectively utilising the complete port user-experience to improve port performance (Lee & Flynn, 2002).

4.4.1 Challenges include, but are not limited to:

To start with, port waiting time is the resultant effect of poor quay and dock operations and adds to the complete port turnaround time for containers that cannot berth on entrance.

In other words, lengthier waiting times are relatively related to the puzzle of port cramming, and also add to dock and landside challenges (Valodia & Velia, 2006). Approximately, as a way to monitor ports performance, the TNPA has set a performance waiting time benchmark for the following ports including 50 hours for Ngura Port, 46 hours for Durban Port, 34 hours for Cape Town Port and 30 hours for Port-Elizabeth Port, respectively (Transnet National Port Authority, 2012). However, these standards appear to be predicated on the nature of the deal each of these ports is offering, especially with consideration to the size of the vessel in particular (Havenga, 2010). To be sure, the turnaround period as stated in this fashion explains the period between the stretch of time a vessel arrives at the seawall, loads and offloads, up until its departure.

Furthermore, vessel dispatch time represents an important pointer for the value of the dock operational effectiveness and necessitates to be retained at least in order for TNPA to allow for improved traffic (Haralambides, Verbeke, Musso & Benacchio, 2010). In addition to vessel dispatch time, for example, the Durban port has a set target of 57 hours to allow for a maximum sojourn of at least between two and a half days at the dockyard. The Durban port has the highest dispatch time in comparison to other known ports in South Africa (Transnet National Port Authority, 2012). The port of Ngura on the other hand seems the second largest vessel dispatch in comparison to that of Cape Town and Port Elizabeth, respectively.

The wharf tenancy rate represents an important pointer for TNPA as it explains the entire available time that wharfs are engaged by ships (Havenga, 2010). This pointer is important for obtaining and assessing the port's activity since it is in the good interest of TNPA to ascertain that the wharfs are not over congested in the best ways possible. In other words, a high wharf tenancy rate only explains that the wharfs are occupied and that ships cannot at easily dock on arrival. Therefore, poor performing wharfs as a result of operational dares can cause ships to stay much longer at the dock than expected.

On the other hand, a dock yard with a lesser occupancy rate reflects a level of underutilisation of its infrastructure (Notteboom, 2011). In other words, a port's dock tenancy rate must be balanced up to a level where berth docks are reasonably occupied and effectively used in order to allow ships to dock almost immediately after arrival. The last indicator of port performance is the extent of dock utilisation. Importantly, this performance measure represents the percentage of the definite working time at the

dock in line with the specific time in which the dock is occupied by ships. Therefore, as evidently shown dock occupancy and dock utilisation are crucial indicators of a port's performance.

4.4.2. Potential solutions:

South African ports, like any other ports are entrenched with port system challenges ranging from administration and control. In specific terms, of the challenges include infrastructural deficit, poor port investment, moribund technology, non-availability of port space for ships to dock, unregulated port pricing and poor arrangement of port facilities. Others include snowballing cramming, lack of manpower skills to effectively manage the port activities, poor maritime linkages, the question of unemployment rate and poor provincial integration, amongst others (Gumede, 2013).

The heritage of South African port system and pricing mechanism is designed in a way that supports the pattern of the import exchange economy (Gumede, 2013). For instance, prior to 2002, the South African ports system had a pricing regulation that exuded a percentage far below the actual cost of recovery for some specific port functions such as maritime infrastructure and other associated services (Krugell & Matthee, 2009). Thus, the charges for cargo were almost close to related costs, and cargo functions were supplemented to subsidise for maritime functions, respectively.

Going-forward, a more adequate and effective competitive system is required within the South African port system. For instance, one of these measures was the replacement of the ad-valorem duties (in proportion to the estimated value of the goods or transaction concerned), with a collection of cargo dues that appears cost-friendly and eliminates the prior discrimination against high-worth cargo (Krugell & Matthee, 2009), such that South Africa is brought close to best international practices. As it is presently, cargo dues are charged on a unit-by-unit basis for docked vessels. The transformation of this trend to the present cargo dues is borne out of the need to reduce the effect of excessive cost indiscretions in all the ports and docks.

