

**ECOLE DES HAUTES ETUDES
COMMERCIALES D'Alger
EHEC**

**Thesis Submitted in partial Fulfillment
Of the Requirements for Master's Degree in Commercial Sciences**

Major: Distribution and Supply Chain Management

International procurement in COIVID-19 Era

CASE STUDY: Algerian Qatari Steel

Submitted by:

Ms. Selsabil GHERBI

Supervised by:

Mrs.Naima MESSAOUDI

7th promotion

Academic year 2019-2020

[This page was left intentionally blank].

**ECOLE DES HAUTES ETUDES
COMMERCIALES D'Alger
EHEC**

**Thesis Submitted in partial Fulfillment
Of the Requirements for Master's Degree in Commercial Sciences**

Major: Logistics and Supply Chain Management

International procurement in COVID-19 Era

CASE STUDY: Algerian Qatari Steel

Submitted by:

Ms. Selsabil GHERBI

Supervised by:

Mrs.Naima MESSAOUDI

7th promotion

Academic year 2019-2020

Acknowledgements

Firstly, I thank God almighty for giving us faith in him and the strength to realize this work.

I might thank my Professor, Naima MESSOUADI, whose expertise was significant in formulating the research methodology and questions. Your constructive criticism and feedbacks carried my work to a more significant level.

I would like to make a special reference to Mr.Karim KEHAL, the Principal Purchaser and at ALGERIAN QATARI STEEL. His cooperation in providing me with the relevant data and insight has broadened my knowledge and perspective on purchasing in general and greatly contributed to the completion of this project.

My appreciation also goes to my friends and colleagues. Without their relentless effort and encouragement, this thesis would not have been written or completed.

Above all, my deepest gratitude and appreciation to my lovely family for their unconditional love, support and prayers that have carried and sustained me on this journey.

Thank you very much for making it all possible.

ABSTRACT

The wild spread of the coronavirus 19 pandemic crippled the world and exposed the critical importance of supply chain management, significantly reduced business activity around the world, and led to the cancellation of several projects.

Procurement, as an essential part of logistics, has also failed to stay outside the borders of the pandemic crisis. The impact of the pandemic on procurement and the main areas of procurement during coronavirus are the subject of consideration in this research work.

Despite, the negative impacts of COVID-19 pandemic still have a positive side; for example, organizations will know how supply chain structures and processes can be adjusted in case another pandemic shows up.

Keywords: COVID 19, Procurement, Supply chain management.

RÉSUMÉ

La propagation aléatoire de la pandémie de coronavirus 19 a paralysé le monde. Elle a mis en évidence l'importance cruciale de la gestion de la chaîne d'approvisionnement, elle a réduit considérablement l'activité commerciale dans le monde et a provoqué l'annulation de plusieurs projets.

De même, en tant que composante stratégique de la logistique, les achats ne sont pas parvenus à se maintenir hors de la crise liée à la pandémie. Les répercussions de cette dernière sur les achats et les principaux domaines d'approvisionnement au cours du coronavirus ont fait l'objet d'une réflexion dans le présent travail de recherche.

Néanmoins, le bilan négatif de la pandémie COVID-19 a également un revers positif. À titre d'exemple, des entreprises ont appris de quelle manière les structures et les processus de la chaîne d'approvisionnement peuvent être adaptés en cas de nouvelle pandémie.

Mots-clés : Pandémie, gestion de la chaîne d'approvisionnement, achats

تلخيص

أدى الانتشار الهائل لوباء فيروس كورونا 19 إلى شلل عام و كشفاً لأهمية الحاسمة لإدارة سلسلة التوريد، وقلل بشكل كبير من النشاط التجاري في جميع أنحاء العالم، وأدى إلى إلغاء العديد من المشاريع. كما فشلت المشتريات، باعتبارها جزءاً مهماً من الخدمات اللوجستية في البقاء خارج حدود أزمة الوباء. يخضع تأثير الوباء على المشتريات والمجالات الرئيسية للمشتريات خلال فيروس كورونا في الاعتبار في هذا العمل البحثي. على الرغم من الآثار السلبية لوباء COVID-19 لازال لها جانب إيجابي على سبيل المثال سيكون لدى المنظمات معرفة بكيفية تعديل هياكل وعمليات سلسلة التوريد في حالة ظهور جائحة أخرى.

الكلمات المفتاحية: كورونا 19، إدارة سلسلة التوريد، مشتريات

List of figures

Figure N°	Title	Page
Chapter I		
1	Supply Chain Structure	07
2	Supply Chain Processes	09
2	Supply chain Traingle	11
3	Company Value Chain	21
4	International procurement	31
Chapter II		
1	Timeline for the beginning of the outbreak of H7N9	35
2	Emerging and re-emerging infectious diseases	37
3	The great lockdown 2020	48
4	Weekly Brent, OPEC basket, and WTI crude oil prices	49
5	Monthly food price index	50
6	Africa's Economic Growth between 2000 and 2019	51
7	African Exports (%)	52
8	Trade Partners of Africa	53
9	Oil and tourism sectors (in % GDP) for the Big 5 Economies	54
10	Oil Revenues of top 10 African countries oil producers	56

List of tables

Table N°	Title	Page
Chapter I		
1	Internal and external Supply Chain Risk	12
2	Purchasing VS Procurement	20
Chapter II		
1	Characteristics of the three influenza pandemics of the 20th century	35
2	Major Economic Forecasts, Differing Assessments	47

List of abbreviation

AHC	Acute Hemorrhagic Conjunctivitis
BPD	Barrel per Day
CFR	Case-fatality Ratio
CSCMP	Council of Supply Chain Management Professionals
COVID-19	Coronavirus Disease 2019
EOQ	Economic Order Quantity
EVD	Ebola Virus Disease
EU	European Union
GDP	Gross Domestic Product
GHRF	Global Health Risk Framework
IATA	International Air Transport Association
IFM	International Monetary Fund
ILO	International Labor Organization
ISM	Institute for Supply Management
JIT	Just In Time
MERS	Middle East respiratory syndrome
MP	Michael Porter
MRO	maintenance, repair, and operations
NAFTA	North American Free Trade Area
OECD	Organization for Economic Cooperation and Development
OPEC	Organization of the Petroleum Exporting Countries
SC	Supply Chain
SCM	Supply Chain Management
TCO	Total Cost of Ownership
UNTACD	United Nations Conference on Trade and Development

WEF	World Economic Forum
WHO	World Health Organization
WTO	World Trade Organization

Summary

General introduction	01
Chapter I: Supply Chain and international procurement	05
Section 01: Supply Chain Operations	05
Section 02: Procurement and international sourcing	18
Chapter II: COVID-19 and its impact locally and globally	33
Section 01: Diseases outbreaks and pandemics	33
Section 02: Current international economic context and novel COVID-19	43
Chapter 03: Algerian Qatari Steel: Procurement in the age of Coronavirus.	62
Section 01: General presentation of the company.....	62
Section 02: Research methodology.....	68
Section 03: Result presentation and data analysis.....	69
General conclusion.....	78

General Introduction

General introduction

Within the context of an environment in which natural and human-made catastrophes seem to be increasingly common, the issue of supply chain risk has forced itself onto the corporate agenda of all the world's largest multinationals.

Disasters such as the Japanese tsunami and the Thai floods have not only wreaked havoc in regional supply chains, but they have also had far-reaching consequences for manufacturers and retailers many thousands of miles away in Europe and North America.

Pandemics such as trending COVID-19 poses urgent and prolonged threats to the health and well-being of the population worldwide, additionally to the global economic crisis. Most governments and companies face hard choices about how to manage the virus.

Coronavirus disease 2019 (COVID-19) has brought to light the fact that procurement function as the lungs of every company. Unfortunately, Sourcing and procurement functions are confronting demand imbalances leading to inventory difficulties, uncertain reliability of delivery as well as high risk of risk to a supplier in single-source supplier situations.

Non-transparent supply chains and a new reality require flexibility and extra focus on sourcing and procurement functions along with risk management to sustain operations and thrive as a flourishing business in the future. An evaluation framework is proposed to assist in evaluating the company SC focusing on procurement operations that touch the internal and external aspects of the company. We notice that Algerian companies have not resilient SC that can confront crisis quickly.

We chose this topic because we think it is one of the significant issues in the world and our community today. Many countries have faced health and economic issues because of the spread of COVID-19.

This thesis aims to examine the effects of the pandemic on companies focusing on multinationals ones which operate globally. The results ought to be of interest to any organization to reinforce their backup to be ready for any new future pandemics or crisis.

The research is here to answer the following central question: **"What is the impact of the COVID 19 pandemic on the supply chain and more particularly the international procurement?"**

In order to fulfill the research objective two central research questions are formulated. Answering these two research questions will generate the research objective:

1- How could the coronavirus impact on manufacturing process?

2-Which operations related to international procurement might be affected by this virus?

As a starting point, after initiating prior documentary research, and from the basis of some personal remarks and perceptions, three main hypotheses were conceived:

H01:A negative impact of the COV on international procurement and trade operations.

H02:The coronavirus interferes with manufacturing process negatively.

H03: The coronavirus results in transportation costs increase.

The adopted methodology was both descriptive, and analytical through a qualitative study that included interviews for better data collection. The final work was therefore divided into three chapters as follows:

Chapter I: The first one provides the background of supply chain operations and risks, it continues with Procurements, intending to represent its activities and systems, in order to understand and be more familiar with the topic. Then it follows with the international procurement and its challenges that may face companies.

Chapter II: This second theoretical chapter will then cover the core element of the research, which is COVID-19. Beginning with the first section that states previous pandemics and their impact on the global economy, then finally a second section to speak about COVID-19 in the Algerian and African context.

Chapter III: The last chapter is finding and discussions; it includes the back ground of Algerian Qatari Steel, as well as the practical methodology that is applied for this research purpose; and it followed by the analysis of the data that were conducted through interviews and summarized the main conclusions of this research and provides recommendations.

CHAPTER ONE:
**Supply Chain and international
procurement**

Introduction

Before passing to procurement, which is an essential activity with a profound impact in the value chain; we will be passing by SCM elements in two sections, where we talk in the first one about SC operations and in the second one, we will jump to international procurement and sourcing.

SECTION ONE: SUPPLY CHAIN OPERATIONS

Researchers and industry are more interested now in Supply Chain Management (SCM) than in the past. Where the companies now know its value and believe that it can help them create a strong competitive advantage.

In order to discuss this more, we must first define “Supply Chain”.

1.1 Supply Chain¹

The term “supply chain management” arose in the late 1980s and came into widespread use in the 1990s. Before that time, businesses used terms such as “logistics” and “operations management” instead.

This term was given many other definitions, and here are the main ones:

- Lambert, Stock, and Ellram in their book *Fundamentals of Logistics Management* 1998; said that: *“A supply chain is the alignment of firms that bring products or services to market.”*
- Also Chopra and Meindl in their book *Supply 2 Basic Concepts of Supply Chain Management Chain Management: Strategy, Planning, and Operations* 2001; mentioned that: *“A supply chain consists of all stages involved, directly or indirectly, in fulfilling a customer request. The supply chain not only includes the manufacturer and suppliers, but also transporters, warehouses, retailers, and customers themselves.”*

“A supply chain is a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products, and the distribution of these finished products

¹MICHAEL(Hugos) : **ESSENTIALS of Supply Chain Management**, John Wiley & Sons, Canada, 2003, P.02.

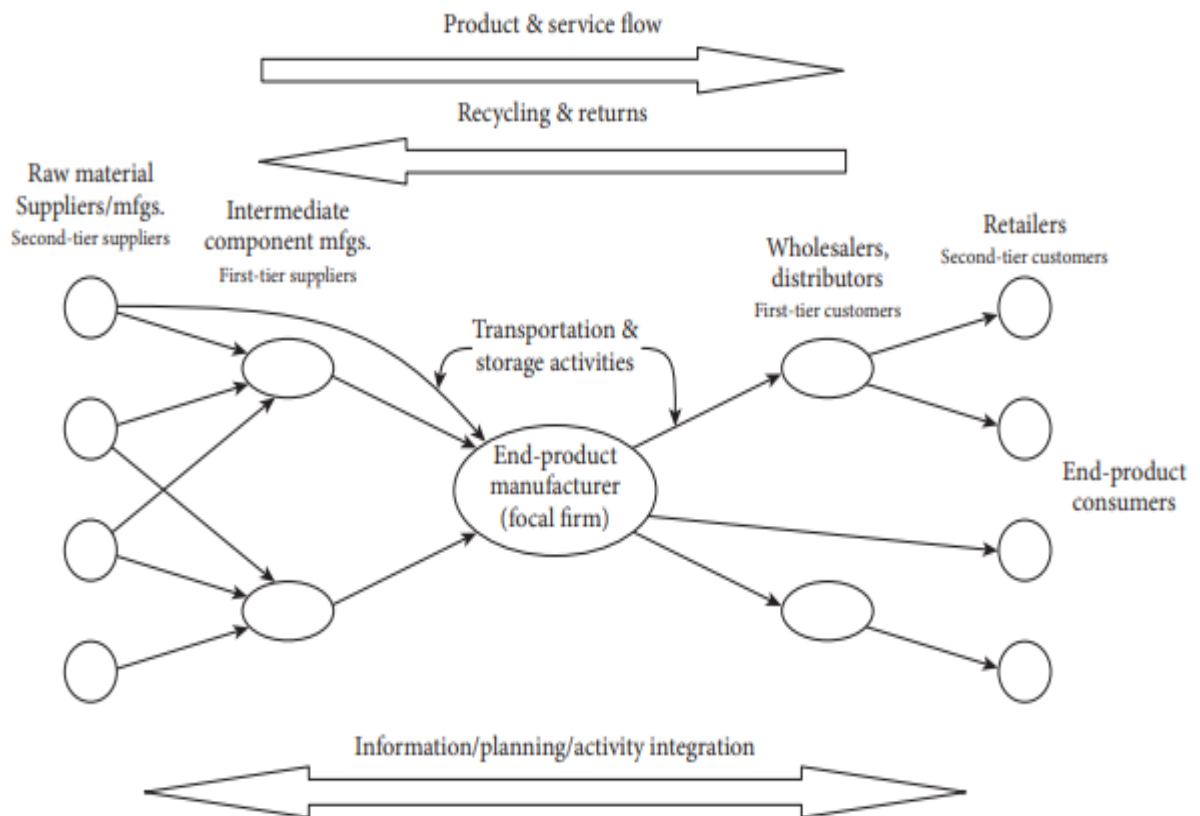
- *to customers.*” Moreover, this was from Ganeshan and Harrison at Penn State University in their article *An Introduction to Supply Chain Management* 1995.
- According to Ballou (2004) Supply chain actually *«refers to all those activities associated with the transformation and flow of goods and services, including their attendant information flows, from the sources of raw materials to end users.»*
- Shapiro (2001) says that a “*Supply chain comprises geographically dispersed facilities where raw material, intermediate products or finished products are acquired, transformed, stored or sold and transportation links that connect facilities along with products flow. The facilities can be operated by the own company or by vendors, customers, third-party providers or with other companies with which the company has business arrangements*”.¹

The supply chain has been developed much further during the last few years compared to biological or social systems. Surana *et al.* (2005) added that this had made the management of the supply chain process a specific practice requiring a structured approach in an organization.²

¹ PETTERSSON, (Annelie): **Measurements of efficiency in a Supply chain**, Department of Business Administration and Social Sciences Division of Industrial logistic, Luleå University of Technology, 2008, p08.

²LARADI,(Mohammed) : **Evaluation of Supply Chain Risk Management for Material Procurement in Libyan Oil Industry**, A thesis submitted in partial fulfillment of the University’s requirements for the Degree of Doctor of Philosophy, Faculty of Engineering & Computing , 2017, p41.

Figure I.1 : Supply Chain Structure



Source: Evaluation of Supply Chain Risk Management for Material Procurement in Libyan Oil Industry thesis.

In this figure, we can see a supply chain that starts with firms extracting raw materials such as iron ore, oil and wood and then selling them to suppliers such as lumber companies and steel mills. These firms received specific orders from component manufactures; by actually turning these raw materials to some functional components (materials like sheet steel, aluminum, copper, lumber and inspected foodstuffs). The component manufacturers also had some specific orders from their customers who are expecting the intermediary products (electrical wire, fabrics, plumbing items, nuts and bolts, molded plastic components, processed foods); we mean here by customers the final product manufacturers.

The final product we receive passes by a process, where the final product manufacturers (companies like Samsung, Pepsi...) gather finished products and sell them to wholesalers or distributors, they also resell these products to retailers. By the end, the retailers, in turn, sell these products to us, the end-product consumers. We buy these products hoping that it will satisfy the paramount need, basing our choice on multiple criteria; quality, cost and maintainability and even the reputation of the product plays a role.

We can say that a successful company is the one that can satisfy all of this. All along, intermediate and end customers can return the products, repair, throw the products away or maybe recycle them. All of this is also included in the supply chain process.

Mentzer (2001) mentioned that there are three types of the supply chain:

1. A company, a supplier, and a customer. We call this direct supply chain.
2. Suppliers of the immediate supplier, customers of the immediate customer. We call this extended supply chain.
3. All the organizations involved. We call this Ultimate supply chain.

1.2 Supply Chain Management

Around 1980, the Boston consulting group came up with this term, but it well appeared by the beginning of 1990. Depending on what Cooper and Ellram (1993) said, if any company aims to reduce inventory holding cost, increase customer service and increase the competitiveness of the Supply chain, it must apply SCM.

There are different definitions of the concept, depending on the focus; there is cost focus, customer service and inventory cost focus and the flow focus.

- SCM is the management of upstream and downstream relationships with suppliers and customers to deliver superior customer value at less cost to the Supply chain as a whole. This is how Christopher (1998) defines SCM.
- Kranz (1996) says that SCM as the effort involved in producing and delivering a final product from a supplier's supplier to the customer's customer.
- Simchi-Levy (2000) affirmed that "Supply Chain Management is a set of approaches utilized to efficiently integrate suppliers, manufactures, warehouses and stores, so that merchandise is produced and distributed at the right quantities, to the right locations, and at the right time, in order to minimize 15 systems wide costs while satisfying service level requirements"¹

Furthermore, we have the definitions of three organizations related to SCM:

- The definition of the Council of Supply Chain Management Professionals (CSCMP): "The planning and management of all activities involved in sourcing and procurement, conversion and all logistics management activities. Importantly,

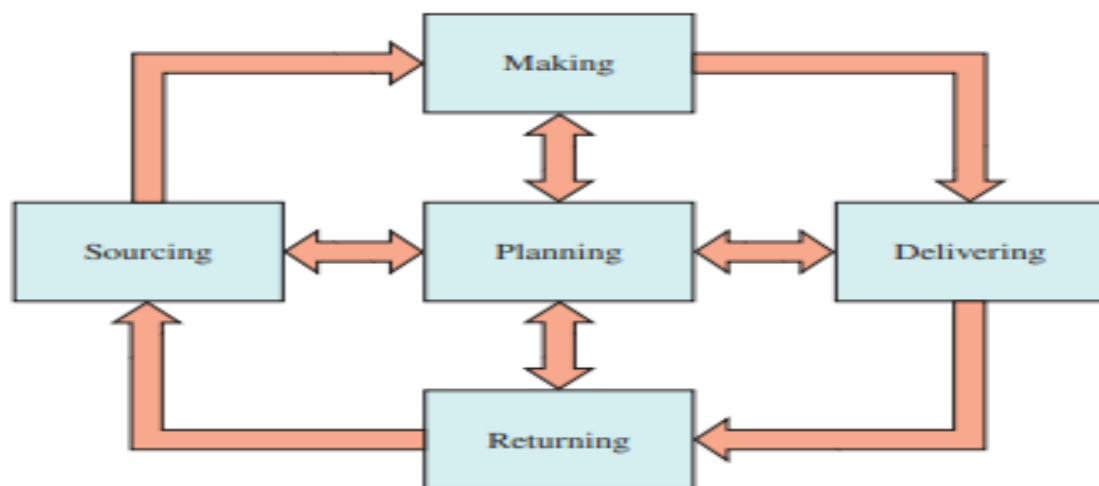
¹ALIERZA, (Mirzaei Barzi): A Study of Firm Managers' Perception of the Supply Chain Integration in Iran, Master's Thesis, Tarbiat Modares University, 2009, p.17.

it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers and customers.”

- The definition of the Institute for Supply Management (ISM): “The design and management of seamless, value-added processes across organizational boundaries to meet the real needs of the end customer.”
- The definition of the Singapore-based Logistics & Supply Chain Management Society: “The coordinated set of techniques to plan and execute all steps in the global network used to acquire raw materials from vendors, transform them into finished goods, and deliver both goods and services to customers.”¹

1.3 Categorizing Operations and Supply Chain Processes

Figure I.2: Supply Chain Processes



Source: operations and supply chain management book

Supply chain process has many views, depending on the part of it, we can notice in the figure that it contains; the planning, sourcing, making, delivering, and returning. And here is a full description of the process.