The rise in maritime dues aids in reducing the possible effect of cost subsidisation. However, on the part of TNPA, it has been clearly expressed that port-related costs need to be reduced to synchronise with the country's continuous inflation and poor economic conditions. From 2005 up until 2009, TNPA has been able to effectively manage, a rate below the inflation price mechanism (Gumede & Chasomeris, 2019).

4.5 Durban port in focus

The Durban Port has been part of a national department. However, what was later known as the City of Durban has in the past been under the control of the municipal tracing its establishment since the mid-1800s (Transnet National Ports Authority, 2012).

However, both organisations represent a distinct entity. The goal of the Durban port was to maximise the capacities of freight across the dock in order to minimise associated cost, while the goal of the city was predicated on maximising economic benefits for its citizens and its neighbouring industries and in the long run dealing with transport congestion. The relationship between the city and port could be described as antagonistic, based essentially on the management of the two entities. The wrestle continued until the Scottish retired from service (Roberts & Rustomjee, 2010). However, commencing from the 1990's, the city and the port began working closely together, although with little evidence distinction in terms of their separate mandates and goals (Gumede & Chasomeris, 2018).

At the core of the Durban economy is the Durban Port and other related business activities. The port is estimated to employ approximately 50,000 people, yet there is a collection of companies that rely on the port indirectly or directly for survival (Maharaj, 2013). For instance, amongst these companies is Toyota South Africa who have their business close to the Durban port for ease of importation and exportation. Furthermore, there are other freight and logistics firms whose business activities are related to the sea trade. These firms include maritime firms. Therefore, it is interesting to state that the growing prominence of the maritime sector is neatly related to the growth recorded by the Durban port over time (Bhuckory, 2013). Similarly, other fast-moving consumer goods (FMCG) all have linkages to the activities of the port.

Geographically, the Durban port has a total of 59 docks and a single float anchorage point (Transnet National Ports Authority, 2012). The Durban port approximately represents 64 percent of the total number of containers handled across South Africa's ports (Bhuckory, 2013). The operational function of the port is expressed with real-time rail and road links to all other SA ports, but mainly to the Gauteng province due to the share volume between the port and Gauteng. The known activities handled at the Durban port include the container terminals and other docks that handles vehicular (roll-on and roll-off stock, aka Ro-Ro), agricultural products, steel, coal, forestry, and other essentials, respectively.

The port in addition to this operates as a trans-shipment centre for East Africa and the Indian Ocean, respectively. Territorially, the Durban port is stretched by 2128 meters' dock separated into 10 docks, with 13,000 earth slots (Transnet National Ports Authority, 2012). The Durban port is grounded by a joint volume of 3.6 million twenty-foot equivalent containers (or 6m containers) every year and essentially operates as two separate terminals.

In addition, the Durban port terminal has the maximum Truck Turnaround Time (TTT) with an average of 43 minutes against the set standard of 35 minutes (Transnet National Ports Authority, 2012). This is so because the Durban port represents the largest physical terminal and the only port dealing with

the highest number of cargo in terms of volume in South Africa (Bhuckory, 2013). Also, there is a range of reasons for the Durban port's high turnaround time. Essentially, this can be related to the fact that all the tons are opened almost immediately when imports are received at the port. However, there is sparse equipment that can be used to handle incoming lorries with transfer cargo.

Furthermore, the number of cargo passing through the port of Durban is favoured by its strategic position. For instance, while the port has in recent times invested hugely in terms of advancing its infrastructure and other equipment to boast its efficiency, the problem of port congestion and other efficiency issues have been hindering the efficacy of the port in many ways (Valodia & Velia, 2006). Although considered not a very important issue, the expensive structure of port pricing at the Durban port is a threat to the performance of the port.

Specifically, the principal threat for the Durban port is plausible to be from the port of Bagamoyo. It is estimated that the development of this port as envisaged will roll out 20 million truck turnaround time which is expected to outlay South African ports by 2023 (Transnet National Ports Authority, 2012). In addition, the sustainability of the Durban port is doubtful in the future, as the revitalisation of the Technobanine port possess some threat to the Durban port (Valodia & Velia, 2006); however, in the long run, the Durban port is expected to be on the frontier of providing a wide range of port services. In contrast, while it is expected that some cargoes may be lost with the improvement seen in other Southern African Development Community (SADC) ports, the Durban port is positioned to remain the port of choice among other South African ports (Meyiwa & Chasomeris, 2019).

4.5 Conclusion

The chapter discussed the international best practices of port operations. The chapter firstly discussed the Nigerian port operations to provide an understanding of how they operate. The chapter also provided an understanding of South African ports' best practices. The chapter presented the challenges that the South African ports face. Lastly, the Durban port in focus was discussed.

CHAPTER FIVE: RECOMMENDATIONS

5.1 Introduction

This chapter presents the recommendations concluded by this study. Using a desktop review, with reference to Transnet Port Authority, the focus of the study has fundamentally been to understand the impact of SCM initiatives on security measures, rather than vice versa. In a bid to ensure that the entire research dovetails coherently, this chapter is chronologically arranged into different components. The first section explains the summary of each chapter, while the second highlights major recommendations of the study based on the findings of the review. The last section presents future research areas.

5.2 Summary of chapters

- In Chapter 1, the study attempts to understand how SCM initiatives are employed for attaining security measures at the ports. Understanding the fact, the port security is essentially tied to the available security measures and how Supply Chain activities are managed, the study seeks to understand whether the South African port systems have made available provisions for the security of its ports, particularly the Durban port. Chapter 1 presents the background of the study, other important themes including the description of the research problem and the justification for the study. The chapter also explains the important question of security at the global level and a synopsis of the 2011 terrorist attack. This is vital to provide a clearer picture of the nature of port security at the global level.
- Chapter 2 of the study reviews important themes from the extant literature. For instance, the chapter reviewed several themes through diverse lenses. While a number of the issues reviewed are centred around port security and its operations, other themes reflect an analysis of the South African economy through the operation of the ports. For emphasis, these themes include the South African economy through the lens of the seaport economy sector, conceptualisation of SCM, Supply Chain functions and security measures. Furthermore, while several issues have been reported as hindrances to port security, the chapter uncovers factors hindering the free and secure movement of goods and services at the seaport. Lastly, the chapter reviews the Principal-Agent Theory as the theoretical framework of the study.
- Chapter 3 explores the global security measures of Customs. To appropriately address this issue, the chapter reviews the World Customs Organisation and its security measures, risk and security management in Customs, World Customs organisation SAFE Framework, goals and principle of SAFE Framework and Fundamentals of the SAFE Framework. Others are benefits

of the World Customs Organisation SAFE framework, the Revised Kyoto Convention, and the fundamentals of the Revised Kyoto Convention, respectively.

- Chapter 4 presents international best practices of port operations. The chapter presents a comparison between the two most vibrant economies in Africa in terms of port operations and other security measures. It presents Nigeria's and South Africa's port operations and the associated challenges. Lastly, the study focuses on the Durban port operations and security activities.

5.3 Recommendations

Fundamentally, research of this nature, necessitates policy recommendations. On this note, the policy recommendations itemised in this study relate with the findings of the review of this study. Port security and operations are being threatened by different forces of terrorist attacks and thefts, while many consequences in terms of goods and humans are being recorded because such acts. Consequently, for effective security measures against these challenges, many countries' port operations are now left with the need to constitute effective security measures towards mitigating the effects of these serial attacks on the ports. The survival challenge for port systems across these countries is to devise and connect with robust security measures to avoid being continued victims of terrorist attacks at the seaports.