1.3.1 Planning

it is the strategic part of the affirmation of the existence of the SCM. Where the firm must compare the demands that are anticipated with the available resources. The quality of the product delivered and the efficiency of the process is monitored in this phase.

1.3.2 Sourcing this phase consists of the selection of the suppliers in order to create the product. We will set the pricing also the delivery, and we design the payment process. The

¹WISNER, (Tan Leong): **Principles of Supply Chain Management**, Third edition, USA, 2012, P.08.

whole process consists of the shipment delivery and transfers to the manufactory, also the payment of the supplier.

1.3. 3 Making in this phase e are actually producing the leading service, all by making sure of the quality measures and also work measures; by measuring the speed of work, its quality and the productivity of the workers, also by ensuring all the needed combinations.

1.3.4 Delivering it is a pure logistical process, where the products are being delivered to customers and warehouses, in this phase; wealsoneedto pay attention to the information flow and the supply network building. An essential part is running the system that receives orders from customers, but also payments.

1.3.5 Returning We can call it the after-sales support, where it is a kind of feedback period, all receiving worn-out, defective, and excess products provide the support for the costumers who had problems with their products.¹

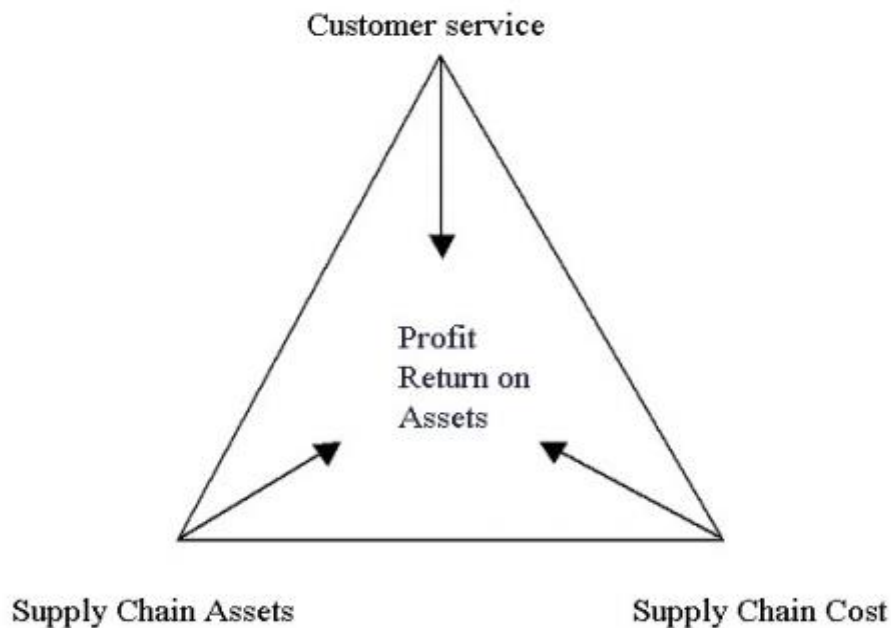
1.4 The Supply Chain Triangle

There are a lot of descriptions for the supplychain in literature, depending on the perspective. If we take Shapiro (2001) as an example, he thinks that we should consider the customer side and not only the costs, so the ideal combination for him is to take care of the client demand and minimize the cost all at once.

So, we can say that the most effective system in any entity should consist on combiningthe cost (establish high facility utilization, low capital investments) and performance (short delivery times, high delivery precision, satisfied customers, short lead times, short days of inventory). So, a company should be focusing on providing services to its customers, but also minimizing the costs, as you may see here below Schary and Skøjtt-Larsen (2001) described the Supply chain Triangle, that shows the interactions between cost and performance.

¹Jacobs, (F.R) and Chase, (R.B): **Operations and Supply Chain Management**, McGraw-Hill Education, New York, 2018, p.08.

Figure I.3: Supply chain Triangle



Source: Measurements of efficiency in a Supply chain book

So, we can conclude that the most efficient Supply chain is the one that joins a low-cost strategy with good customer experience on services like delivery precision and lead-time. During this process, the company must have some useful tools to measure its performance on supply chain management.¹

1.5 Supply chain threats

Risks and threats can have many sources. They can be internal as they can be external as well. As it was evident in Table I.1, there are many categories.

We have these two categories at first ('Internal to the firm' and 'External to the firm but internal to the supply chain network') in terms of control, they both are in the control of the company. However, the latter (External to the network) is outside it, and talking about risks and threats, we can improve our preparedness to them by improving intelligence in supply chain, where the last two categories relate to that, most precisely; the external threats. We are not concluding with this of course that the internal risks are not as significant; in fact, the internal ones can cause multiple troubles and also they are so related to the external ones. AS an example; companies can switch companies from demand driven to forecast-driven.

¹PETTERSSON, (Annelie): Op.cit, p.05.

Many strategies have been established to reduce the internal risks or their effects, but not all the ways are right; sometimes, it can have the opposite effect. Toyota can be an example; where the company lost both 2billions of dollars and its reputation, all of this was due to an internal breakdown caused by malfunctioning brake pedal design.

There was a research that suggested that only 10 percent of companies undertake internal risk assessment when they are outsourcing both production and risk. Thailand is a real example if we talk about the 2011's floods where there was a weighty reliance on high-tech companies; risks in this region were not fully understood. So, as a result, low-cost labor offers were rebuilt while leveraging a local production ecosystem.

Table I.1: Internal and external Supply Chain Risk

INTERNAL RISK	Process	management and value-adding activities.
	Control	Rules, systems which governs how a firm controls the Processes.
SUPPLY CHAIN RISK	External to the Firm but internal To SC network	Demand (Downstream) Supply (Upstream)
	External to The network	' Environment (eg natural disasters, weather or socio-political)

Source: Adapted from Supply chain Risks book

1.6 External risk categories¹

We can divide external threats into five categories:

¹Jhon,(M) : *SUPPLY CHAIN RISK*: Understanding emerging threats to global supply chain, Op.cit,p.22.

1.6.1 Environmental

➤ **Pandemics**

One of the most severe risks that many managers don't pay attention to. The current situation explains it all, and it showed to the world that pandemics could be a serious kind of threats. COVID-19 affected supply chain in all possible ways. In the last instance of an outbreak in summer 2009, the swine flu virus killed 392 people, although, in fact, it could have been much worse. At the beginning of the crisis, the UK government was warning of a potential 65,000 fatalities. One assumption made by government agencies is that if a flu pandemic takes hold, up to 50 per cent of the workforce could be affected, with each person who falls sick taking between five and eight days off work. This would have an immediate impact on the ability of the private and public sector to maintain operations, especially in such a labor-intensive industry as transport and logistics. The swine flu outbreak of 2009 provided a genuine warning of what could happen and the potential impact on the UK's society and economy.

➤ **Natural disasters**

This category comprises a wide range of disruptive events including extreme weather, earthquakes, tsunamis, floods and even volcanic eruptions. The economic cost of natural disasters was estimated by insurance company Swiss Re at \$194 billion in 2010. The supply chain consequences are derived from not only the disruption of production but also the impact on transportation services and infrastructure. A World Economic Forum (WEF)/Accenture study found that following the Japanese tsunami/earthquake the operating profits of 15 leading multinationals fell by 33 per cent in the subsequent financial quarter directly as a result of supply chain disruption (WEF, 2012).

➤ **Climate change**

Within this category, longer-term environmental issues can also be placed. The survey conducted by WEF specifically identified 'rising greenhouse gas emissions' and 'failure of climate change adaptation' as the significant issues of concern for company executives. The WEF pointed out that even in the wake of major natural disasters, such as the Japanese tsunami, human-made disasters such as 'mismanaged urbanization' were more likely to be disruptive in the next 10 years than earthquakes and volcanic eruptions.

1.6.2 Economic

In recent years the issue of supply chain risk has been placed firmly on the corporate agenda by a confluence of natural disasters and terrorist actions. However, the focus of risk upon ‘spectacular’ events implies that other causal factors can be neglected. The WEF survey referenced above found that the most significant network vulnerability distinguished by respondents related to the cost of oil. Other economic risks are likewise seen as profoundly significant – more so, for example, than extreme climate or terrorism.

➤ **Demand shocks**

One of the most pressing supply chain risks from an economic perspective is what can be termed ‘demand shocks’. An example of this is the disruption caused by the company failure of suppliers following the 2008 recession. This was particularly relevant to the high-tech and automotive sectors where supplier bankruptcy was widespread. Manufacturers' switching caused many of the problems off supply from remote suppliers, and although this had a short-term positive effect on inventories and balances, it meant that when demand picked up strongly in 2010, manufacturers were unable to meet demand. Manufacturers are ever more exposed to currency risks given the globalized nature of their suppliers and customers. Given the debt crises of many economies and the impact this is having on the strength of the euro, dollar and other currencies, this risk is likely to continue in the coming years. Within this category the WEF survey identified ‘Chronic Fiscal Imbalances’ as the critical risk. This was linked to the possibility of systemic financial failure throughout the world. This would have noticeable impacts for supply chains, not least related to the collapse of suppliers and the inability to access trade finance. Volatile currencies are also unhelpful to the development of trade.

➤ **Supply shocks**

‘Supply shocks’ are less obvious, but material threats all the same. The volatile nature of shipping rates could fall into this category. In early 2012 shipping rates on Asia–Europe routes increased by about \$1000 per TEU (from about \$650 to \$1650) – a situation which most shippers would find difficult if not impossible to predict.

➤ **Oil**

Instability in the oil market directly affects the supply expenses of transporters, regardless of whether they work on a national or international basis. In most developed markets, fuel represents around a quarter to third of transport operating costs and a change in these costs has a

significant impact over sourcing and distribution procedure choices. A surge in the price of oil would rebalance the near sourcing/off shoring debate in favor of the former and it would likewise empower more distributed inventory holding techniques, rather than the centralization of stock which most organizations pick today. The dangers to supply chains are not crucial derived from a consistent ascent in the cost of oil – manufacturers and retailers can get ready for this eventuality. However, an unexpected spike in oil costs caused, for instance, by a crisis in the Middle East, would be a considerably more genuine danger as this would have significant implications in term productivity and module decision.

➤ **Trade disruption/border delays**

The accomplishment of the World Trade Organization, the advent of the Single European Market and the North American Free Trade Area (NAFTA) has had a significant effect in encouraging trade flows and empowering the global supply chain phenomenon. However, as manufacturers and retailers source goods from progressively far afield, assessing to market without good governance and trade relations, the issue of interruption to trade turns out to be more noteworthy. One of the issues which organizations face is the unpredictability of such postponements. An absence of normalization and standardization of documentation and harmonization of trade regulations Africa is incredibly disruptive to the smooth running of trade systems. High levels of bureaucracy build the probability of errors, postponing shipments. Integration into global supply chains depends on the visibility of supply as well as reliability. Another expected risk to shippers and exporters is the incidence of trade wars. The WTO handles an impressive number of debates a year among individuals and the mechanisms which it provides dispute resolution had been a significant factor in preventing themore significant break down in trading relations. However, tensions, especially among China and the United States and the EU consistently run high, as protectionist elements lobby governments to shield manufacturing from cheap imports. As markets go under expanding economic pressure, the calls for additional barriers to trade will likewise develop, to the inconvenience of global supply chains.

➤ **Industrial action**

A rise in work stoppages and slowdowns throughout the world is having a significant impact on supply chains. To illustrate the vulnerability of the global transport and logistics sector to this threat, the ports at Antwerp and Rotterdam, Frankfurt International Airport, Brazilian customs agents, Costa Rican port workers and Korean truck drivers have all been on strike

at some point in the last year. As a result, many shippers now diversify their shipments across several modes and gateways so as not to be completely exposed by any disruption.

For example, US shippers (who have a great deal of experience of the impact of industrial action at North American ports) are now better able to divert volumes to unaffected gateways.

1.6.3 Societal risks

➤ Corporate and social responsibility

Supply chains have expanded into many emerging markets where the work force and the environment are much more vulnerable to exploitation than in the developed world. Companies such as Apple have been accused of taking advantage of low cost labour and lack of environmental regulations to manufacture their products more cheaply and efficiently than they could in North America or Europe. The risk emanating from their supply chains in this instance is primarily reputational, although of course if enough consumers were to boycott their products there would also be a financial impact. For example, considerable damage was done to the brands of several Western retailers following the Rana Plaza fire in Bangladesh in 2013. More than ever global companies are being forced to take responsibility for their suppliers. Of course, this is easier said than done. In many cases, manufacturers and retailers are not aware of their lower tier suppliers. Pressure regarding working conditions, the environment and even the use of conflict minerals, means that much more consideration is being placed on visibility up the supply chain.

In many cases this has resulted in companies undertaking audits of their suppliers for the first time. The indirect benefit of this has been that companies have been able to identify weaknesses in their supply chain, such as single sourcing issues.

1.6.4 Security

➤ Geopolitical tension

There are many flashpoints of geopolitical tension around the world: the Korean peninsula; Taiwan and China; various territorial disputes between China, Japan and the Philippines, to name just a few. However, perhaps the most worrying in terms of actual supply chain risk is in the Middle East. The Arab Spring has created instability throughout the region, with particular implications for one of its biggest economies, Egypt. Besides, sanctions against Iran have led to threats by the country's leaders to shut the Straits of Hormuz through which much of the world's oil supply passes. Terrorism also falls into this category, the most apparent source being Al-Qaeda and more recently its Somalia-based affiliate, Al-Shabaab. Risks to the supply chain come from both the terrorists (such as the Yemen parcel bombs infiltrated into the air cargo system) and from regulators seeking to limit the impact of a terrorist event by in-

creasing levels of security-driven regulations and procedures. Despite seeming counter-productive, it is a typically politically expedient response to a crisis.

➤ **Cargo crime**

In parts of the world, a breakdown of law and order has made shipments of goods highly vulnerable to theft by criminal gangs. Indeed, even in developed countries in North America and the EU, the issue is exceptionally critical. The reaction of the law enforcement agencies is regularly feeble because of the low priority afforded to the issue by politicians and an absence of duty by police; the misdemeanor often straddles different geographies and in most countries ‘cargo crime’ itself has no separate legal status. . Hence few assets are allocated to handling the issue. Shipments are seldom stolen whilst physically moving .instead they are generally helpless in distribution centers, airports, ports.

➤ **Corruption**

Corruption costs shippers billions of dollars a year, and whilst it is most widespread in markets such as those in West Africa, various forms of it are systemic to the logistics industry right across the world. The best-known form of corruption is the bribery needed to facilitate the transit of goods across international borders. Customs officers are poorly paid in many countries, and augment their meager salaries with this additional form of revenue. Links with organized crime can be vital to make sure that illegal goods are not inspected or seized. However, much more money can be made by mis-declaring the duties which should be paid by importers, and this often involves large numbers of customs officers at all levels. Both directly or indirectly shippers have to pay the cost of corruption and an increasing expansion into emerging markets, either as import or export markets, will increase their exposure to corruption and criminality further.

➤ **Piracy**

Piracy is also a significant issue for supply chains, although the actual cost of the disruption is mostly hidden. Although millions of dollars are paid to pirates off the Somali coast each year, the real costs occur when shipping lines have to divert to longer routes to avoid the problem areas. Other costs include increased insurance; security and guards; increased steaming speeds; higher wages for seamen (danger money) not to mention indirect payments for military operations. A coordinated response by the international community has seen piracy in Somalia reduce dramatically. However, new areas of threat have sprung up – especially in the waters off Nigeria. As this market develops and becomes of greater interest to multinational shippers, the problem is set to grow worse.

1.6.5 Technological

Technology failure/outage is a major concern to shippers, although as yet there have been few significant incidents (at least that have been revealed). Much money has been spent by agencies, such as the Pentagon, in assessing and planning for a ‘cyber terrorist’ attack, although minor disruption to date has come from power failures or accidents. More reliance in the future will be placed on information, and communications networks as the supply chain industry becomes increasingly paperless and this will only heighten the risks. However, measuring the true nature of the threat and robustness of information systems is difficult. The WEF survey found that, in terms of technological risks, critical systems failures were deemed to have the highest potential impact. However, cyber-attacks were identified as being most probable, either from a state sponsored, criminal or terrorist source. Other risk events included ‘Massive Digital Misinformation’, ‘Incidence of data fraud and theft’ and ‘Failure of intellectual property regime’.

SECTION TWO: PROCUREMENT AND INTERNATIONAL SOURCING

Presently, the organizations are operating globally for raw materials, products and services procurements from many suppliers and countries. Procurement represents a significant part of organization costs, and then procurement people are vital for organizations with a strong impact of the value chain.

2.1 Development and Evolution of Procurement

“The 1970s acquired another time in history for Procurement, and by the mid-1980s, there was a major change in how to buy, and their jobs in business were seen. It changed into a capacity that received a steady job, by ensuring material quality and accessibility required things was cheerful. During the 1990s, buy started to be into the arranging procedure of organizations. It began to impact dynamic and creates viable provider connections. As organizations consolidated their exercises, buy practices of the 70s and 80s expected to change and change a little and show signs of improvement.”¹

The procurement function is currently seen as a significant supporter of vital thriving, helping organizations address the difficulties of progressively unique and profound areas through the successful utilization of contemporary provider relationship the board procedures.

¹<https://www.gatewayprocurement.co.uk/insights/the-evolution-of-procurement/>. (Published on 05/09/2018 consulted on 15/08/ 2020 at 15h00).

In this specific circumstance, the efficient procurement strategies management has helped few organizations to become industry pioneers in their particular ventures.

2.2 Scope of Purchasing & Procurement

The terms purchasing and procurement are often used interchangeably.

2.2.1 Purchasing

In general literature “*Purchasing is the act of buying the goods and services that a company needs to operate and/or manufacture products.*”¹

As indicated by A. J. van Weele (2010) characterizes the buying procedure as “*obtaining from external sources all the goods and services that are needed for maintaining and developing direct and indirect production activities in the best conditions.*”

2.2.2 Procurement

Judith Gebauer & Arie Segav (2001) defined procurement as “*All of the activities involved in obtaining material and services and managing their inflow into an organization toward the end-user. It includes obtaining manufacturing supplies for an assembly line as well as obtaining paper and pencils for a bank.*”² Procurement always consists of paperwork and bureaucracy in both private and public sectors.

The Oxford Advanced Learner’s Dictionary (2001) also defines procurement as “*the process of obtaining supplies of something, especially for a government or an organization. Procurement can also be defined as the acquisition of goods, buying or purchase of works, hiring contractors and consultants services.*”³

Furthermore, according to Segev (1998), “*procurement encompasses all activities involved in obtaining goods and services and managing their inflow into an organization.*”⁴

¹<https://emmanonme.wordpress.com/2010/05/04/purchasing-and-supply-chain-managment-4-pp111/>. (published on 04/05/ 2010 consulted on 10/08/2020 at 14h30).

²REZA DAMAVANDI, (Mohammed) : **Implementation of E-procurement and its performance effect on ship management companies** , Master of Science in Business and Economics Business Administration, Luleå University of Technology,2011,p03

³ALTO G , (Luhikula):**Challenges facing the implementation of procurement plan in public organizations**, A Dissertation Submitted in Partial Fulfillment of the Requirements for Award of the Degree of Master of Science in Procurement and Supply Chain Management, Mzumbe University,2013,p06.

⁴DAVID,(A) et MAKUFUI,(R.A) : **Procurement & the value chain**, Ghana,2014,p.20.

From the definitions above , the core idea of procurement is a combination of functions that identify needs, initiate a procurement project, select a vendor, contract with a vendor, in order to buy goods and services whether locally or internationally .

2.3 Purchasing VS Procurement key differences

Procurement is a start to finish work that covers the whole pattern of satisfying an association's prerequisites of products and ventures, much after accepting a request. It focuses on vital exercises that will amplify value creation from the buyer-supplier relationship. Buying, then again, is a subset of procurement that relates to satisfying the conditional part of getting the products and services which starts and finishes with putting in a request and its satisfaction.

“The procedures that establish both the capacities and their extent of work likewise have an unmistakable contrast. They have various objectives and destinations which renders buying as strategic and obtainment as key. Procurement puts high significance on non-transactional features of acquiring goods and services and for example, accomplishing cost reserve funds through viable spend investigation, opening the most value of contractual agreements upgrading buyer-supplier connections, and so on. To re-emphasize, buying focuses on submitting a request and guaranteeing timely payments and delivery.”¹

Here is a table that abstracts the differences between procurement and purchasing:

Table I.2: Purchasing VS Procurement

	PURCHASING	PROCUREMENT
Process	Reactive process	Proactive process
Goods/ Services evaluation keys	Price	Value
Relationship with suppliers	Concerned only on making efficient transactions.	Focused on developing long-term relationships with Suppliers.
Principal Aim	Arrange company expenses and buy company needs.	Identify company needs and fulfill the procurement of those needs

¹<https://www.zycus.com/blog/procurement-technology/>. (Published on 30/07/2020 consulted on 10/08/2020 at 13h20).