Although South Africa has been at the forefront of increasing her ports' security to avert and reduce attacks on goods and humans at her various seaports, it must, however, robust security measures are more than ever needed at this critical time that the world is undergoing different shades of changes as a result of the ascending influence of globalisation. In addition, this queries government and other stakeholder's responsibilities in developing an appropriate framework and security policies, and crucial legislations that will be enacted to increase the safety of goods and humans at the ports. While this responsibility is rested on relevant agencies such as TNPA in the South Africa case, this does not exclude the support of the government in the realisation of this objective. It is highly evident that the customs authority with its new and emerging role in security within the supply chain, can be a benefit to a partnership with port authority.

Importantly, the contribution of government from this perspective can be conceived from the need to initiate discussions between the different stakeholders in port systems and other security outfits for effective port security.

Accordingly, the review attempted in this study is a revelation for policy implications, required for the safety and operations of the South African seaports and to reduce the rate of security threats throughout

its ports. Therefore, it is important to emphasise that the South African seaports, especially the Durban port on which this study is focused, need a policy framework that will consider the safety of humans and goods at the seaports. In a nutshell, the following policy is recommended based on the findings of the review of this study.

5.3.1 A more effective and robust monitoring function by South Africa's Ministry of Transport

It is acknowledged that South Africa's Ministry of Transport is saddled with the remit of monitoring all forms of transportation in the country, including the transportation of seaports. One of the important reviews uncovered in this study is that less responsibility has been released for the Ministry of Transport in ensuring the safety of the port, while too many tasks have been relegated to TNPA in this regard. From this standpoint, it is explicit that South Africa's Ministry of Transport has not been doing much in monitoring port activities and operations for security measures and best practices. On this ground, the study recommends that South Africa's Ministry of Transport should strongly assume the duties of monitoring the activities of all seaports in the country, especially the Durban ports for effective security measures of goods and humans at the ports.

This recommendation, in other words, becomes highly imperative considering the urgent need for security measures and control at the seaports. For instance, the state and conditions of many seaports in South Africa are a testament that an urgent policy framework is needed to constitute robust security checks that could address present security threats and foreseen security challenges. In other words, the necessity of reducing many of the seaport threats and attacks is attached to guaranteeing that consistent and effective monitoring functions are well-tailored, and followed by the relevant government agencies such as South Africa's Ministry of Transport. However, this component of the recommendation will be inadequate without political will on the part of South Africa's ministry of transport.

5.3.2 The need for a genuine legislative review of seaport laws and regulations

There is an urgent need for a review of existing legislative laws and policies in South Africa to ensure the incorporation of international best practices and the safety and security of the seaports in general.

The agenda of seaport terrorism is clearly to sabotage any efforts channeled towards the realisation of port safety and security. Therefore, as a measure to these challenges, the South African government must realise the need to review the existing seaports legislation in the country for a more proactive safety of the seaports at large. The South African government must also ensure that necessary provisions are clearly spelt out in the reviewed legislation on how the security of the ports can be

guaranteed for the safety of humans and goods. To do this, vital political will must be inspired by the government and all relevant policy-making organs in the country.

5.3.3 Addressing the challenge of corruption in the operations of seaport activities

In order to achieve practical development and effective security at the seaports, the challenge of corruption in the operation of many of the South African seaports must be urgently addressed. The mass of corrupt practices within the management and control of seaports pose constraints to building effective security structures around the seaports. Therefore, it is recommended that the government constitute a proper check mechanism, where for instance, all the suspected cases of corruption among those managing the activities and operations of the seaports will be thoroughly looked into. Importantly, it is imperative to state that corruption has permeated many seaport operations in South Africa, and this no doubt has been a major problem limiting how far effective security apparatus can be realised in seaport operations.

Therefore, the leadership of port management, specifically, must realise that exertions towards securing of the ports are also tied to the reality of eradicating any form of corrupt practices in ports operations. In addition, effective channels must be constituted to punish port managers, who are sabotaging the realisation of security and safety of the ports through incessant corrupt practices. This can be achieved through the review of extant seaport laws, where punishment will be spelt out for corrupt seaport officials. With this, the South African seaports could attain appropriate security of the ports in terms of safeguarding human lives and goods.

CHAPTER SIX: CONCLUSION

The SAFE Framework has brought about positive changes in the Supply Chain. One of the main reasons for its implementation is the harmonisation of the criteria for advanced cargo information and the use of a standardised approach to risk management in order to counter threats. This brings about less work and faster turnaround times for suppliers and buyers. The SAFE Framework also offers an important consolidated agenda that will enhance global trade, safeguard security against terrorism and other types of crime, and upturn the support of Customs and other trade associates to the economic and social well-being of countries (Psaraftis, 2005). The issue of crimes and terrorism of countries is an important topic. Looking at South Africa, we have been fortunate that we have not had to deal much with issues of terrorism. Be that as it may, there should always be security measures in place in case such an event takes place. The issue of crimes related to trade, affects most countries. With the implementation of the SAFE Framework these crimes can decrease.

Information sharing in the Supply Chain is crucial for the smooth flow of the chain[5]. There must always be procedures and processes that must assist in the smooth flow of port operations. The SAFE Framework assists in such a need. The development and improvement of Customs-to-Customs network arrangements to facilitate the smooth flow of goods across safe foreign trading supply chains are some of the key thrusts of the SAFE System. This network agreement would, inter alia, result in the sharing of timely and reliable information that will culminate in customs administrations being more efficient in managing risks. In such conditions, the SAFE Framework also allows for reciprocal acceptance of controls. The introduction of this tool would enable customs administrations to take a wider and more detailed view of the global supply chain and to create opportunities to reduce overlapping and various reporting requirements. The above discussion mentioned the important tips for effecting implementation of the ISPS Code. These tips include access control, vessel search, restricted area control, stores and deliverables check, documentation control, SSAS regular test, and drills and briefings/training. The tips seem to be adequate for vessels.

In South Africa, many policies have been rolled out with regards to the regulation of SCM initiatives for the security of the seaports. Sadly, there has not been much interrogation of these policies to access their effectiveness for the security of the seaports. In line with the findings from the review attempted in this study, serious attention must be paid to eradicating the insecurity that has characterised many of the South African seaports. Therefore, this becomes vital through the experiences of other African countries who have been able, at least to an extent, to tame the tide of insecurity at the seaport through

[5] The Johannesburg Convention allows for the legislative rights to the sharing of information, and this will assist the seaport authority strategically in security measures.

effective security strategies. Hence, the failure of putting appropriate security networks and checks in place will only engender more daring seaport activities and operations. The conviction that the seaport signals an important component of the South African economy, and any economy for that matter, is undoubtedly the verity that critical measures must be put in place for the security of these seaports.

The study concludes that the threat and evidence of insecurity at the various seaports are largely due to the inability of the management of these seaports to effectively control the inflow and outflow of Supply Chain functions at these seaports. Thus, for these seaports to remain safe for both humans and goods, reasonable security measures must be effectively considered and thoroughly brought to the fore. The study also concludes that, while the consequences of the lack of security at the seaports continue to manifest, with little or no frantic efforts on the part of relevant government departments such as the Ministry of Transport, there are severe consequences for the functioning and safety of the South African seaports, respectively. The discernment that the government is not robustly provoked for ensuring the safety and security of the seaports is a clear testament to this important conclusion. However, the study suggests a more potent government responsibility as the only robust means through which the security of the seaports can be guaranteed. Based on this, the study reasoned for varying conclusions, on the part of the agencies of government such as TNPA saddled with the responsibilities of ensuring the security of the seaports. While this responsibility is effectively pursued, the study envisages improved security situations of the seaports.

Summarily, the study robustly stressed that the non-inclusion of severe punishment for offenders of the seaports rules and regulations is jeopardising the security of the seaports. The study calls for extant laws to depict important consequences for port security and safety offenders, in particular, corrupt managers.