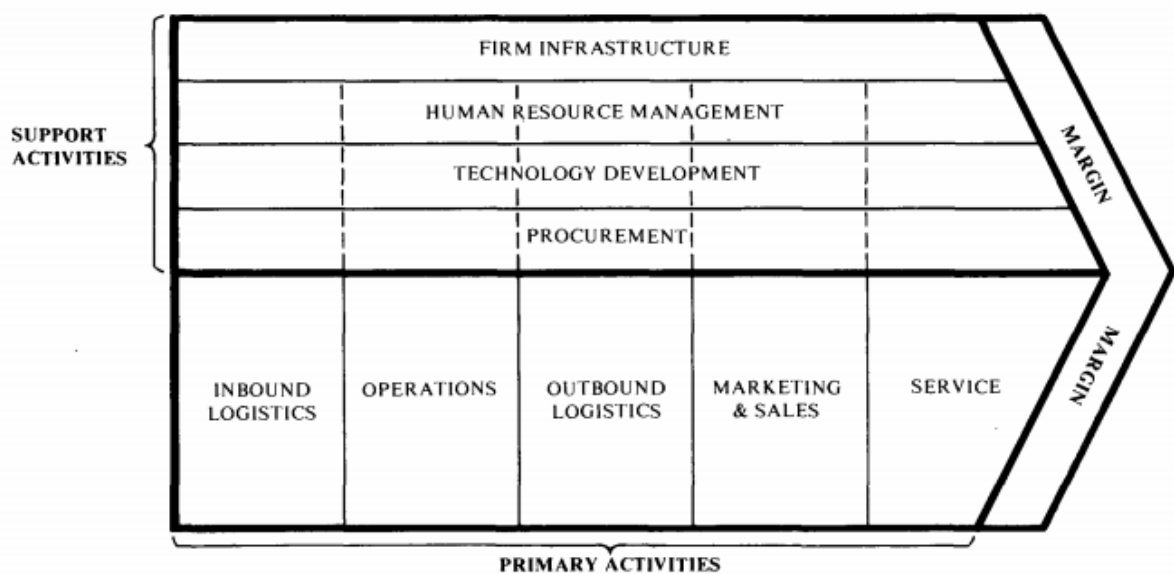
Source: By me based on my researches

2.4 Value chain and Procurement

Michael Porter utilized the term 'Value Chain' in his book "Competitive Advantage: Creating and sustaining superior Performance" (1985).

“The Value chain coordinates the exercises that the company performs and interfaces them to increase competitive advantage by executing these exercises more effectively than its rivals.”¹

Figure I.4: Value Chain



Source: Competitive advantage book.

Porter decided the demonstrating above for the visualized Value chain and separated functions inside a company into two classifications; primary and secondary activities:

Five primary activities directly influence the added value of the final product. This category involves the activities identified with inbound logistics, tasks, outbound logistics, advertising, sales and services.

There are four support activities which are indirectly involved in creating the final added value. These are the activities related to the company's infrastructure, human resources, technological development and procurement.

Procurement involves methods of purchasing raw materials, sourcing suppliers, negotiations with suppliers. According to Michael Porter, support activities may affect some of the

¹<https://www.grin.com/document/283898>. (Published on 08/07/2014 consulted on 10/08/2020 at 18h49).

primary activities. However, although the functions described above are standard, they are not present in every company.

Procurement, in the context of Porter's modeling, has an exceptionally tight definition as a function "*Responsible for the acquisition of inputs, or resources, for the firm.*" In this way, this model recognizes procurement as a role rather one-sided in its functionality; liable for acquiring materials, commodities or products. This model rather blatantly ignores procurement as a key value-adder, but rather single-role filler.¹

In nowadays businesses, we see absolutely the opposite, so we denounce our discontent with MP's view of procurement as a secondary activity. We do agree that procurement was once secondary. Moreover, while we believe that the function of procurement in an overall value chain has evolved tremendously in the last 34 years.

Procurement department serves many value activities and purchasing policies apply firm-wide and eventually has a massive impact on the firm's overall cost and differentiation, can affect the quality of products or services as well by selecting qualified inputs during suppliers selection.

2.5 Main procurement activities

"The procurement function can be broken into five main activity categories:

2.5.1 Purchasing

These activities are the routine activities associated with issuing purchase orders for desired products. There are two forms of products that an organization purchases:

1. Direct or strategic materials that are necessary to produce the products that the company sells to its customers;
2. Indirect or maintenance, repair, and operations (MRO) products that a company use up as a part of daily operations.

The mechanics of purchasing both types of products are mainly the same. Purchasing decisions are taken, purchase orders are expressed, vendors are contacted, and orders are placed.

¹<https://medium.com/@KodiakRating/whats-procurement-s-place-in-the-value-chain-d7f65ccd37e2>. (Published on 28/02/2019 consulted on 20/07/2020 at 18h55).

There is much information communicated during this process between the buyer and the supplier items ,quantities ordered, prices, delivery dates, delivery addresses, billing addresses, and payment terms.

2.5.2 Consumption management

Effective procurement starts with a comprehension of the amount of what categories of items are being purchased over the whole organization just as by each working unit and from whom and the amount it costs.

Expected degrees of utilization for various items at different areas of an organization ought to be set and afterwards against actual consumption regularly.

At the point when consumption is altogether above or beneath expectations, this ought to be brought to the consideration of the appropriate parties so possible causes can be investigated and fitting activities are taken. Either the consumption above expectations is an issue to be amended or false expectations to be reset. Consumption beneath expectations may highlight an open door that ought to be exploited, or it might reflect false expectations in the first place.

2.5.3 Vendor selection

Choosing trustworthy suppliers who will give steady product and service value is a tough assignment. Organizations must decide their supplier selection criteria before beginning to find and assess potential suppliers.

There are several significant criteria other than price, quality, service levels, just in time delivery, and technical help. Vendor assessment is a significant step in merchant determination as it can reduce supply chain costs and improve the quality and idealness of the delivery of things to the organization.

2.5.4 Contract negotiation

Negotiating is the procedure that procurement experts experience to make favorable terms as a component of another supplier contract. This is the place the particular items, prices, and service levels are worked out. The most effortless negotiations are for agreements to buy indirect products where suppliers are chosen based on the lowest price. The most perplexing negotiations are for contracts to buy direct materials that must meet demanding quality prerequisites and where high service levels and technical support are required.

Negotiations are typically used to decide the most attractive price and payment terms, delivery and production time, quality standards and that is only the tip of the iceberg. The negotiations need to think about an ideal choice for suppliers and purchaser,

instead of only expecting to get the least expensive, as this will assist with building more robust relationships with long term suppliers, with a win-win arrangement, the two parties can walk away from a negotiation that has achieved their respective objectives.

2.5.5 Contract management

Once contracts are set up, seller performance against these contracts must be estimated and overseen.

An organization needs the capacity to follow the performance of its suppliers and hold them responsible for meeting the service levels they consented to in their contracts. Any supplier that reliably falls underneath necessities ought to make aware of its shortcomings and asked to correct them.

Frequently the suppliers themselves ought to be given obligation regarding following their performance. They ought to have the option to proactively make a move to keep their presentation up to contracted levels.”¹

2.6 Procurement systems

Procurement systems spotlight on procurement activities that occur between an organization and its suppliers. The motivation behind these systems is to smooth out the acquisition procedure and make it more productive. Such systems usually supplant supplier catalogs with an item database that contains all the required data about the items an organization purchases. These systems likewise monitor part numbers, costs, buying histories, and supplier performance.

Procurement systems allow people to compare the price and performance capabilities of different suppliers. This way the best suppliers are identified so that relationships can be established with these suppliers and prices negotiated. Then the routine transactions that occur in the purchasing process can be mostly automated.²

2.7 Procurement Perspectives

The evolving focus on procurement as a critical capability in organizations has stimulated a new perspective regarding its role in supply chain management. The emphasis has shifted from adversarial, transaction-focused negotiation with suppliers to ensure that the firm is positioned to implement its manufacturing and marketing strategies with support from its supply

¹MICHAEL, (Hugo): **Essentials of Supply Chain Management**, Wiley editions, Canada, 2018, P.59.

²Ibid., p.123.

base. In particular, considerable focus is placed on ensuring supply, inventory minimization, quality improvement, supplier development, and lowest total cost of ownership.

The logistical requirements related to effective procurement strategy are identified below.¹

- **Minimize Inventory Investment**

Before, downtime because of material shortages was limited by keeping up enormous inventories of inputs to preserve against potential interruption in supply; but keeping up stock is costly and uses capital that may be utilized somewhere else in the association.

One objective of nowadays procurement is to keep up supply continuity with the minimum in inventory investment possible. This requires adjusting the expenses of carrying unnecessary materials against the possibility of production.

The perfect is to have required materials show up precisely right at the moment they are scheduled to be utilized in the production process ;in other words, Just In Time (JIT).

- **Quality Improvement:**

Procurement can play an essential job in the quality level of a company product. The quality of final products and services depends upon the quality of materials and parts utilized in the production process of those products. If defective quality components and materials are utilized, at that point, the final product will not satisfy client quality guidelines. Guaranteeing that every individual thing bought is of the suitable quality level may not be sufficient. If a standard part is sourced from various suppliers, and every supplier meets determined quality necessities, it is still conceivable that the last item may experience quality issues.

Ultimately, procurement must maintain a quality perspective in dealing with suppliers to ensure those customer requirements are met cost-effectively.

Supplier Development

In the final analysis, fruitful procurement relies on finding or developing suppliers, breaking down their abilities, choosing and working with those suppliers to accomplish constant improvement." Developing great supply relationships with firms that are focused on the purchasing organization's success is bare in supplier advancement.

The following step is to grow cozy relationships with those suppliers, working with them through the sharing of data and assets, to accomplish better outcomes. For instance, a manufacturer may share a production plan with a supplier, which permits them to meet

¹Kannan, V. R., & Tan, K. C: **Attitudes of US and European managers to supplier selection and assessment and implications for business performance**,2003, P.500.

the purchaser's necessities for delivery more readily. A retailer may share promotional plans intends to guarantee that a provider will have the option to address its needs for expanded amounts at a particular time. This point of view on effective procurement remains as a conspicuous difference to the traditional method of purchasing, which inalienably made adversarial relationships with the supply base.

- **Purchase Price and Discounts:**

The value that you pay for an item may vary contingent upon the supplier from whom you buy the item and whether a discount applies to the item. Regardless of whether set up through competitive bidding, buyer-seller negotiation, or nearly from a seller's published price schedule, the purchase price of an item is a severe concern of Procurement. Nobody needs to pay a higher price than would generally be appropriate. Related to the price quote is ordinarily a schedule of at least one potential discount that the purchaser may get. For instance, amount discounts might be offered as an inducement to urge purchasers to buy more massive amounts of cash discounts might be offered for prompt payments of invoices.

Thought of suppliers' discounts structures quickly takes the purchaser beyond the simple quoted purchase price. Different costs related to buying must be thought of. For quantity discounts to be figured in, the purchaser should likewise consider the expenses related to holding inventory. More enormous purchase quantities increment inventory of materials or supplies. Size of purchase additionally impacts administrative costs related to purchasing. Lot- size techniques, for example, Economic Order Quantity (EOQ), we attempted to assist with settling this simple cost trade-off.

Supplier terms of sale and cash discount structures are additionally a part of the purchase price. A supplier offering more favorable trade credit terms are, as a result, affecting the purchase price from the purchaser's point of view. For instance, a discount for prompt payment of an invoice offered by one supplier must be compared with other supplier's offers, which may have various rates or periods included.

- **Lowest Total Cost of Ownership**

At last, the distinction in context between traditional purchasing practice and current procurement system can be summed up as a focus on Total Cost of Ownership (TCO), it is a management accounting concept incorporates total cost of expense acquisition and operating expenses.

Rather than attention on the purchase price, procurement experts perceive that even though the purchase price of materials or services stays crucial, it is just a single part of the total

costequation in the organization service expenses and life cycle costs should likewise be thought of.

- **Continuous Supply**

Stock-outs of raw materials or spare parts can close down a production plant and result in extraordinary expense to an association. Downtime because of production stoppage increments operating expenses and results in powerlessness to provide completed products for delivery to clients.

Thus, one of the core objectives of procurement is to guarantee that a nonstop supply of materials, parts, and components are accessible for use.

2.8 International Purchasing/Procurement

The globalization of business is a fact of life that many managers are waking up to quickly. For firms, small and large alike, the move towards internationalization implies a different role for every aspect of the organization. One important function within the firm which is becoming more and more global in orientation is the procurement function.

2.8.1 Definition

International procurement in the global economy is *“the process of allow firm or organization around the world to bid on contracts for goods or services and this concept gain popularity in shipping and transportation costs, safe transport and assurance of cargo arrive have been effective utilized at cheap cost due to the influx of affordable, readily and availability of means of transportation.”*¹

*“International purchasing is the process of obtaining a product/goods or service, which is available in a market or markets, access to which involves crossing international boundaries.”*² Such international sourcing is desirable to enable the company to be managed competitively and operate successfully in a global market.

Global sourcing is not merely a buying function; *“it is the process of obtaining a product/service in line with consumer needs and technology, thereby enhancing the attraction, the profile, the quality or the value-added benefit”*

Also, it embraces the complexities of various outsourcing, which often involves inbound and outbound logistics. This embraces the process of component suppliers –inbound – providing the goods for assembly in the outsourced assembly plant for distribution globally in the

¹YOHANA (C. Yusto): **CHALLENGES ASSOCIATED WITH INTERNATIONAL PROCUREMENT IN THE PRIVATE SECTOR**, Dissertation Submitted in partial fulfillment for the award of Master’s Degree, Mzumbe University, 2014, p.09.

²ALAN, (E. Branch): **Global Supply Chain Management and International Logistics**, edition Taylor & Francis e-Library, UK, 2009, P.58.

outbound logistics operation. Therefore, it can be noted that the leading international procurement benefits are: lower cost, stimulating the global economy.

2.8.2 Reasons for global procurement

Several main driving reasons for global sourcing are concluded as follows:¹

- **Materials are not available domestically**

Due to reasons of geography and technology, some domestic manufacturers may be unavailable to supply specific materials.

Moreover, probably they are incapable of meeting the required delivery time or supplying some materials due to their limited technical capabilities.

- **Unsatisfactory quality of domestic products**

The quality of products got from the local market may not meet the requirements of purchasers. The quality of local goods may not be sufficient for the manufacturers to sell their products to international markets where higher standards may apply. Notwithstanding the quality of the products themselves, possibly the supplier cannot give satisfactory guarantees or after-sales services to the manufacturers.

- **Price**

Particularly in developed countries, the materials or products provided by local suppliers might be excessively costly, and they can get similar merchandise with a less expensive cost somewhere else around the world.

- **Technology**

Particularly in developing countries, some enterprises may have no real option except to source internationally; else they cannot gain access to world-class levels of innovation and technology.

2.8.3 The systemic view of international procurement

It is crucial that we view our supply chain and review the science of international procurement from a system thinking perspective and we recognize that our supply chain or our international procurement is a function of Suppliers, who must be reliable, responsive, capable and must be aligned to organization's strategic goals and objectives, and these suppliers are to provide critical mission and critical raw materials inputs at the right time, right place with right quality level, right quantity and right price, so every organization must examine these

¹CHUNNAN, (Jiang) : **Problems and Challenges of Global Sourcing**, Dissertation Submitted in partial fulfillment for the award of Master's Degree, JÖNKÖPING UNIVERSITY, 2009, p.12.

inputs to ensure that they have a robust supply selection matrix to make sure that the right suppliers are selected.

Every organization, looking for reaching their customer's requirements, so they must do a great job at knowing their customers' requirements to execute their job correctly in making adequate outputs. Thus, TCO will be positively impacted which is one of the key fundamental of the procurement function.

2.8.4 International Procurement Strategy

“International procurement and buying embracing strategic supply chain management includes divers disciplines, including logistics, advertising, product evaluation, international distribution, negotiation, linguistic skills and culture awareness of world conditions, technical skills within the product specification, supplier audits, design, standards, import regulations and constraints, the international trade legal environment and therefore the documentation related with finance, carriers, insurance and customs.

Skills are required in costing the sources of abroad products/services, which not only grasp the value at the factory gate, but also carriage, insurance, import duty, booking charges, taxation, packaging. Generally, the entire international supply chain should be overseen and improved continuously. Additionally, a strategic focus is required with adequate planning.”¹

2.8.5 The challenges of international procurement

- **Distance**

Because of significant distance between various countries, it is hard to build up quick and close trade contacts between traders. Buyers and sellers once in a while meet each other and personal contact is seldom conceivable.

There is an unexpected delay between placement of order and receipt of products from foreign countries. Distance makes more significant expenses of transportation and more severe dangers.

- **Different languages**

Various dialects are spoken and written in various countries. Price lists and catalogues are set up in unknown dialects. Ads and correspondence likewise are to be done in unknown dialects.

Suppliers or buyers may not be fluent in utilized language, and they may not be open to requesting clarifications on numerous times. Berlin utilizes layouts, so data is constantly intro-

¹ALAN, (E. Branch): Op.cit, p.58

duced in a predictable manner. A trader wishing to buy or sell goods abroad must know the foreign language or integrate recent technology in their purchasing process. For example, “Borsch likewise recommends having significant reports expertly interpreted, and afterward sending suppliers both the original and the interpretation.”¹

- **Quality expectations**

As various countries will have their own quality norms and legislation, this can cause issues with buying goods and services globally. There are various problems can emerge due to lousy quality which can affect for example downstream supply chains.

Low quality increase the rate of returns from miserable clients, which results in discounting, extra costs of defective products, which expands reverse supply chain costs, which negatively impacts the bottom line.²

- **Logistics**

Moving products across borders and significant distances is involved in managing logistics; poor choices can prompt huge problems. Including, Loss or theft on the way, Deterioration or harm, Increased lead times because of separations, Communication delays because of time region differences

- **Import and export restrictions**

Each country charges customs obligations on imports to secure its home industries. Similarly, tariff rates are put on exporters of raw materials. Importers and exporters need to confront tariff limitations.

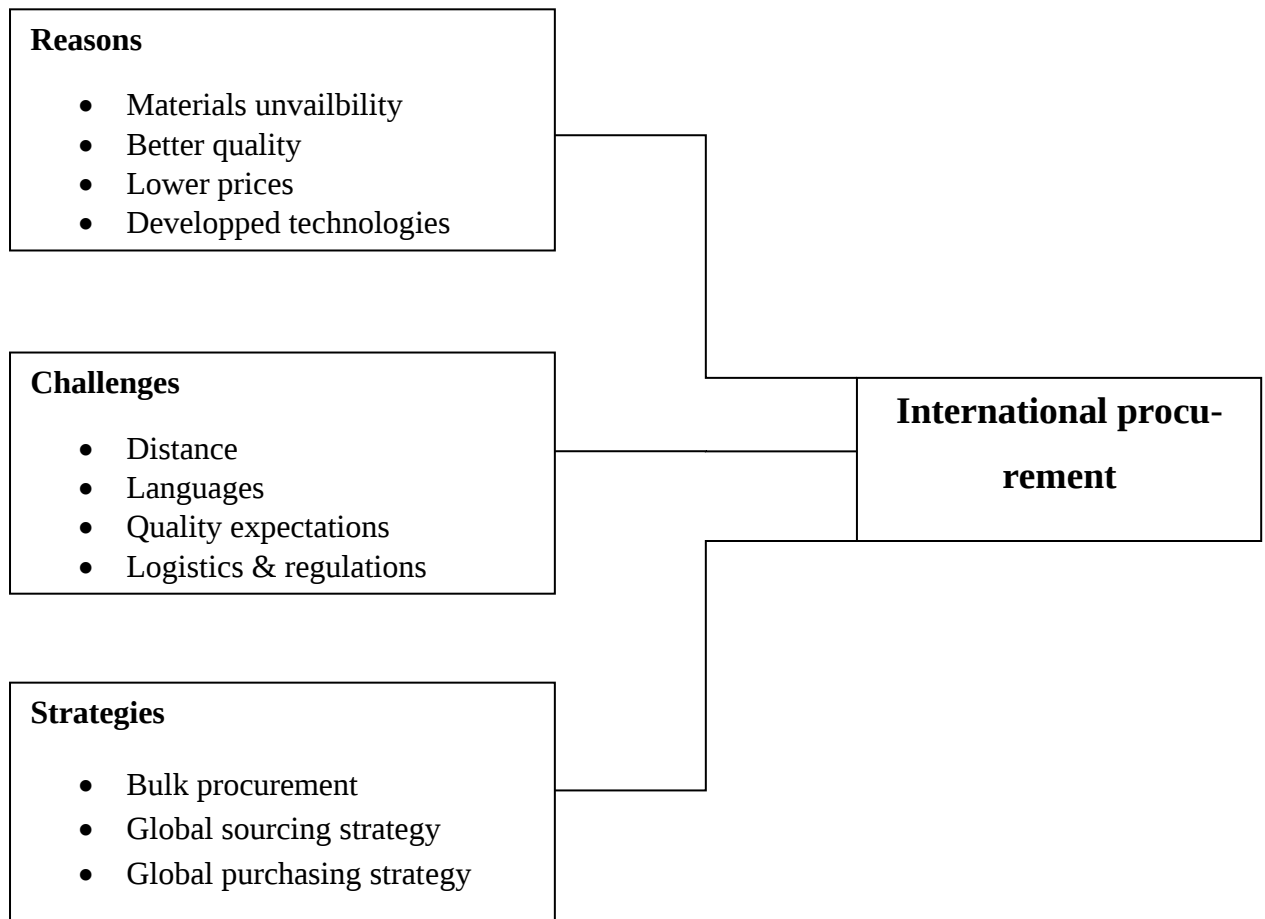
They are required to satisfy lot of customs formalities and rules. Foreign trade policy, systems, rules and regulations vary from country to another and continue changing from time to time.

The following figure abstracts different international procurement elements that we’ve already mentioned above.

¹<https://www.supplychainquarterly.com/articles/984-sourcing-internationally-six-risks-and-how-to-mitigate-them>. (Published on 27/05/2015 consulted on 01/08/2020 at 20h00).

²<http://www.tradeready.ca/2018/fittskills-refresher/5-ways-minimize-risks-global-sourcing/>. (Published on 12/11/2018 consulted on 17/08/2020 at 19h15).

FigureI.5: International procurement



Source: By the author based on personal researches

Chapter summary

This chapter started with the definition of supply chain and supply chain management. Then SC activities, processes and SC triangle, which gave an overview on SC. This was followed by descriptions of the main threats that may hit SC to figure out how companies should cope with these threats. The next chapter will focus on international procurement and sourcing.

CHAPTER TWO:
**COVID-19 and its impact locally
and globally**

Introduction

The leading objective of this chapter is to review the relevant literature on pandemics and infectious diseases and its influence on the global economy and supply chain.

The chapter consists of two main sections. The first section introduces the concept and history of pandemics; summarizes seven critical features of a pandemic, and contextualizes the challenges associated with supply chain risk management. Additionally, it explains the impact of past infectious diseases on the world economy in different fields and sectors such as economic and environmental.

The second section presents the novel COVID19 disease, starting with this virus background, and then we state the current international economic context and finally focusing on analyzing the impact of this virus on Algeria and African countries.

SECTION ONE: DISEASES OUTBREAKS AND PANDEMICS

Disease outbreaks, especially those that become pandemics, have caused substantial adverse effects on health, economies, and even global security in the world. There have been numerous enormous scale disease outbreaks and pandemics recorded ever, including Spanish Flu, Hong Kong Flu, severe, intense respiratory syndrome (SARS), Influenza A Virus Sub-type (H7N9), Middle East respiratory syndrome (MERS), and lately, the reappearance of Ebola and Zika. In addition to the fact that they present a considerable risk to human health, but they likewise impact the economy, the travel industry, trade, and can cause significant political and social interruption.

1.1 Definition of a pandemic

A pandemic is an epidemic happening around the world, or over a broad region, crossing international boundaries and generally influencing a large number of individuals.¹

The word pandemic originates from the Greek pan signifying "all" and demos signifying "the people", and is ordinarily taken to a widespread epidemic of infectious diseases all through the entire country or at least one more continents simultaneously.²

In the previous two decades, the term has not been characterized by numerous modern medical texts. Indeed, even legitimate writings about pandemics, for example, comprehensive

¹¹ Dictionary of Epidemiology, John M. Last, Oxford University Press, 2000, P131.

²HONIGSBAUM,(M): **Historical keyword Pandemic**.The Lancet, P. 373.

histories of medicine, classic epidemiology textbooks, or the Institute of Medicine's influential 1992 report on rising contaminations, do not 16 records it in their files.¹

The universally accepted meaning of a pandemic as it shows up in the Dictionary of Epidemiology is direct and notable: " epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people ".This classic definition incorporates nothing about population immunity, virology or disease seriousness. By this dictionary definition, pandemics can be said to happen yearly in each of the temperate southern and northern hemispheres, given that the definition of the term is so comprehensive.

In common usage, an "epidemic" implies a prevalence of disease which is somewhat higher than average. "There is a temporary increase in the prevalence of an infectious disease of such extent and course as to indicate a definite change in the balance of forces controlling the occurrence of the disease in the population".

Seasonal epidemics spread rapidly and transcend borders as they infect a large number of people, but these epidemics are not deemed as pandemics. Current definitions encompass " extensive epidemic" are widely spread and attack large numbers of people. It outbreaks terribly across the entire region, the country or the entire continent.

If we take the influenza case, Biologists urge that epidemiological strains should be subject to primary genetic mutations called antigenic transformation for those declaring themselves to reach the sixth level of the pandemic; there must be at least a continuous outbreak in two regions at the same time. The criterion for defining pandemic influenza by the World Health Organization is a new viral subtype of such high impact that few populations have resistant immunity, Which is fast-moving between humans and is the focus through which it spreads rapidly to the rest of the world.²

1.2 Pandemics through history

There have been various significant pandemics recorded in humankind's history, including smallpox, cholera, plague, dengue, AIDS, flu, SARS, West Nile disease and tuberculosis.

Flu pandemics are an unpredictable but recurring event that can have extreme effects on societies around the world. Flu pandemics have struck around multiple times each century since the 1500s, or generally every 10-50 years. In the twentieth century, there were three colossal flu pandemics: "Spanish influenza" in 1918-1919, "Asian influenza" in 1957-1958, and "Hong Kong influenza" in 1968-1969 (Table 1). Every one of these hurt human lives and

¹MORE, (D. M), FOLKERS, (G. K), & FAUCI, (A. S): **What is a pandemic?** J Infect Dis, 2009, P.200.

²Wuqi, (Q): **Risk Communication for Emergency Management of Pandemic Prevention and Control in China**, 2016, P.16.

economic growth. For instance, the influenza pandemic of 1918-1919 killed more than 20 million individuals on the planet and is considered as the most devastating epidemic in recorded world history.¹

Table II.1: Characteristics of the three influenza pandemics of the 20th century

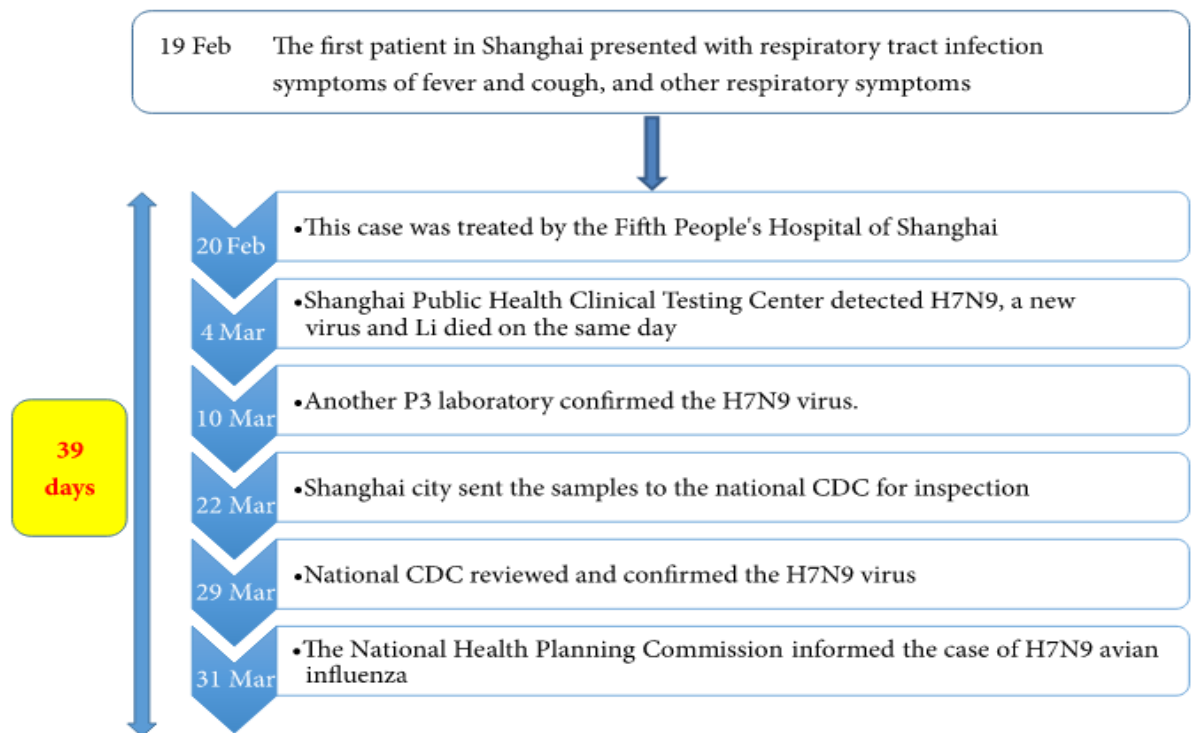
PANDEMIC (DATE AND COMMON NAME)	AREA OF EMERGENCE	INFLUENZA A VIRUS SUBTYPE	ESTIMATED REPRODUCTIVE NUMBER	ESTIMATED CASE FATALITY RATE	ESTIMATED ATTRIBUTABLE EXCESS MORTALITY WORLDWIDE	AGE GROUPS MOST AFFECTED (SIMULATED ATTACK RATES)	GDP LOSS (PERCENTAGE CHANGE) ²
1918-1919 "Spanish Flu"	Unclear	H1N1	1.5-1.8	2-3%	20-50 million	Young adults	-16.9 to 2.4
1957-1958 "Asian Flu"	Southern China	H2N2	1.5	<0.2%	1-4 million	Children	-3.5 to 0.4
1968-1969 "Hong Kong Flu"	Southern China	H3N2	1.3-1.6	<0.2%	1-4 million	All age groups	-0.4 to (-1.5)

Source: WHO 2011

China has experienced numerous public health crises in the last 15 years caused by disease outbreaks, including Severe Acute Respiratory Syndromes (SARS) in 2003 and Influenza A Virus Subtype H7N9 (H7N9) in 2013. Epidemics such as SARS and H7N9 have caused substantial negative impacts on population health and the economy. H7N9 avian influenza is an infectious disease that has caused severe illness and death in humans in China. It has a high fatality rate. The timeline for the beginning of the outbreak of H7N9 is presented in Figure 1.²

¹World Health Organization: **Comparative analysis of national pandemic influenza preparedness plans**, 2011.

²<https://www.hindawi.com/journals/jeph/2018/2710185/>. (Published June 28, 2018, consulted July 11 at 15:40)

Figure II.1: Timeline for the beginning of the outbreak of H7N9

Source: Hindawi website

Latest years have seen at least six colossal scale disease outbreaks including, but not constrained to, flu and H7N9. They are hantavirus pulmonary syndrome, SARS, H5N1 flu, H1N1 flu, the Middle East respiratory syndrome, and Ebola virus. The flu H1N1 2009 virus (A/2009/H1N1) was the first pandemic flu of the 21st century. It influenced the entire world and caused more than 18,000 deaths (Rewar et al., 2015). As indicated by World Bank calculations, Ebola slaughtered more than 11,000 individuals and cost the world more than USD 2 billion.¹

Presently, Zika virus is still spreading and compromises the health of individuals in 34 countries. These outbreaks raised feelings of fear among the two researchers and laypeople that a developing flu outbreak could repeat the devastation of the Spanish influenza of 1918.²

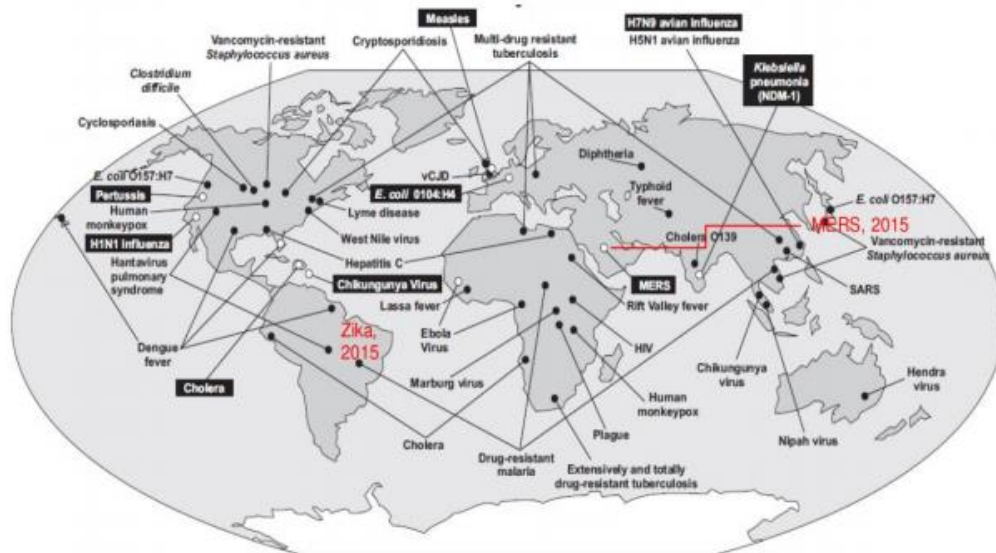
As well as these large scale outbreaks, other emerging and re-emerging infectious diseases or agents during the period from 1990 to 2015 are documented, and Kern provides their

¹<https://europepmc.org/article/med/26842456>. (Published on January 22, 2016, consulted July 11, 2020, at 17:54).

²<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7107521/>. (Published on April 15, 2016, consulted July 11, 2020, at 18:05).

distribution in Figure II.2. The diseases or agents in the black box with the white dots show those which occurred between 2010 and 2014 (Kern, 2016).

Figure II.2: Emerging and re-emerging infectious diseases (1990 to 2015)



Source: Kern 2016

1.3 Features of a pandemic

While the term "pandemic" has not been identified in a large number of medical publications, certain essential features of a pandemic help us to better to understand the concept and provide insights into the needs and challenges for supply chain risk management. They are¹:

1.3.1 Wide geographic extension

The term pandemic ordinarily refers to diseases that stretch out over enormous geographic zones—for instance, the fourteenth-century plague (the Black Death), cholera, flu, and human immunodeficiency infection HIV/AIDS.

In a recent of the historical backdrop of pandemic flu, pandemics were ordered as trans-local and global. There were 178 countries involved during the H1N1 outbreak in 2009.

¹<https://academic.oup.com/jid/article/200/7/1018/903237>. (Published on October 01, 2009, consulted July 11, 2020, at 15:07).

1.3.2 Disease movement

In addition to the geographic extension, most uses of the term pandemic imply unexpected disease movement or spread via a transmission that can be traced from place to place. Examples of disease movement include the widespread person-to-person spread of diseases caused by respiratory viruses, such as influenza and SARS, or enteric organisms, such as *Vibrio cholera*, or by vectors, such as dengue associated with the extension of the geographic range of vectors, such as *Aedes albopictus* mosquitoes.

Also, the geographic expansion, most uses of the term pandemic imply sudden illness development or spread employing a transmission that can be followed from place to place. Examples of disease movement include a widespread person-to-person spread of diseases brought by respiratory infections, for example, flu and SARS.

In the case of Pandemic Influenza A (H1N1), the transmission was widespread in both hemispheres between April and September 2009. The influenza season was early in the temperate southern hemisphere, the northern hemisphere. This out-of-season transmission is another factor that characterizes an influenza pandemic.

1.3.3 Novelty

The term pandemic has been used most commonly to describe new diseases, or at least associated with novel variants of existing organisms—for example, antigenic shifts occurring in influenza viruses, the emergence of HIV/AIDS when it was recognized in the early 1980s, and historical epidemics of diseases such as the plague.

Novelty is a relative concept, however. "There have been seven cholera pandemics during the past 200 years, presumably all caused by variants of the same organism". Not all of these were necessarily novel organisms. In the 21st century, SARS 20 and avian influenza are two new infections with pandemic potential that arose from Asia.

1.3.4 Severity

The term pandemic has been applied to severe or fatal diseases (for example the Black Death, HIV/AIDS and SARS) substantially more generally than to mild diseases. There is no immunity for a human population when a virulent new viral strain influences the world, and this prompts high mortality and morbidity.

The case-fatality ratio estimates severity. Most Ebola cases die within ten days of their initial infection, with the disease having a mortality rate of 50–90% (WHO 2003). The outbreak of H7N9 has caused more than 600 human infections, with nearly 30% mortality. Thus these outbreaks are classified as pandemics.

1.3.5 High attack rates and explosiveness

Pandemics are characterized by high rates of attack and by the explosive spread. Examples are influenza H1N1 and Ebola. However, if the transmission is non-explosive, even if it is widespread, this is not classified as a pandemic. For example, West Nile virus spread to the Middle East and Russia, and the Western Hemisphere in 1999, but the transmission was slow, and the attack rate was low, so it is not classified as a pandemic.

Maladies with low rates of transmission or low rates of symptomatic disease are seldom pronounced as pandemics, even when they spread broadly. However, sicknesses of low or moderate seriousness, for example, Acute Hemorrhagic Conjunctivitis (AHC) in 1981, and cyclic worldwide repeats of scabies additionally have been called pandemic when they exhibit explosive (AHC) or widespread and recurrent geographic spread.

1.3.6 Minimal population immunity

Pandemics arise when populations have little immunity. So it is easy for a large part of a population to be infected. For example, since H7N9 was a new variant of the influenza virus, the population had no immunity, so there were many cases worldwide in a short time 21.

Although pandemics often have been described in partly immune populations, it is evident that in limiting microbial infection and transmission, population immunity can be a powerful anti-pandemic force.

1.3.7 Infectiousness

The term pandemic has less commonly been used to describe presumably non-infectious diseases, such as obesity, or risk behaviors, such as cigarette smoking, that are geographically extensive and may be rising in global incidence but are not transmissible.

1.3.8 Contagiousness

Pandemic ailments are infectious, so they are communicated, starting with one individual then onto the next individual.

This transmission can be immediate (individual to individual) or indirect (individual to vector to the individual). For instance, the SARS infection was communicated from individual to individual by people around other people, while H7N9 was regularly spread through contact with living poultry. The significance to human health of H7N9 and other flu strains lies in their capability to change into a structured fit for continued individual-to-individual transmission.

1.4 Impact of pandemics¹

Infectious disease outbreaks can easily cross borders to threaten economic and regional stability, as has been demonstrated by the HIV, H1N1, H5N1, and SARS epidemics and pandemics.

Beyond the debilitating, sometimes fatal, consequences for those directly affected, pandemics have a range of negative social, economic and political consequences.

As an example, “The impact of pandemic influenza H1N1 in 2009 was not just on mortality, but also on health-care systems, animal health, agriculture, education, transport, tourism and the financial sector. In short, a pandemic event threatens all aspects of economic and social fabric.”

1.4.1 The economic impacts

As pandemics are symbolized by high rates of attack and by explosive spread, they hit tourism and its related industries, and hence limit international and local travel, representing a serious threat not only to the population of the world but also to its economy.

The effect of economic loss can bring about the instability of the economy. The effect is through direct costs, long term burden, and indirect expenses. The immediate expenses of managing a malady outbreak can be high.

For example, the Ebola outbreak has seriously undermined the economy throughout West Africa. The Ebola outbreak in Sierra Leone in 2015 cost USD 6 billion in direct costs (hospitals, staff, medication), and these direct costs alone amount to 3 years of funding for WHO and are well over 20 times the cost of WHO's emergency response cuts in its 2014–15 budget.

The Global Health Risk Framework for the Future (GHRF) Commission estimates that every year on average infectious disease outbreaks cost the world about USD 60 billion indirect costs. The long term burden is also severe. One of the main burdens is from the

¹Wuqi,(Q) : Op.cit,p.21-28.

loss of earnings of those who have died. The predictions for long-term economic costs vary widely.

Prager, Wei et al. (2016) have assessed that economic losses from pandemic flu in the USA would be USD 90 – 220 billion, and of that, 80% would come from the value of expected future lifetime incomes of the individuals who might die. However, McKibben and Sidorenko (2006) evaluated that the overall financial expense of a flu pandemic would go from USD 374 billion for a mild pandemic to USD 7.3 trillion for a severe pandemic. Backhanded expenses can likewise be noteworthy. They incorporate everything that adds to a decrease in GDP.