To be specific, the government must come to terms with the reality that threats to port security have come to stay with the rising influence of globalisation. In other words, security attacks and threats are a possibility at the seaports and these may continue to happen for a long time to come. In other words, identifying with the necessities of bringing on-board workable tactics that can fittingly address the ascending security threats at the ports is crucial for the safety of humans and goods.

Lastly, the study concludes with the point that all security measures should be measured not only for the short-term benefits but also for the long-term benefit of protecting humans and goods at the seaports. The study hopes to incite a more interesting discourse on how SCM initiatives can be used for the sustenance of port security. Perhaps, an examination of plausible solutions to eradicate the security challenges of seaports would engender a new frontier for port operations.

Nevertheless, the study concludes that more is anticipated from the part of the government by chatting for sustained security of the seaports and ensuring that security and safety of the ports are attained. The case for this contention is a reminder that with the safety of the seaports, not only will the lives of humans and goods be sustained, but also the economy would witness a striking development. The dual role of security can translate into a bond and benefit all stakeholders.

The WCO has introduced the economic competitivity package (ECP) which is currently a matter of high priority at the WCO. The Economic Competitiveness starts with trade facilitation and customs administrations which play an important role in this respect. As WCO's key objective, facilitating trade through appropriate security measures, the organisation has contributed its tools and instruments including technical assistance to increase the economic competitiveness of its members.

A constant refrain in this study is that a chain is only as strong as its weakest link, so an organisation may have an impregnable security system, yet if any of its business partners or service suppliers does not have as good a system, then the opportunities for security breaches in the supply chain would arise. It is thus important that we select business partners who also practice security in their operations. The term "Business Partners" refers to current and prospective suppliers, manufacturers, service providers, contractors, and vendors that an organisation contracts with, to assist in its function and role in the supply chain. Here, the term "Business Partner" does not include a "Trading Partner", which refers to the merchant or customs who buys the organisation's product or service. The objective of Business Partner Security is to extend supply chain security to include the organisation's business partners by collaborating with them and having them commit towards formulating and executing reliable supply chain security measures, as cargo is moved from the point of origin to its destination.

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Appendix A: Ethical Clearance

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

12 October 2017

Mr Mthobisi Sydney Busse (208513689)
School of Accounting, Economics & Finance – Maritime Studies
Howard College Campus

Dear Mr Busse,

Protocol reference number: HSS/1828/017M
Project title: The impact of Supply Chain Management (SCM) security measures in global trade on the South African economy

Approval Notification – No Risk / Exempt Application

In response to your application received on 27 September 2017, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL.**

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

[redacted]

Dr Shenuka Singh (Chair)

/ms

Cc Supervisor: Mr Mark Goodger
Cc Academic Leader Research: Dr Colette Muller
Cc School Administrator: Ms Nondumiso Mfungeni

Humanities & Social Sciences Research Ethics Committee
Dr Shenuka Singh (Chair)
Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Telephone: +27 (0) 31 260 3587/8350/4557 **Facsimile:** +27 (0) 31 260 4609 **Email:** ximbap@ukzn.ac.za / snymanm@ukzn.ac.za / mohunp@ukzn.ac.za
Website: www.ukzn.ac.za

Appendix B: Editorial Certificate

EDITORIAL CERTIFICATE

Author: Mr Mthobisi Busse

Document title: Trade Security in Supply Chain: The Roles of Customs and Port Authorities towards Security and Trade Facilitation in South African Ports