The 2003 SARS outbreak caused losses of USD 12.3-28.4 billion and an expected diminishing in GDP of 1% in China and 0.5% in South-east Asia. New Zealand Treasury estimates that a pandemic with a 40 per cent attack rate and a 2 per cent case-fatality rate would decrease GDP by 5-10% in that year.

A few sectors of the economy might be more intensely influenced than others. For example, Prager et al. (2016) gauge that the air transport industry would endure lost practically 20% or USD 7.9 billion if U.S. residents cut down on travel. Thus, pandemics have both immediate and long impacts that can harm the financial life of a country for a long time following the pandemic.

1.4.2 Social impacts

The social impacts of pandemics are severe. They include restrictions on travel, and closures of schools, markets and events. All these are a likely reality should a pandemic with genuine potential for high morbidity and mortality emerges.

With the rapid development in worldwide aviation over the last two decades, the risk of global pandemics has escalated with increased passenger traffic. Population mobility facilitates the spread of disease. With modern and efficient air travel, SARS, which originated from southern China, was rapidly transmitted to more than 30 countries in early 2003. In a pandemic, travel is, therefore often discouraged or restricted. For instance, in the Ebola outbreak in West Africa, roads were closed, and military checkpoints stopped vehicles.

In the SARS outbreak in China, airports were closed. These actions helped slow down the spread of diseases. However, they also split families and hindered the movement of goods to market, which harmed the local economy. School closure is often considered the first non-pharmaceutical intervention for implementation in a pandemic, as students are effective in spreading the virus. Timely school closure and cancellation of public gatherings were signifi-

cantly associated with reduced mortality related to influenza epidemics during the 1918 influenza epidemic in the United States.

During the spring wave of the 2009 pA(H1N1) pandemic, more than 1300 public, charter, and private schools in 240 communities across the United States closed... However, school closure raises a range of ethical and social issues, mainly since families from underprivileged backgrounds are likely to be disproportionately affected by the intervention.

Closing markets have been tried for some outbreaks, especially for zoonotic diseases. Closure of wholesale and retail live poultry markets in China was associated with cessation of zoonotic outbreaks of H5N1 and H7N9.

However, this has disrupted the food supply in the cities. People could not find the food they needed because markets and stores were closed. This phenomenon also brought about a lasting change in people's diets. After the occurrence of avian influenza, the consumption of poultry products fell by more than 80% on average in the markets of Jilin province in China and affected the income of many farm workers.

Other places where people gather are also often closed. Public games, including sporting events, are often cancelled. Workplaces also facilitate the transmission of the disease. In the 2009 H1N1 pandemic, enforced close contact at work and household crowding were related to a higher incidence of self-reported influenza-like illness H1N1. Some workplaces were closed. However, closing workplaces has substantial adverse effects on the local economy, and the well-being of workers. Tradeoffs between the social costs of interventions and the cost of uncontrolled spread of the virus are involved in any decisions to mitigate pandemic outbreaks.

1.4.3 Health impacts

Pandemics have infected millions of people, causing severe widespread illness in large populations and thousands of deaths. For example, in the 14th century, the 'Black Death' plague killed half the population of Europe.

In the 20th century, there were three significant pandemics:

- 1) Spanish flu in 1919-1920, which caused 20-40 million deaths
- 2) Asian flu in 1957-1958 which caused about 2 million deaths, and
- 3) Hong Kong flu in 1968-1969, which caused 1 million deaths.

Infectious disease disasters, including pandemics and emerging infectious disease outbreaks, have the potential to cause high morbidity and mortality in the world, and in fact, they may account for a quarter to a third of global mortality.

In developing countries, both pandemics and infectious diseases have the potential to kill many people, and the likelihood of death is five to ten per cent. During the SARS outbreak in 2003, there were more than 8000 infected individuals, with over 700 deaths (almost 9%) worldwide in just six months.

Influenza is one of the most severe pandemic diseases. Influenza outbreaks can result in 23 considerable morbidities and mortality. Influenza pandemics are characterized by high incidence and fatality rates and rapid and widespread transmission (WHO 2004).

The Ebola outbreak in West Africa was an unprecedented public health emergency of international concern. In October 2015, WHO reported that there were 28,581 Ebola Virus Disease (EVD) confirmed, probable and suspected cases, with 11,299 deaths in West African countries. More than 11,000 people died in nine countries as the response to the Ebola zoonotic ‘spillover’ was delayed. The estimated Ebola case-fatality proportion was 40%.

As well, some known infectious diseases, such as tuberculosis, have re-emerged in vulnerable populations. Some diseases may lead to long-term physiological effects on people, which affect their ability to earn a living. For instance, the Zika virus in Brazil leaves a generation of children born with neurological disorders that may impose severe lifelong limitations.

SECTION TWO: CURRENT INTERNATIONAL ECONOMIC CONTEXT AND NOVEL COVID19

The recent outbreak of COVID19 in China has sent the world in a panic mode. This section attempted to describe and discuss COVID19, by introducing the COVID19 in general, and then focusing on the recent outbreak impacts.

2.1 Novel coronavirus disease 2019 (COVID-19)

The outbreak of coronavirus named COVID-19 has disrupted the Chinese economy and is spreading globally. The evolution of the disease and its economic impact is highly uncertain; this outbreak was triggered in December 2019 in Wuhan city in Hubei province of China. Then, at least four other epicenters have been identified: Iran, Italy, Japan and South Korea, even though the cases reported from China have peaked and are now falling (WHO 2020).

It is, however, COVID-19 keeps on spreading over the world; this way, the World Health Organization proclaimed that at present, COVID-19 is heightened to a worldwide pandemic.

In a firmly associated and coordinated world, the effects of the disease beyond mortality (the individuals who die) and morbidity (the individuals who are weakened or caring for the

incapacitated and unable to work for a period) has gotten evident since the outbreak. During the easing back down of the Chinese economy with interruptions to production, the functioning of worldwide supply chains has been disturbed. Organizations over the world, independent of size, dependent upon inputs from China have begun encountering contractions in production. Transport being constrained and even confined among countries has additionally hindered global economic activities.

Above all, some extreme fright among buyers, consumers and firms has distorted regular consumption patterns and made market anomalies. Global financial markets have likewise been receptive to the changes, and global stock lists have plunged. Amid the global turbulence, in an initial evaluation, the International Monetary Fund expects that China will slow off by 0.4 percentage points contrasted with its initial growth target to 5.6 %, likewise hindering global growth by 0.1 percentage points.¹

2.2 COVID19 pandemic background

Before the end of February 2020, several countries were encountering continued local transmission, including in Europe. The most customarily revealed clinical symptom in hospitalized patients is fever, trailed by cough, dyspnoea and myalgia, fatigue. More uncommon side effects are diarrhea and throwing up. The infected individuals develop symptoms within 4–5 days; however, the incubation period ranges from 1 to 14 days. About 80% of patients have gentle to moderate infection (counting non-pneumonia and pneumonia cases), 13.8% have a severe illness, and 6.1% are critical (respiratory failure, septic shock, and various organ failure/dysfunction).

People at highest risk for extreme sickness and death are individuals aged more than 60 years old and those with hidden conditions, for example, hypertension, diabetes, cardiovascular disease, chronic respiratory illness and cancer. Disease in youngsters seems, to be generally uncommon and gentle—about 2.4% of the absolute reported cases where people under 19 years old. A small extent of those aged under 19 years have developed severe (2.5%) or acute disease (0.2%).

Robust evaluation for final case fatality ratio for COVID-19 is yet lacking and biased because of unsatisfactory results and initial detections of most severe cases in many settings.

¹Australia Research Council Centre of Excellence in Population Ageing Research, *The Global Macroeconomic Impacts of COVID-19*, Report 2020.

In China, the general case-fatality ratio (CFR) among laboratory-confirmed cases was higher in the beginning phases of the outbreak (17.3% for cases with symptom beginning from 1-10 January) and has diminished over time to 0.7% for patients with symptom beginning after February 01. Mortality expanded with age, with the most elevated mortality among individuals more than 80 years old (CFR 21.9%).

There is currently no particular treatment or vaccine against COVID-19 infection; however, a lot of clinical trials are recruiting in Wuhan and globally to evaluate the impact of antiviral medicines.¹

2.3 Current international economic context

On March 11, the WHO declared that the viral outbreak was officially a pandemic, the most significant level of a health crisis.

A growing list of economic indicators clarifies that the outbreak is adversely influencing global economic growth on a scale not experienced since the global financial crisis of 2008-2009. Global trade and GDP are estimated to decrease forcefully, at least through the first half of 2020.

The worldwide pandemic is influencing international economic and trade activities significantly, from services to the travel industry and hospitality, medical supplies and other global value chains, electronics and financial markets to energy, transportation, food, and scope of social activities, to give some examples. The health and economic emergencies could have a predominantly negative effect on the economies of developing countries that are limited by constrained financial resources and where health systems could immediately become overloaded.

The economic situation remains highly fluid internationally and for most countries and regions. Uncertainty about the length and profundity of the health crisis related economic impacts are fueling perceptions of risk and instability in financial markets and corporate decision making.

Additionally, uncertainties concerning the international pandemic and the capability of public policies purposed to contain its spread and avert the second wave of infections are add-

¹European Center for Disease Prevention and Control, *Outbreak of novel coronavirus disease 2019 (COVID-19): increased transmission globally fifth update*, report 2020.

ing to market volatility and unpredictability. In a developing number of cases, organizations are delaying investment choices, laying off workers who recently had been laid-off and in some cases filing for bankruptcy. Compounding the economic circumstance has been a notable drop in the price of crude Oil that mirrors the international decrease in economic activity and prospects for disinflation, while also contributing to the decline of the global economy through different channels.

In this condition, COVID-19 could have an outsized effect. While the degree of economic impacts is getting more explicit, the reaction to the pandemic could have a striking and suffering effect on the way organizations sort out their workforces, on global supply chains, and how governments react to a global health emergency. Because of the quickly spreading virus and its compounding consequences for global and national rates of economic development, determining the effect of the virus has been particularly challenging.¹

2.3.1 COVID-19 Pandemic have a Severe Impact on Global Growth

There is extraordinary vulnerability around the global growth estimate because the economic fallout relies upon unsure variables that interface in manners challenging to foresee, despite all these uncertain factors IMF, OECD and World Bank tired to change their forecast depending on current conditions. The global growth forecast assumes that all countries experience disturbances to economic activity because of a mix of factors. The extent of supply interruptions and productivity losses, the pathway of the pandemic, volatile commodity prices and conduct behavioral changes, for example, individuals abstaining from shopping centers and public transportation²

Table 1 showed Between October 2019 and June 2020, for example, the IMF diminished its global economic growth forecast from a positive 3.4% to a negative 4.9%. The same, the OECD brought down its prediction from 2.9% in November 2019 to - 6.0% to - 7.6% in June 2020, relying on a single or a double wave of infections. Between January 2019 and June 2020, the World Bank additionally brought down its forecast of global growth from 2.9% to a negative 5.2%.

¹Congressional Research Service, *Global Economic Effects of COVID-19*, report 2020.

² International Monetary Fund, *WORLD ECONOMIC OUTLOOK: THE GREAT LOCKDOWN*, Report 2020.

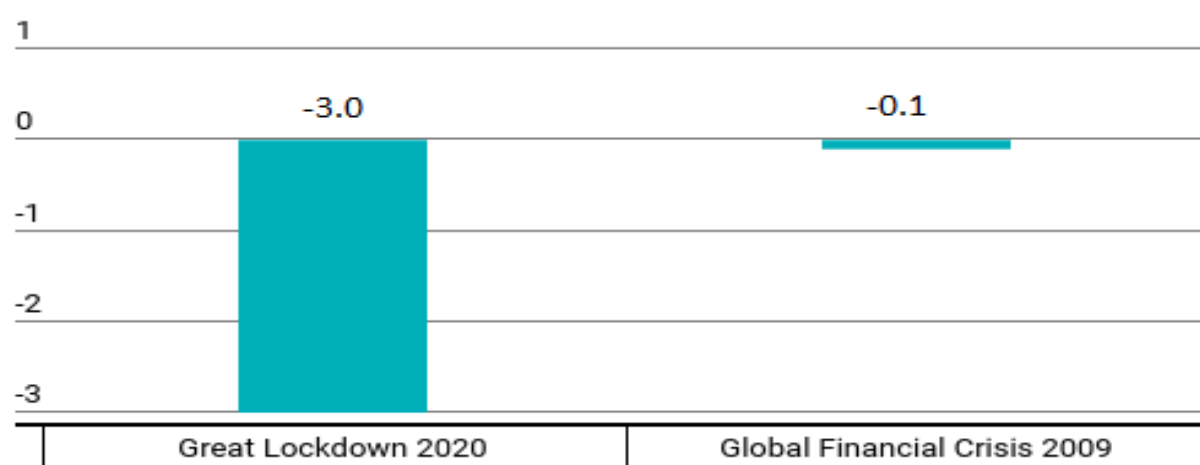
Table II.2: Major Economic Forecasts, Differing Assessments

	World	
	2020	2021
IFM OCT 2019	3.4%	3.6%
IFM APR 2020	-3.0	5.8
IFM JUN 2020	-4.9	5.4
World Bank JAN 2020	2.5	2.6
World Bank JUN 2020	-5.2	4.2
OECD NOV 2019	2.9	3.0
OECD MAR 2020	2.4	3.3
OECD JUN 2020 single	-6.0	5.2
OECD JUN 2020 double	-7.6	2.8

Source: *World Economic Outlook*, various issues, International Monetary Fund; *OECD Economic Outlook*, various issues, Organization for Economic Cooperation and Development; *Global Economic Prospects*, various issues, World Bank.

2.3.2 Global Economy in Recession in 2020

The global economy has encountered 14 global recessions since 1870. The COVID-19 recession will be the most profound since 1945, and more than twice as profound as the recession-related with the 2009 global financial crisis, in 2020, the world economy will encounter the awful recession. **Figure II.3: The great lockdown 2020**



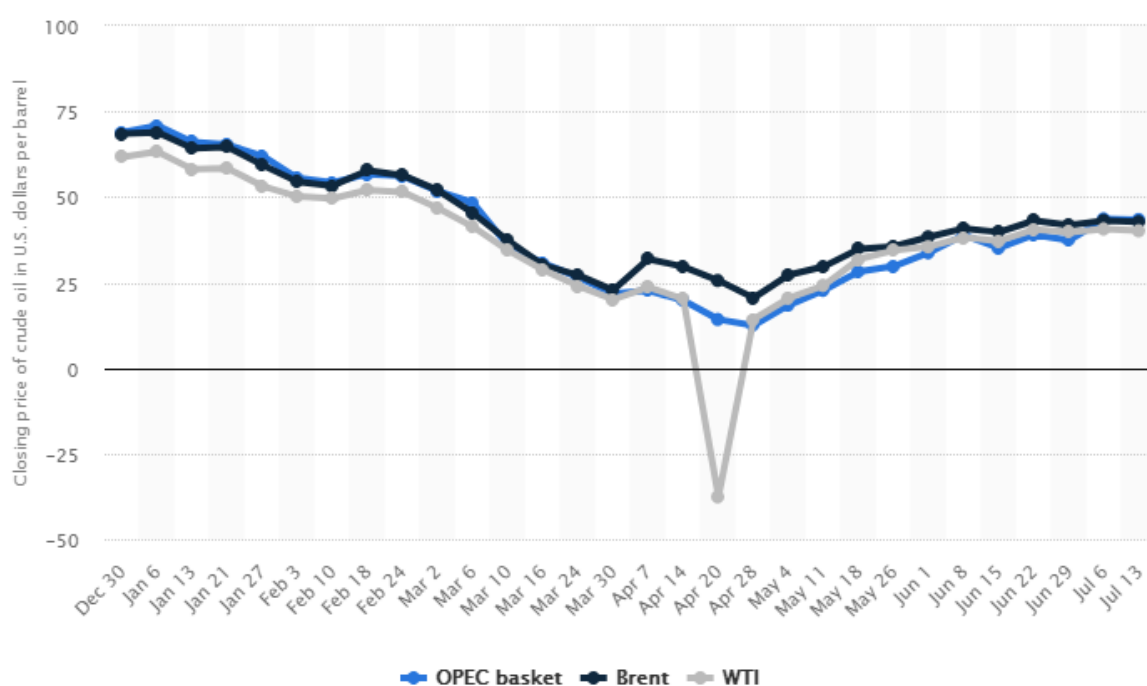
Source: IMF, *World Economic Outlook*.

Under the assumption that the pandemic and required containment peaks in the second quarter for most countries in the world, and recedes in the second half of this year, in the April *World Economic Outlook*, we project global growth in 2020 to fall to -3 per cent. This is a downgrade of 6.3 percentage points from January 2020, a significant revision over a short period. This makes the Great Lockdown the worst recession since the Great Depression, and far worse than the Global Financial Crisis¹.

2.3.3 A considerable tumble in commodity prices

Oil prices lost about 50% of their value dropping from US\$ 67 a barrel to below US\$ 30 a barrel as figure II.4 shows.

Figure II.4: Weekly Brent, OPEC basket, and WTI crude oil prices from December 30, 2019, to July 13, 2020 (in U.S. dollars per barrel)



Source: OECD (2020)

In response to support crude oil prices hit by the pandemic Coronavirus, significant oil producers proposed to lessen production, as individuals devour less and decrease in movement. The Oil exporters' group OPEC consented to cut supply by 1.5 million barrels for every day (BPD) until June, and the plan was for non-OPEC states, including Russia, to follow the trend.

¹<https://blogs.imf.org/2020/04/14/the-great-lockdown-worst-economic-downturn-since-the-great-depression/>. (Published on 14/04/2020 and Consulted 19/07/2020 at 12:58).

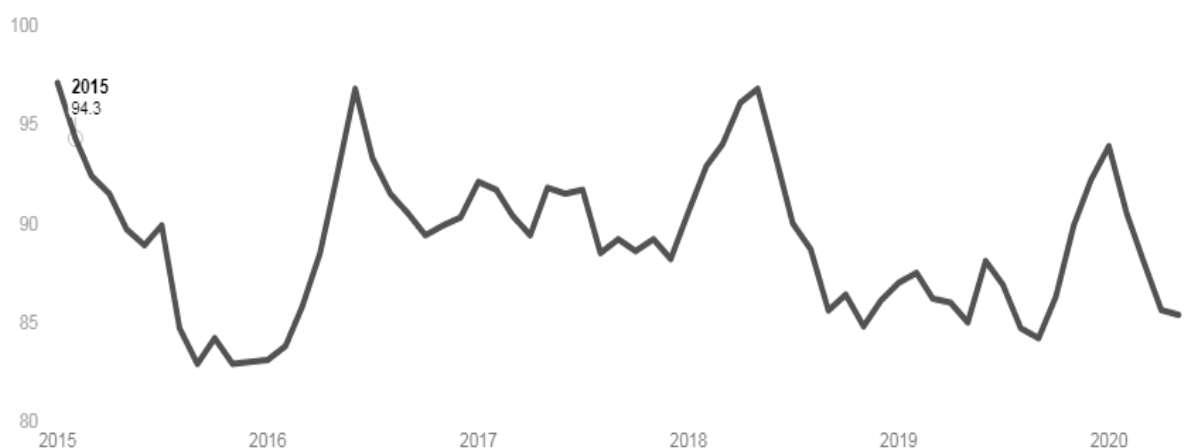
This did not occur as Saudi Arabia on March 08 reported that it would expand production, which raised oil wars as non-OPEC members retaliated, resulting in tumbling oil prices.

The late 2014 drop in crude oil prices contributed to a significant decline in GDP growth for sub-Saharan Africa from 5.1 per cent in 2014 to 1.4 per cent in 2016. During that episode, crude oil prices fell by 56 per cent over seven months. The current decline in crude oil prices has been far more rapid, with some analysts projecting even more severe price declines than in 2014. Already, crude oil prices have fallen by 54 per cent in the last three months since the start of the year, with current prices falling below \$30 per barrel.

Non-oil commodity prices have likewise declined since January, with natural gas and metal prices dropping by 30 % and 4 %, respectively (Brookings Institution, 2020). Aluminum has additionally fallen by 0.49%; copper 0.47% and lead 1.64%. Cocoa has lost 21% of its value in five days¹

Global prices for essential food commodities, for example, rice and wheat, food were extensively steady in April and May, notwithstanding the spread of the pandemic. The World Bank's Food Price Index is relied upon to stay stable for 2020, trailed by a slight increment in 2021 as it has appeared in Figure II.5.

Figure II.5: Monthly food price index



Source: Bloomberg; World Bank

2.3.4 Global financial markets are also strongly feeling adverse effects

After the Black Monday episode (March 09), the leading stock markets indices have recently experienced one of the most noticeably terrible developments in their history in decades. The

¹: African Union, *IMPACT OF THE CORONAVIRUS (COVID 19) ON THE AFRICAN ECONOMY*, Report 2020.

Dow Jones lost very nearly 3000 points in one day. FTSE plunged by about 5%, and misfortunes are evaluated at over US\$ 90 billion, to name only two. The banking sector has lost practically 40% of its value in the recent month, and the trend is yet bearish.

2.3.5 A rise in global unemployment

Hundreds of millions of jobs have been required to be postponed by coronavirus shutdowns around the world. That has been particularly obvious in countries previously hit by the pandemic. Another assessment by the International Labor Organization (ILO) shows the COVID-19 pandemic could increment global unemployment by around 25 million.

2.4 ANALYSIS OF THE IMPACT ON THE AFRICAN ECONOMIES

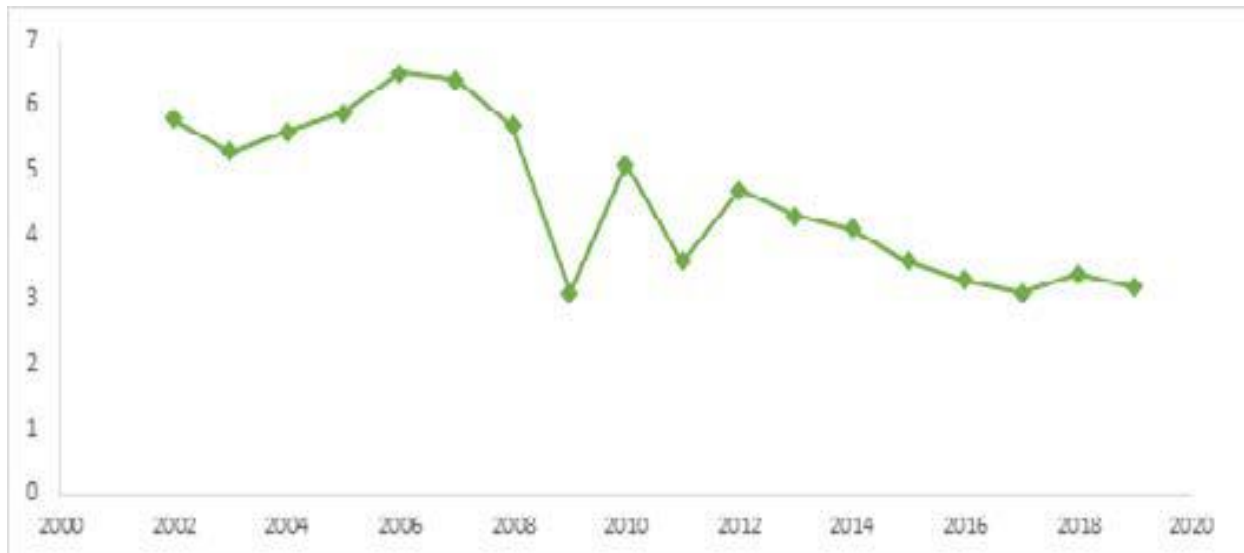
The Covid-19 is influencing the whole world economy and that of Africa. Some key sectors of the African economy are already encountering a stoppage because of the pandemic. The travel industry, air transport, and the oil sector are noticeably affected. In any case, the invisible effects of Covid-19 are expected in 2020 regardless of the duration of the pandemic.

2.4.1 African Economic Growth

African growth has improved significantly over the decade 2000-2010. After this decade of renewed confidence, doubts have risen on Africa's ability to maintain sustainable high growth rates. An essential reason behind this doubt was the persistent dependence of Africa's largest economies on global commodity prices.

African development has improved altogether throughout the decade 2000-2010. After this period of reestablished confidence, doubts have ascended on Africa's capacity to keep up sustainable high growth rates. A fundamental reason behind this uncertainty was the steady reliance on Africa's biggest economies on global commodity prices.

Figure II.6: Africa's Economic Growth between 2000 and 2019

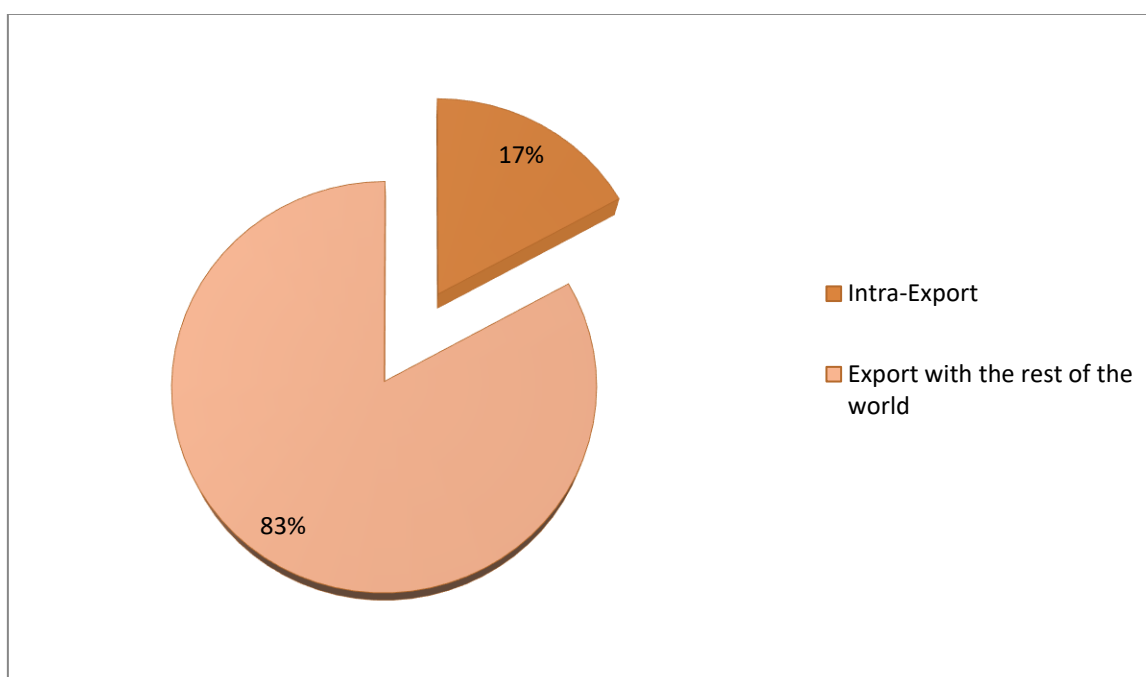


Source: AUC (2020)

Unlikely, the COVID-19 pandemic has hit practically all African countries and seems ready to intensify significantly. The interruption of the world economy through global value chains, the sudden falls in commodity prices and financial incomes and the authorization of travel and social restrictions in numerous African countries are the primary sources of the negative growth; we will talk about this incoming effect parts.

2.4.1.1 African Exports

According to UNTACD, for the period (2015-2019), totals Africa trade average worth was US\$ 760 billion every year, which speaks to 29% of Africa's GDP. Intra-African trade accounts represent just 17% of all trade of African nations. The fall in crude oil prices and demand contraction straightforwardly influence the growth of African countries.

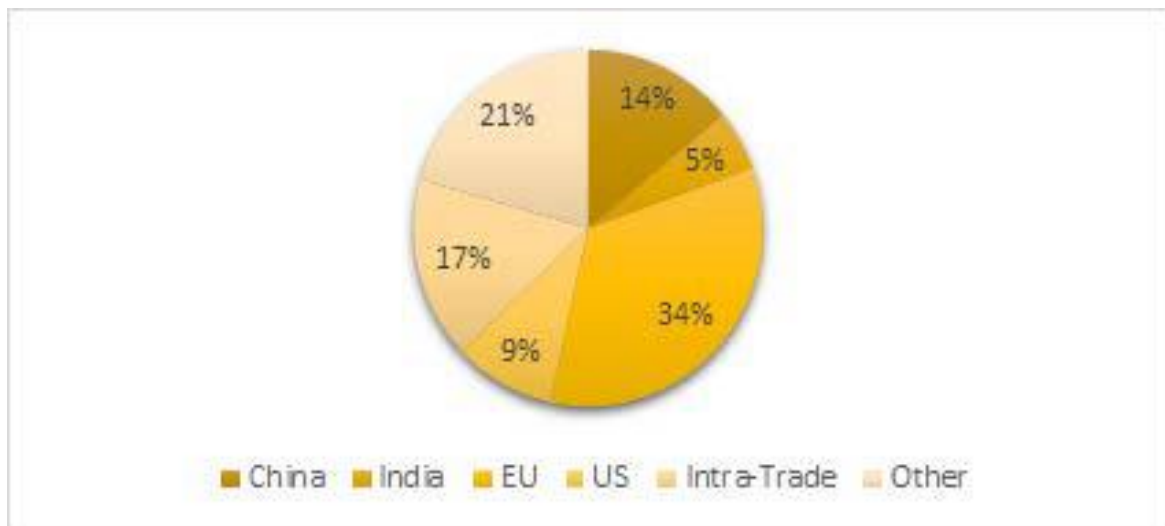
Figure II.7: African Exports (%)

Source: By the author based on UNTACAD (2019)

Africa's major trading partners include the European Union, China and the United States. The European Union, through E.U. due to strong historical ties with the African continent, carries out numerous exchanges, which accounts for 34%. Fifty-nine per cent (59%) of North Africa's exports are to Europe, compared to 20.7% for Southern Africa. China, in its industrialization dynamic, has for a decade raised the level of its trade with Africa: 18.5% of Africa's exports are to China. Forty-four per cent (44.3%) of Central Africa's exports are to China, compared to 6.3% for North Africa (AUC/OECD, 2019).

Over a third of African countries derive most of their resources from the export of raw materials. High commodity prices mainly supported the impressive economic growth of almost 5% experienced by Africa in the 14 years preceding 2014. For instance, the late 2014 drop in oil prices contributed to a significant decline in GDP growth for sub-Saharan Africa from 5.1 % in 2014 to 1.4 % in 2016.

Figure II.8: Trade Partners of Africa



Source: AUC/OECD (2019), *Africa's Development Dynamics 2019: Achieving Productive Transformation*, OECD Publishing, Paris/AUC, Addis Ababa

2.4.1.2 Loss of Activity and Jobs in the African Tourism and Travel Industry

The travel industry and tourism is an essential sector of economic activity for several countries in Africa. The travel industry added to more than 10 % of GDP of the following countries: Seychelles, Cape Verde, Mauritius, Gambia, Tunisia, Madagascar, Lesotho, Rwanda, Botswana, Egypt, Tanzania, Comoros and Senegal in 2019.

It was projected to increment between 3 % to 5% in 2020. However, with the progressing restrictions, hotels are laying off workers, travel restrictions, shutting of borders, social distancing and travel agencies are shutting in numerous African countries, negative growth is probably to be expected.

IATA estimates the economic contribution of the air transport industry in Africa at 55.8 billion dollars, supporting 6.2 million occupations and contributing 2.6% of GDP. A communique from IATA showed that "international bookings in Africa declined about 20% in March and April; local bookings declined about 15% in March and 25% in April. As indicated by the most recent information, Ticket refunds expanded by 75% in 2020 contrasted with a similar period in 2019 (February 01 - March 11).¹

The economic growth is anticipated to drop on average to a value of - 3.3% in 2020 while in countries Seychelles, Cape Verde, Mauritius and the Gambia, the effect will be a lot higher at least - 7% in 2020.

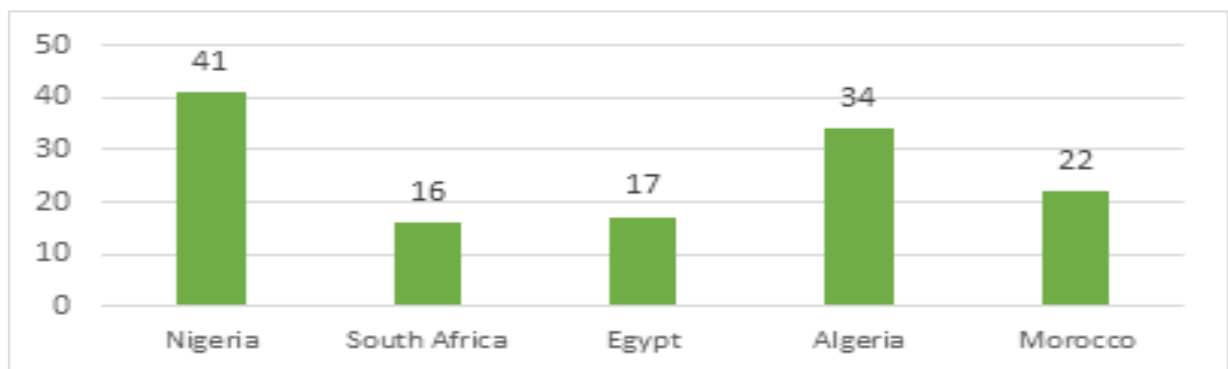
¹<https://www.iata.org/en/pressroom/pr/2020-03-19-01/>. (Published on 19/03/2020, consulted on 21/07/2020 at 15:30).

2.4.2 Impact of COVID-19 on the most prominent African economies

The COVID-19 pandemic showed up at a period when prospects for several, African countries were promising. Toward the start of 2020, Africa was on target to proceed with its economic expansion, with growth anticipated to ascend from 2.9 % in 2019 to 3.2 % in 2020, and 3.5 % in 2021¹. This part assesses the effect of Covid-19 on African economic growth and other specific sectors.

The best five African economies (Nigeria, South Africa, Egypt, Algeria and Morocco) represent over 60% of Africa's GDP. The level of the effect of Covid19 on these five economies will be representative for the entire of the African economy. The travel industry and oil sectors represent, on average a quarter (25%) of the economy of these countries.

Figure II.9: Oil and tourism sectors (in % GDP) for the Big 5 Economies



Source: AUC calculation based on the World Bank data, 2020

Covid19 outbreak has negatively affected these economies, as the vast majority of them have the most significant level of contamination cases. Growth is expected to drop radically in every one of them. The falling of oil prices will prompt a decrease in the prospect of Nigerian and Algerian economies.

The impacts of Covid19 on global value chains is influencing Morocco's car industry; representing 6 % GDP over the period 2017-2019. The export of phosphates and remittances, which adds to 4.4% and 6 % of the country's GDP, will likewise be hit.

Egyptian industries that rely on inputs from China and other foreign countries are influenced and incapable of meeting both local and international market needs. The travel industry sector is seeing a decline with the restrictions that will negatively affect local investments and employment in the country. Remittances are one of the Egyptian foreign sources of financing.

¹¹ United Nations, *Policy brief impact of COVID-19 in Africa*, Report 2020.

It arrived in 2018 over \$25.5 billion, contrasted with \$24.7 billion of every 2017 while in Nigeria; remittances were US\$25.08 billion in 2018, adding to 5.74 % of the GDP. The two countries represent more than 60 % of Africa's remittances inflows.

The Covid19 threatens two essential sources of revenues for South Africa: mining and tourism. The interruption of the Chinese market is probably going to decrease the demand for South Africa raw materials including iron, manganese and chromium ores to China (which worth an equivalent of 450 million Euros exports each year). The country has entered into a recession during the final quarter of last year, and the current pandemic will add on to the already deteriorated public finance and mass joblessness in the country.

2.4.2.1 Top Oil producers

The oil countries will have more obscure economic prospects than the entire continent. African oil and gas exporters did not predict such a fiasco, as hydrocarbon incomes are fundamental for their financial plan and to meet their international commitments.

- ✓ Nigeria (2,000,000 barrels / day), Angola (1,750,000 b / d),
- ✓ Algeria (1,600,000 b / d), Libya (800,000 b / d),
- ✓ Egypt (700 000b / d), Congo (350,000b / d),
- ✓ Equatorial Guinea (280,000b / d), Gabon (200,000b / d),
- ✓ Ghana (150,000b / d) South Sudan (150,000b / d),
- ✓ Chad (120,000 b / d) and Cameroon (85,000b / d)

Are confronting the Covid-19 crisis which is probably going to be more serious more than in 2014, during the last oil shock as they have failed to expand their economies.

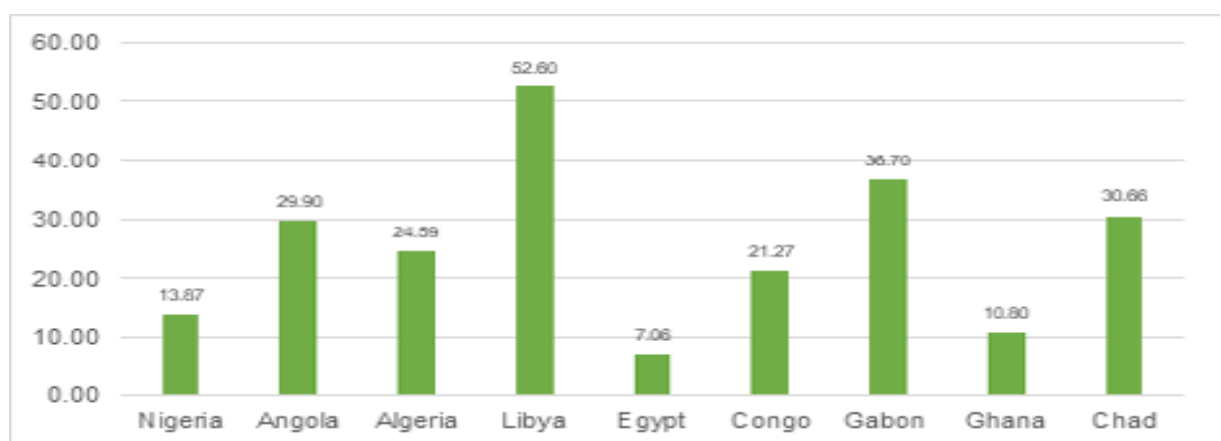
In 2014, the crude oil price dropped from \$110 to under \$60 per barrel and later dropped to under \$40 per barrel in 2015 (CBN, 2015). This suggests over a 60% decrease in the national income of the net exporting countries. Their budget deficit will be more than twofold. Oil price volatility significantly affects economic development and exchange rate for Nigeria and the indirect effect on inflation through the exchange rate (Akalpler and BukarNuhu, 2018).

Therefore, oil producers will be in danger of a devaluation of their currencies during this crisis. Specifically, the Central African countries which, during these last years, have been enduring of devaluation will be considerably more tested because of the low level of diversification and less steady based economies with petroleum and hydrocarbons being the essential source of income.

Oil represents the more significant part of tax income and over 70% of the national exports of these countries. With the drop-in hydrocarbon prices and the drop in production because of the closure of individual organizations involved with the value chains, incomes related to Oil and different hydrocarbons could drop by at least 40 to half on the continent.

The economic crisis is probably going to be more severe than that happened in 2014. The IMF estimates that each 10% decline in oil prices will, on average, lower growth in oil exporters by 0.6 % and increase overall fiscal deficits by 0.8 % of GDP. The trade impacts feed through to economies including through current accounts, financial positions, stock markets, inflation and investment. The decline of oil price is expected to diminish development.

Figure II.10: Oil Revenues of top 10 African countries oil producers (in % of GDP)



Source: AUC Calculations, 2020

2.4.2.2 The petroleum sector

Represents for the top 10 African oil producers 25% of their general GDP. Oil, alongside with different hydrocarbons, makes up over 20% of the GDP of the top 10 African economies (Nigeria, South Africa, Egypt, Algeria, Morocco, Angola, Kenya, Ethiopia, Ghana and Tanzania).

Nigeria could lose up to \$19b as the country could reduce its total exports of crude Oil in 2020 by between U.S. \$14 billion and US\$ 19 billion (compared to predicted exports without COVID19). The African economies dominated by Oil and Hydrocarbons, i.e. the group of

major oil-producing countries will be more affected (-3% of GDP growth in 2020) than the global African economy.

2.4.3 Algeria during COVID-19 environment

“We must start from the painful reality, in order to come up with a vision of what we want to accomplish”. Current Algeria president

For the Algerian system, the pandemic comes at the most unfavorable time. Shaken by a famous and peaceful movement that has resisted time, divisions, intimidation and a presidential political decision, the country's authority needs trust - however, most importantly, it needs economic and sanitary means to confront the pandemic.

However, the health system has been in an incapable state for quite a long time, with serious deficiencies. Algeria is not ready to react in an organized way to a public health crisis. The health sector in Algeria ensures free access to all citizens; however, it faces enormous difficulties: weak and inconsistent services, an absence of operational medical equipment, a lack of medication, and feeble planning, organizing and monitoring mechanisms.

At the beginning of the Covid-19 outbreak, despite a low number of diseases, hospitals and medical staff were overpowered and deficient in necessary protective resources.

Simultaneously, the financial consequences of Covid-19 will be terrible for Algeria. The system's budgetary assets are constrained, which will directly affect its capacity to react to the health crisis. An oil cost at US\$ 30/barrel in 2020 would diminish Algeria's total fiscal incomes by 21.2%. The genuine picture will probably be more terrible.