Date issued: 14/08/2021

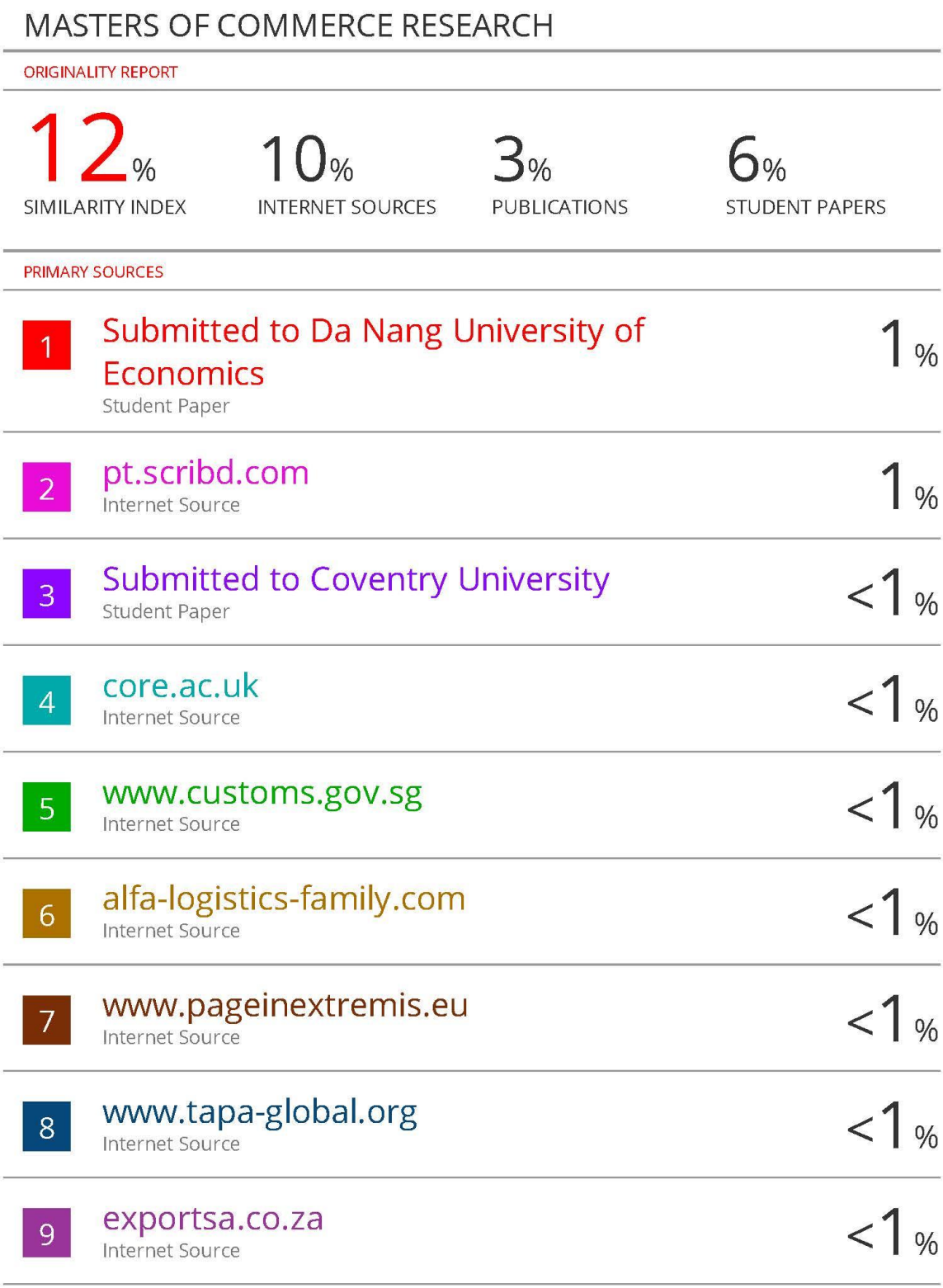
This document certifies that the above manuscript was proofread and edited by Prof Gift Mheta (PhD, Linguistics).

The document was edited for proper English language, grammar, punctuation, spelling and overall style. The editor endeavoured to ensure that the author's intended meaning was not altered during the review. All amendments were tracked with the Microsoft Word "Track Changes" feature. Therefore, the authors had the option to reject or accept each change individually.

Kind regards

Prof Gift Mheta (Cell: 073 954 8913)

Appendix C: Turnitin Report



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