Despite cuts to public investment (- 9.7%) and public consumption (- 1.6%) conceived by the 2020 Finance Law, the fiscal deficiency would increment to 16.3% of GDP. In the meantime, the sharp decrease in exports incomes (- 51%) will lead the import/export imbalance to extend to 18.2% of GDP and the current account deficit to peak at 18.8% of GDP in 2020, regardless of efforts to contain imports and powerless local demand.¹

Algerians are already experiencing pain. The devaluation of the dinar by 49 % between 2014 and 2019 drastically influenced their buying power. As indicated by a recent report by the National Office of Statistics, consumer prices expanded by 1.3 % and food prices by 2.3 %, while pay rates and wages have remained generally stable since 2012. The coronavirus is additionally beginning to unleash ruin on Algeria's economy. With hydrocarbon sales ac-

¹<https://www.worldbank.org/en/country/algeria/publication/economic-update-april-2020>. (Published on 16/04/2020 and consulted 19/07/2020 at 20:32).

counting for 93 % of export profits and 40 % of incomes, the oil and gas producer has been particularly vulnerable to the global drop in demand prodded by the virus. Last month's price war between Saudi Arabia and Russia, which sent the price of Oil plummeting, constrained Algerian legislators to slash the state spending plan by 30 %. Before the finish of March, the country's foreign currency reserves had plunged underneath \$60 billion (less than a third of where they stood following the 2014 drop in oil prices). Though these reserves can conceivably last through the end of 2020, prospects for 2021 are far less specific. On account of its overwhelming dependence on imports, Algeria will probably be fundamentally influenced by disturbances of international supply chains, and Algerians will more likely see domestic deficiencies of products. The April 12 OPEC agreement to cut production was, therefore, welcome news in Algiers, though the continuing dive in prices does not bode well. A hydrocarbons law passed in January reduced the tax burden for international oil companies, and Algeria's state-run oil company, Sonatrach, went on to sign memoranda of understanding with Chevron and Exxon Mobil, in addition to those with Russian and Turkish firms. However, with world demand unlikely to rebound anytime soon, such agreements cannot be expected to yield much in the near term. Meanwhile, the coronavirus has fueled a rise in consumer prices and could exacerbate unemployment in a country where more than a quarter of young adults are out of work.¹

2.5 Companies booming during COVID-19

The coronavirus pandemic has been, no doubt, terrible for business. Widespread layoffs and vacations have provoked about 21% of the U.S. work power to file for joblessness benefits since mid-March, and financial specialists state the United States is likely as of now in a recession. What is more, even as states return, a significant number of the occupations that have been lost may never return. Nevertheless, during this change, a few organizations have been flourishing a direct result of dramatic shifts in consumer behavior. Many people around the world remain at home to minimize the spread of the virus. That is created new opportunities for many companies

¹<https://www.washingtoninstitute.org/policy-analysis/view/corona-in-the-casbah-the-pandemics-destabilizing-impact-on-algeria>. (Published on 22/04/2020 and Consulted on 19/07/2020 at 19:26).

2.5.1 Slack and Zoom

For people who can work remotely, Slack and Zoom have become ubiquitous communication tools.

Slack Technologies said it added 9,000 new paid customers, an increase 80% compared to the previous quarter, between February 01 and March 25. Not only are they adding more people, but users are also becoming chattier: "The number of messages sent per user per day increased by an average of 20% globally," Slack said in a press release.

Zoom, a video conferencing tool, has been the most prominent brand to break out. The company hosts 300 million meeting participants a day, according to CEO Eric Yuan. Zoom previously said it crossed 200 million daily meeting participants in March. Its stock is up 120% for the year.

2.5.2 Netflix

The company announced it added 15.77 million paid international subscribers, versus the 7.2 million Wall Street expected. It said it expects to add 7.5 million global subscribers in Q2, but "given the uncertainty on home confinement timing, this is mostly guesswork.

"The actual Q2 numbers could end up well below or well above that depending on many factors including when people can go back to their social lives in various countries and how much people take a break from television after the lockdown," Netflix said. "Hopefully, progress against the virus will allow governments to lift the home confinement soon. As that happens, we expect viewing and growth to decline," the company said.

2.5.3 Clorox Company and Reckitt Benckiser

Clorox said last week its overall sales jumped 15% for the first quarter. Sales of Clorox's cleaning segment, which includes its wipes and beaches, jumped 32%. There was also "increased consumer demand" for cat litter and grilling necessities, which fueled a 2% sales increase in its household segment. Reckitt Benckiser, the British company that makes Lysol and Dettol, is also seeing record sales. First-quarter sales rose 13.5% because of "strong consumer demand" for disinfectants. (The company has also found itself in the spotlight for more than just strong demand for its products.) In March and April, the sales of aerosol disinfectants

jumped 230.5% and multipurpose cleaners 109.1% from this time last year, according to research firm Nielsen.¹

Chapter summary

This chapter firstly reviewed the concept of pandemics and its main features and we stated the world past experiences with infectious diseases. This was followed by nowadays trending virus COVID-19 and its impact on Algeria and African countries. The next chapter will address the research methodology and how the empirical research was conducted.

¹<https://www.mercurynews.com/2020/05/07/business-is-booming-for-these-14-companies-during-the-coronavirus-pandemic/>. (Published on 07/05/2020 consulted on 20/08/2020 at 23h20).

CHAPTER THREE:

Algerian Qatari Steel: Procurement in the age of Coronavirus.

Introduction

There are three sections in this chapter. The first section provides the presentation of the company “**Algerian Qatari Steel**”. The second section covers methodology research used in this study. Lastly, we are going to analyze our data collected.

Section 1: Overview of the host organization:

Algeria and Qatar have signed on December 19, a partnership agreement for the achievement of the Bellara steel complex in Jijel. ChihoubHasnaoui has signed the documents on its creation, General Manager of Group Sider and Ahcene Haddad, Director of the National Investment Fund (FNI), and Ali Hassan Jamaa Merikhi, Head of Qatari delegation, in the presence of civil and military authorities of the province.¹

1.1 Presentation and localization:

The Algerian Qatari Steel Company (AQS) was created in December 2013 it is the result of an investment partnership between the Republic of Algeria, and the State of Qatar. Endowed with a registered capital of 58, 610, 000, 000 Algerian Dinars, the company is 49% owned by Qatar Steel International (QSI), 46% by the SIDER Industrial Group and 05% by the National Investment Fund.

The AQS operates in the industrial area of Bellara, located in El-milia city, (State of Jijel), and located 400 km from the capital Algiers, where it operates a steel Complex with a total area of 216 hectare.

1.1 The Complex history

Algerian Qatari Steel is the fruit of a partnership following Rule 49/51 between SIDER, the Fund and National Investment Bank and Qatar Steel and Qatar mining International. This Complex is started an annual production capacity of 2.5 million tons of iron for construction, which will be in the future 5 million tons. The work began in March 2016, on 216 hectares of the industrial area of Bellara.

¹ <http://www.andi.dz/index.php/en/presse/1010-bellara-project-algerian-qatar-steel-joint-venture> created (posted on Monday 20 January 2014, Consulted on 18/03/2020 at 18:09)

At the cost of more than \$ 2 billion, the complex, which is constructed by several groups, has ten units, including a direct reduction unit, three rolling mills, two furnaces, a natural gas station, an electrical transformer, a lime and a water treatment station temporary. Connection work 65 km from the complex and the industrial area of Bellara to the line high voltage (400 kilowatts) Oued El-Athmania-El-Milia, as well as the water supply operation from the Bous-siaba dam, while eight that the two other rolling mills were completed in 2017.

The project of this complex has two areas of implantation: this giant complex will ensure self-sufficiency in steel products from the country whose bill in 2011 amounted to \$ 10 billion. Front raised to 2 million tons its production (1.5 million tons concrete, 0.5 million your son machines) in the first half of 2018, this complex will supply various types of iron for building and public works as well as the flat steel of the railway industry, and will accompany the evolution of the planned national automobile and naval construction in the government's five-year plan.

1.3 The complex challenges

Algerian Qatari Steel contributes to the creation of wealth and support of national industrial fabric by responding to the needs of the local iron market and by exporting production to regional and international markets.

AQS started production and marketing of Iron products at the end of 2017.

The initial production capacity of the Complex is approximately 2.5 million tons per year of rebars and wire rods of different diameters. The second phase of the investment program will be devoted to producing other particular types of steel used in many industries, bringing the production capacity to more than 4 million tons per year.

1.4 Complex products

AQS complex market has a wide range of steel products in quantity and quality at attractive prices and superior reliability under customer requirements, normative, legal, and regulatory requirements. AQS's products are manufactured with a fully automated advanced technology, with a large capacity of production and storage of finished products in several diameters and sizes.

1.4.1 Rebar Steel Concrete

The company steel products are hot-rolled destined for multiple usages, mainly for high adhesion construction. The welded rebar produced by AQS is made in concordance to the ministry department in charge of the quality standard NA8634(2015) and ISO6935-2(2015). Product range in sizes (8-10-12-14-16-20-25-32-40mm). See appendix 1

1.4.2 Wire rod quality

Wire rods of round section of diameter varying between 5.5 mm to 14 mm of high quality. The round and smooth machine wire are obtained by hot rolling following the Algerian standard NA 8634 and according to international standards DIN, ADTM, EN, and SAE. The field of usage of the wire rod produced by AQS is mentioned below:

- Trefile thread
- Welded mesh
- Nail , fastening wire, galvanized wire
- Gabion
- Barbed wire
- Spring wire
- Bolt, nut, screws
- Paperclips
- Pickup wire
- Welding wire

See appendix 2

1.5 Competitors

Several different competitors threaten to chip away at market share from AQS and are as follow.

1.5.1 Public competitors

-Complexe sidérurgique d'El Hadjar

-EX : SPA Groupe ETRHB Haddad ;

1.5.2 Private competitors

-TOSYALI ALGERIE Fer et l'acier ;

-Bidewi Steel SPA (algéro-chypre) ;

- Sarl Karatas Insaatacierie ;

1.6 Complex suppliers

1.6.1 Services

The factories commissioning will be realized by the Technologies owners, as they are the Original manufacturers of the plants like:

- Danieli&c.officinemeccaniches.p.a, for the three Rolling mills, and the two Meltshops ;
- Consortium MPW, MIDREX Technology from theUSA, and PAULWURTH ITALIA S.p.A, for supplying the DR plants pieces of equipment, and Sinosteel Equipment & engineering co. Ltd as the constructor of DRI plant ;
- DURO FUELGUERA for the Material Handling systems plants, in BELLARA and DJENDJEN PORT Sites ;

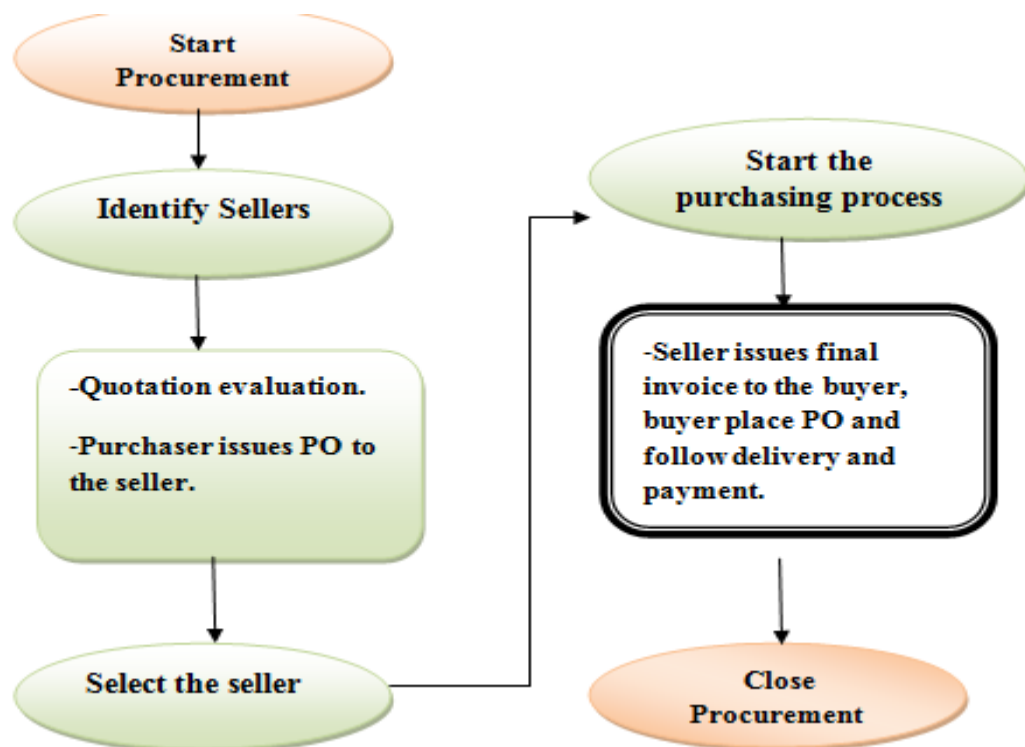
1.6.2 Raw materials and spare parts

ALGERIAN QATARI STEEL deals with Suppliers worldwide for Raw materials and Spare parts and local suppliers for works and services to be provided by the local market (as for Transit service for important shipping companies for export as for CNAN MED, NASHCO ...etc) .AQS scope of business will be held with Original equipment manufacturers for the supply of Consumables and spare parts which are the main range of purchasing. At the same time, the Supply Chain Division of AQS will work in collaboration with technical Division for Original equipment materials to be substituted and replaced by equivalents, for modification the Restricted technologies restrictions. For the Raw materials, AQS got its process of producing billets, Pellets and Scrap materials, which are the main feeders of the plants, however, since the AQS factories are not still 100% operational, AQS is importing these raw materials, from international suppliers. In contrast, for the Scrap AQS got his source from National Companies and local sellers.

1.7 Purchasing process

The formal process of buying goods and services in the AQSC complex, which starts with a demand for both physical needs and services, and then requests for quotation (RFQ) is raised. After that, Suppliers send their quotations in response to the RFQ, and then offer evaluation is undertaken where the best offer is given the purchase order (PO). The selected supplier sends an invoice, that is cross-checked with the purchase order and documents specifying which goods have been received. The payment is then made and transferred to the supplier. In the end, the supplier delivers the goods or services to the buyer, and the purchasing process is closed.

Figure III.1: Purchasing process



Source: By author based on internal information of the company

1.8 SWOT Analysis

SWOT stands for Strengths, Weaknesses, Opportunities, and Threats. Strengths and weaknesses are internal to elaborate, but Opportunities and threats are external.¹

STRENGTHS (+)	WEAKNESSES (-)
• Strategic geographic location • High quality • Availability of raw materials	• Lack of workers and human resources • Hard-working conditions • Absence of ERP • Lack of collaborative system with suppliers • Lack of connectivity between departments
OPPORTUNITIES (+)	THREATS (-)
• The largest complex in Algeria • Partnership with Qatar • Recent production technologies • Exportation process	• Slow industry growth • The Algerian political situation is not stable • Competitors

1.8.1 Comments

- The lack of specialized field workers in Algeria is one of the concerns in AQS and it depends on foreign human resources which are also considered as an opportunity because we are taking advantage of their experiences.
- AQS's location nearby both airport and seaport, which may have significant positive impact on costs and revenues.

¹ <https://www.liveplan.com/blog/what-is-a-swot-analysis-and-how-to-do-it-right-with-examples/>. (Posted April 5, 2018 consulted 14/03/2020 at 11:04 am)

- El Hadjer in Annaba and SPA Group ETRHB Haddad are considered as main AQS's public competitors, AQS should work to eliminate weaknesses to avoid competitor's threats.
- The acute risk of political instability has been growing steadily in Algeria since early 2019, which may affect negatively on the complex performance.
- Billets and Pellets can be explained as the primary raw materials used in the manufacturing of rebars and wire rods, and their availability is one of the organization strengths besides the quality of their finale products.
- Among its weaknesses we cannot find ERP in such a large organization, which caused the lack of communication and internal connectivity between departments that can create gap and losses in the operations, AQS should imperatively implement an ERP system because they need improvement in internal business processes and overall business performance.

Section 2: Research methodology

In this section, we are going to present our study on analyzing the two cases concerning AQS Company and their impact on the complex's performance effects first we will explain how we proceeded our research, what methods we have used, and how we construed the results we have gotten in the end.

2.1 Objectives of the study

The purpose of this study is to present our analysis concerning the effects of coronavirus on the complex's global supply chain focusing on procurement activities, the best thing that companies can do is know their supply chain risks and preemptively develop mitigation approaches.

In order to realize this research, we need to:

- Collect the missing information to complete the study
- Confirm or reject the proposed hypotheses.

2.2 Qualitative study

Qualitative data refers to all non-numeric data or data that has not been quantified. It could be in the form of a shortlist of answers to open-ended questions to more complex data such as entire policy documents. Qualitative data collection methods include interviews, observation, focus groups and others.

To get more representative results, we choose to use interviews to carry on with our research.

2.3 Interviews

One of the most popular techniques where it is used because it enables personal responses. We have adopted a semi-Structured interview type.

2.3.1 Semi-structured interviews

This type of interview, the researcher tries to cover a list of topics and questions. This indicates that a researcher can delete some questions, given the certain organizational setting that is encountered in relation to the subject matter. The arrangement of the questions can differ according to the nature of the conversation. Moreover, additional questions may be needed to examine objectives and questions of the research according to the events in specific organizations.

2.3.2 Running the interviews

The interview guideline is divided into two parts attached to the appendices section of this research work. The questions were previously sent by e-mail to the interviewees in order to enable them preparing the right amount of information, yet for reasons of a crowded schedule, they only reviewed the guide moments before the meeting and still have given adequate information concerning the research.

The first interview¹ was with the Principal Purchaser, Mr Karim Kehal. It was on September 10th2020, at 10h00; he answered questions of part I.

The second interviewee followed the same procedures. The interview was held on the same day of the second interview. He responded to the rest of the questions. No information regarding the second interviewee or the time and date of the meeting are to be disclosed in order to maintain full confidentiality.

All both interviews were audio-recorded with the consent of the interviewees in order to permit later for content analysis.

2.3.3 Content analysis

After the collection of the answers we have classified and structured the answers, we have used a word by word analysis, taking in consideration the speaker's voice pitch and tempo variations, in order to detect the unspoken language and put an adequate frame to each expressed idea in terms of certainty and credibility.

¹Interview with Karim Kehal, Principal Purchaser at AQS jijel, 10/09/2020, Procurement department at 10h00.

Section 3: Results presentation and data analysis of the conducted survey

3.1. Qualitative study: The Interviews

3.1.1 First interview guide (Part I)

- **AQS's Supply chain**

Q1: "Have you defined supply chain and production risks that crises might pose?"

Interviewee declared that AQS had developed an anticipating program in order to define the possible possibility of reducing production in consideration of the need in the local and international market, with the objective to secure their products on the market, and to operate at minimum speed, that shows that AQS objectives have been well defined. For example, the reduction in the production rate led to the reduction in imports, and only the urgent and vital need for maintenance was taken into account.

Q2: "What is the impact of the COVID 19 crisis on the supply chain? Production?"

He pointed out that the COVID-19 crisis obliged AQS to limit its production and to reduce consumption. AQS complied with the instructions of the ALGERIAN government about the release of staff to avoid any possible spread of the virus. Moreover, regarding AQS supply chain and imports have seen an impact on several levels, such as the non-availability of products, following the non-possibility of suppliers to meet the need, For import transactions as well, the transport services have closed almost 85% of their structure, which made it difficult to transport products likewise the necessary documents for importation.

Q3: "How does AQS mitigate supply chain risk?"

AQS and like so many other companies counted on the strength of the ALGERIAN government, which initiated some facilities to ensure the minimum service of companies, the interviewee has mentioned these following measures:

- AQS retained a specific number of to ensure the minimum service.
- AQS reduced the production rate, and took advantage to ensure the maintenance of these factories.
- AQS relied on its approved suppliers to ensure, according to the correct procedures, the purchase and transport of equipment considered urgent or essential.

The author sees that other better solutions are spurring reduction of production rate which directly affect Turnover, but as the company never experiences such crisis; we can consider this solution as acceptable. However, we stated in recommendation section solutions that can mitigate the risk in a better way if any new crisis happens.

- **Turnover and operating costs**

Q1:” How has the coronavirus (COVID-19) pandemic affected Turnover, compared with normal expectations for this time of year? (Increased %, decreased %, not affected).”

He declared, as long as the AQS site is not 100% operational, the impact on Turnover is not calculated with precision, the sites operational staff suffered from production delay, which impacted AQS by reducing the sales blow to the necessary energy consumption and others by 20%.

Q2:” What are your expectations about AQS’s turnover in the next month?”

The interviewee proclaimed that the COVID 19 situation is a permanent issue, and must be managed by keeping the objective of health security in the first place, which means that accompanying procedures will be developed, and that AQS will return to the rhythm of 100% of the operational production plan, and this, following the global changes that will follow, therefore, in terms of turnover, he was not able to give more details for this point, because they didn’t fix turnover objective yet.

Q3:” How did your business's turnover compare to its operating costs? (Turnover exceeded operating costs %, Turnover was equal to operating costs, Operating costs exceeded Turnover %).”

He ensured that the turnover was equal to the operational cost; the author confirmed that as long as AQS complex is not operational, this is an obvious result and on the other hand, AQS faced market change rate impact that influenced DZD money at a high level, against euro and USD rate inflation. Since March 6th from a high pick at 118.50 reaching 121 on March 18th against USD, following a strong appreciation of 1.92% between February 20th and March 6th.

Q4:” Are there any short-term impacts on AQS production and delivery schedules?”

He explained that AQS need was predefined before the worldwide pandemic impact, and most of AQS orders was elaborated before the expansion of the COVID-19 virus, that created

issues for suppliers but not for AQS. Indeed, since foreign workers were obliged to leave ALGERIAN territories, and no longer able to get back to execute schedules on contract, most of the plant unities constructions have been delayed.

Q5:” Are there any manufacturing, logistics or scheduling impacts due to the pandemic?”

He confirmed that since all government structures are closed and their services blocked due to COVID-19, transactions related to the documentation necessary for the completion of logistics and purchasing and other operations have been delayed, or even canceled.

Q6:” Which internal projects or tasks that have been postponed?”

He mentioned that DR plant and Meltshps ALGERIAN QATARI STEEL have been delayed, since foreign human resources were unable to reach AQS plant and ensure the handover step.

3.1.2 Second interview guide (Part II)

- **Prices of materials, goods and services**

Q1:” At the onset of the pandemic, was it feasible for AQS to procure from international suppliers?”

Instead of Covid-19 quarantine and worldwide blockade, AQS managed its transactions, and continued working on its project by buying throw international tendering process, and dealt with suppliers whom were ensuring work from their homes, while counting on DHL, UPS, FEDEX ...etc services and some other shippers or Air ALGERIAN AIR FRET COMPANY who were working with minimum services, with a little impact of delays that was internally managed to reduce the loss that could occur.

Q2:” Has AQS purchased foreign goods or services during the outbreak?”

The interviewee declared that AQS did purchase from international suppliers, with the following process that has been installed all over the world to ensure payments and goods deliveries, as an example; the documents that should be used throw banking systems to realize the payment transactions, were sent not in hard copies, but only by Emailing them from bank to bank (following banks instructions), to manage the emergencies. Any of the involved (clients and suppliers), took the commitment to send at earliest the hard copies after the lock-down raise-

up. As an example, the facilities made by the ALGERIAN BANK, please check appendix 04 of noting bank sent to all economic factories.

Q3:” Has AQS experienced any of the following challenges while procuring these goods and services over the last months:

- ✓ Increases in transportation costs: The transportation costs have not been affected, but only it was rare to find a direct transportation transaction in the time needed.
- ✓ Closure of infrastructure used to deliver goods or services: Some services ensured minimum transactions but did not close their structures as DHL, Air fret, and sea fret.
- ✓ Destination countries are changing their border restrictions: we faced no impact on our project related to these measures, but the only workforce was not able to reach AQS plant to ensure the rest of the works as per their contracts.
- ✓ Late lead times: Delays were the most significant challenge we encountered since it was very critical to ensure goods reception on time.

- **Stock**

Q1:” In what ways has the coronavirus pandemic (COVID-19) impacted on your company's inventory levels within the last two weeks?”

No impact on inventory transactions has been found on AQS site.

- **Exporting and importing**

Q1:” Has AQS exported goods or services in the last months; If yes, how has your exporting process of goods been affected by the coronavirus (COVID-19)?”

The exporting process was severely affected by slowing AQS transactions in a matter of documentation required from several Algerian authorities' structures that were lock due to COVID-19 quarantine.

Q2:” Has the overall choice of suppliers for sourcing your business's materials, goods or services changed since the start of the coronavirus (COVID-19) pandemic?”

Since AQS is dealing with several international suppliers who are dispatched all over the world, the management of supply could not be affected by COVID-19 case.

- **Conclusion**

Q1:” What are the main lessons learnt? Which changes are required in terms of organization, procedures and support resources?”

He added that the coronavirus had surprised all of us. The pandemic is not yet over; no one yet knows the consequences, both political and economic. Much ink is going to be poured out on Covid-19 by professionals, Many governments have declared themselves in a state of war to raise the attention of their peoples, but worse still, this enemy is invisible, and no country was prepared for this pandemic, and there is no secure way that shows our total preparation in Algeria to face such kind of crisis. For ALGERIAN QATARI STEEL, several measures in compliance with healthy prevention to protect human resources are the first concern have been undertaken and being developed, and the Plant security will follow automatically.

3.2 Recommendations and Suggestions

3.2.1 Recommendations

The effect of Covid-19 on Algerian Qatari Steel Company and its supply chains is beginning to be felt firmly on ordinary activities. Nevertheless, many things will not change, its clients will continue to want low prices particularly in these conditions, and AQS does not have the option to charge more just because they manufacture in higher-cost home markets.

The challenge for AQS will be to make their supply chain stronger without debilitating their competitiveness. These following recommendations for AQS **to ensure efficient functioning of their supply chain during the COVID-19 pandemic:**

3.2.1.1 Near-term best practices

- Examine a range of dangers that could affect the productivity of your supply chain.
- Complete an assessment of suppliers to ensure your suppliers ‘suppliers are not going to impact your business negatively.
- Monitor your supply chain. Ensure that you are observing the risks related with your Tier 1 and Tier 2 suppliers to guarantee your complex has a total view of SC.
- Identify alternative suppliers in non-affected regions of the world to expand the SC and cutoff dependencies on any one supplier of geographic area.

3.2.1.2 Long term best practices

- Build policies and emergency plans for your SC.
- Identify geographically diverse suppliers to onboard in the case of crisis. A company ought to likewise consider double sourcing for critical components inside your SC.
- Test and update your strategy to represent organizational development and ecological change.
- Hold intermediate inventory.
- Take advantage of new technologies. Examples include the following: Automation, New processing technologies.
- To integrate the concept of electronic tendering, and all its aspects into supplier culture, an integrated communication plan is required.

3.2.2 Suggesting a pandemic response plan

It is hard to predict the arrival of global crises as the coronavirus outbreak, but firms can diminish their impacts by taking supply chain preparedness to a more significant level.

Author's sincere desire is that AQS will stimulate so that they can adequately act before a disruption occurs and adjust and execute new plans afterwards rather than starting from scratch every time they are plunged into a new crisis.

The researcher highlighted areas of concern in every SC that need to be reviewed. The list represents areas that have been raised as concerns in the company. As AQS, manufactures and delivers products that it produces, it must ensure during any crisis or pandemic that they're receiving and delivering products. There are several ways that manufacturers can impact the supply chain. Here are some practical solutions:

➤ Planning

1. Amend or promote your crisis management plan so that considerations about a pandemic are immediately made.
2. Define supply chain risks that crises might pose.
3. AQS should prepare in advance for reduced production or service delivery dependent on reductions of the client request, work power, raw material supply or energy resources required for operations.

4. Develop contingency plans for raw material as these resources might be affected by the crisis, significantly, those that are imported or depend on imported raw materials for their production.
5. Understand restrictions on exports and imports.

➤ **Raw material procurement and suppliers**

1. Plan on the assumption that shortages will happen. So, build up a good comprehension of your necessary suppliers and the actual products or services they provide to you.
2. Focus your consideration on products and services that are crucial for your productivity and profitability, or on those that empower you to deliver to your priority customers.
3. Make sure that alternative sources are recognized locally and internationally for raw materials. Obviously, it is possible that the alternative sources themselves will likewise be influenced and you will end up running out of fallbacks.
4. Make sure your purchasing department alerts you when a supplier tells you that they are shutting down or that their deliveries will be delayed or reduced.
5. Ensure that adequate maintenance and repair supplies are obtained, as lead times to gain such materials could be severely affected by the crisis.

➤ **Transportation services**

A crisis will provoke restrictions in the flow of raw materials and products. Therefore, that emergency plans are set up to provide adequate movement of product to sustain business operations by planning for alternate transportation sources. The author proposes likewise to AQS to put resources into their future transportation systems to dodge this issue.

Chapter summary

This chapter includes the background of Algerian Qatari Steel, as well as the practical methodology that is applied for this research purpose. It followed by the analysis of the data that were conducted through interviews and summarized the main conclusions of this research and provides recommendations.

General conclusion

General conclusion

The ambition of this research was to contribute to a better understanding of the effects of this pandemic on SC, more specifically, international procurement. In more detail, this work reveals three crucial conceptual contributions.

The first is related to the apprehension of Supply Chain concepts and procurements. The second focuses on coronavirus and its impacts. Moreover, a third chapter harbored the projection of these theoretical earnings on our host company Algerian Qatari Steel, in which we were able to conduct our practical study.

First, we wanted to show that procurements and SC operations are in the center of every company. Then, we sought to describe the influence of past pandemics on the world and the current coronavirus on African countries and Algeria more specifically. Finally, our last objective was to understand and clarify how AQS was affected during this outbreak.

Thus, through our thesis, we have tried to highlight our main problem by answering the following question **“What is the impact of the COVID 19 pandemic on the supply chain and more particularly the international procurement?”** And setting three hypotheses.

Throughout our study, we reached the following conclusions:

1. There is a remarkable negative impact on Procurements process and global trade operations because supply chains and imports operations have seen an effect on several levels, such as the non-availability of products and slowing the exporting process in a matter of documentation required from several Algerian authorities' structures that were lock due to COVID-19 quarantine.
2. We have noticed that the manufacturing operations were negatively impacted due to delay in term of contracts conclusion and postponement of internal tasks.
3. Transportation is one of the sectors critically affected by the current Coronavirus crisis. Although, the unavailability of transport infrastructures the costs stayed stable.

The results obtained through our survey allowed us to test our hypotheses:

H1: A negative impact of the COV on international procurement and trade operations. The first hypothesis is confirmed.

H2: The coronavirus interferes with manufacturing process negatively. The second hypothesis is confirmed

H3: The coronavirus results in transportation costs increase. The third hypothesis is rejected.

However, in our study, we detected some negative points, leading us to propose some recommendations such as:

- Revisit Your Supply Chain's Design and a more strategic approach is needed in the areas of contract and supplier relationship management in order to build up resilience against future crises.
- Take Advantage of innovations and technologies.
- Setting up contingency plans for raw materials and consider dual sourcing for those materials, such as repurposing local manufacture and repair, can counterbalance the risks of supply chain disruptions.

However, our research has known certain limits. COVID-19 has created a challenging, yet opportunistic environment in which to conduct data and apply research methodology. In particular those due to the sanitary restrictions imposed by the government, forcing us to stop our internships, thus preventing us from carrying out more interviews with company managers to collect more information about AQS. As our subject is continuously evolving, we hope that the results we have obtained can be deepened by other operations and develop even more in order to perfect or complete this modest work.

Bibliography

Books

- ALAN, (E. Branch): **Global Supply Chain Management and International Logistics**, edition Taylor & Francis e-Library, UK, 2009.
- DAVID,(A) et MAKUFUI,(R.A) : **Procurement & the value chain**, Ghana,2014.
- HONIGSBAUM,(M): **Historical keyword Pandemic**.The Lancet,2001.
- Jacobs, (F.R) and Chase, (R.B): **Operations and Supply Chain Management**, McGraw-Hill Education,New York,2018
- Kannan, V. R., & Tan, K. C: **Attitudes of US and European managers to supplier selection and assessment and implications for business performance**,2003.
- MICHAEL(Hugos) : **ESSENTIALS of Supply Chain Management**, John Wiley & Sons, Canada,2003.
- MICHAEL, (Hugo): **Essentials of Supply Chain Management**, Wiley editions, Canada, 2018.
- MORE, (D. M), FOLKERS, (G. K), & FAUCI, (A. S): **What is a pandemic?** J Infect Dis,2009.
- REZA DAMAVANDI, (Mohammed) : **Implementation of E-procurement and its performance effect on ship management companies** , Master of Science in Business and Economics Business Administration, Luleå University of Technology,2011.
- WISNER, (Tan Leong): **Principles of Supply Chain Management**, Third edition, USA, 2012.
- Wuqi,(Q): **Risk Communication for Emergency Management of Pandemic Prevention and Control in China**,2016.

Reports

- African Union, *IMPACT OF THE CORONAVIRUS (COVID 19) ON THE AFRICAN ECONOMY*, Report 2020.
- Australia Research Council Centre of Excellence in Population Ageing Research, *The Global Macroeconomic Impacts of COVID-19*, Report 2020.
- Congressional Research Service, *Global Economic Effects of COVID-19*, report 2020.
- European Center for Disease Prevention and Control, *Outbreak of novel coronavirus disease 2019(COVID-19): increased transmission globally fifth update*, report 2020.
- International Monetary Fund, *WORLD ECONOMIC OUTLOOK: THE GREAT LOCKDOWN*, Report 2020.
- United Nations, *Policy brief impact of COVID-19 in Africa*, Report 2020.
- World Health Organization: *Comparative analysis of national pandemic influenza preparedness plans*, 2011.

Thesis

- ALIERZA, (Mirzaei Barzi): **A Study of Firm Managers' Perception of the Supply Chain Integration in Iran**, Master's Thesis, Tarbiat Modares University, 2009.
- ALTO G , (Luhikula): **Challenges facing the implementation of procurement plan in public organizations**, A Dissertation Submitted in Partial Fulfillment of the Requirements for Award of the Degree of Master of Science in Procurement and Supply Chain Management, Mzumbe University, 2013.
- CHUNNAN ,(Jiang) : **Problems and Challenges of Global Sourcing**, Dissertation Submitted in partial fulfillment for the award of Master's Degree, JÖNKÖPING UNIVERSITY, 2009, p.12.
- LARADI,(Mohammed) : **Evaluation of Supply Chain Risk Management for Material Procurement in Libyan Oil Industry**, A thesis submitted in partial fulfillment of the University's requirements for the Degree of Doctor of Philosophy, Faculty of Engineering & Computing , 2017.
- PETTERSSON, (Annelie): **Measurements of efficiency in a Supply chain**, Department of Business Administration and Social Sciences Division of Industrial logistic, Luleå University of Technology, 2008.
- YOHANA (C. Yusto): **CHALLENGES ASSOCIATED WITH INTERNATIONAL PROCUREMENT IN THE PRIVATE SECTOR**, Dissertation Submitted in partial fulfillment for the award of Master's Degree, Mzumbe University, 2014, p.09.

Web sites

- academic.oup.com/jid/article/200/7/1018/903237.
- blogs.imf.org/2020/04/14/the-great-lockdown-worst-economic-downturn-since-the-great-depression/.
- europepmc.org/article/med/26842456.
- medium.com/@KodiakRating/whats-procurement-s-place-in-the-value-chain-d7f65ccd37e2.
- www.emmansonme.wordpress.com/2010/05/04/purchasing-and-supply-chain-managment-4-pp111/.
- www.gatewayprocurement.co.uk/insights/the-evolution-of-procurement/.
- www.grin.com/document/283898.
- www.hindawi.com/journals/jeph/2018/2710185/.
- www.iata.org/en/pressroom/pr/2020-03-19-01/.
- www.mercurynews.com/2020/05/07/business-is-booming-for-these-14-companies-during-the-coronavirus-pandemic/.
- www.ncbi.nlm.nih.gov/pmc/articles/PMC7107521/.
- www.supplychainquarterly.com/articles/984-sourcing-internationally-six-risks-and-how-to-mitigate-them
- www.tradeready.ca/2018/fittskills-refresher/5-ways-minimize-risks-global-sourcing/.
- www.washingtoninstitute.org/policy-analysis/view/corona-in-the-casbah-the-pandemics-destabilizing-impact-on-algeria.

- www.worldbank.org/en/country/algeria/publication/economic-update-april-2020.
- www.zycus.com/blog/procurement-technology/.

Dictionaries

- Dictionary of Epidemiology, John M. Last, Oxford University Press, 2000, P131.

Appendices

Appendix 01:Rebar Steel

Appendix 02:Wire rod

Appendix 03: Interview guideline

Appendix 04: ALGERIAN BANK facilities

Appendix 01: Rebar Steel



Appendix 02: Wire rod



Appendix 03: Interview guideline

Interview about AQS under the New Coronavirus Outbreak (Covid19)

Dear AQS staff,

In the face of the sudden outbreak of the coronavirus, we are all concerned about the current trade and economy status. We hope that through research and accurate information, we can better realize our scientific research purposes.

The aim of this survey to evaluate the impact of the current situation on AQS Procurement operations. So, your contribution is essential. I would be so grateful to arrange a face to face interview with you to discuss important points

Thank you for your support!

PART I

- **AQS's Supply chain**

1. Have you defined supply chain and production risks that crises might pose?
2. What is the impact of the COVID 19 crisis on the supply chain? Production?
3. How does AQS mitigate supply chain risk?
4. How is AQS addressing the supply chain impact of the COVID-19 Coronavirus outbreak?

- **Turnover and operating costs**

1. How has the coronavirus (COVID-19) pandemic affected Turnover, compared with normal expectations for this time of year? (increased % , decreased % , not affected)
2. What are your expectations about AQS's turnover in the next month?
3. How did your business's turnover compare to its operating costs? (Turnover exceeded operating costs %, Turnover was equal to operating costs, Operating costs exceeded turnover %)
4. Are there any short-term impacts on AQS production and delivery schedules?
5. Are there any manufacturing, logistics or scheduling impacts due to the pandemic?
6. Which internal projects or tasks that have been postponed?
7. How has the implementation of these safety measures affected your AQS's operating costs?
8. How was the lead time affected? (Explain).

PART II

- **Prices of materials, goods and services**

1. At the onset of the epidemic, was it feasible for AQS to procure from international suppliers? (If NO, please explain why your business was not able to get the materials, goods or services needed).
2. Has AQS purchased foreign goods or services during the outbreak?
3. Is it safe to receive products and packaging shipped during the COVID-19 pandemic?
4. Has AQS experienced any of the following challenges while procuring these goods and services over the last months:
 - ✓ Coronavirus-related transport restrictions
 - ✓ Increases in transportation costs
 - ✓ Closure of infrastructure used to deliver goods or services
 - ✓ Destination countries changing their border restrictions
 - ✓ Late lead times
 - ✓ Other (Please describe)
5. How the prices of materials, goods or services bought by AQS change in the last months compared with normal price fluctuations? (Please give more details about the prices of materials, goods or services that changed).

- **Stock**

1. In what ways has the coronavirus pandemic (COVID-19) impacted on your company's inventory levels within the last two weeks?

- **Exporting and importing**

1. Has AQS exported goods or services in the last months?
2. If yes, how has your exporting process of goods been affected by the coronavirus (COVID-19)?
3. Has the overall choice of suppliers for sourcing your business's materials, goods or services changed since the start of the coronavirus (COVID-19) pandemic?

- **Conclusion**

1. What are the main lessons learnt? Which changes are required in terms of organization, procedures and support resources?

2. Are there positive sides to the crisis? Please provide at least three, and justify your answer.

Appendix 04: ALGERIAN BANK facilities



Direction Générale des Changes
REF/DGC/N° 045/2020

المديرية العامة للصرف
Alger, le 19 mars 2020

Note aux Banques Intermédiaires Agrées

Compte tenu de la situation sanitaire qui prévaut dans le monde et qui affecte la continuité du service de transport de courriers dans tous ses modes tels que DHL, UPS, FEDEX,...etc. causant des perturbations dans la transmission des documents relatifs aux opérations d'importation, nous portons à la connaissance des banques intermédiaires agréées qu'il est, dorénavant possible, de recevoir ces documents par voie électronique appuyés d'un swift de confirmation émanant de la banque expéditrice des documents.

Ces documents reçus par voie électronique peuvent servir à l'accomplissement de l'ensemble des formalités bancaires et douanières applicables aux opérations d'importation.

Il demeure entendu que la banque intermédiaire agréée doit reporter, sur chacun des documents reçus, le numéro de domiciliation afférent à l'opération d'importation concernée.

La présente prend effet à partir de la date de sa signature et ce, jusqu'à nouvel ordre.




Le Directeur Général des
Changes
Mohamed ASSAS

Bank of Algeria

Table of contents

Acknowledgements

Abstract

List of figures

List of tables

Abbreviations

Summary

General introduction01

Chapter I:Supply Chain and international procurement05

Section one: Supply Chain operations05

Introduction05

1.1 Supply Chain.....05

1.2 Supply Chain Management.....08

1.3 Categorizing Operations and Supply Chain Processes.....09

1.3.1 Planning.....09

1.3.2 Sourcing.....10

1.3.3 Making.....10

1.3.4 Delivering.....10

1.3.5 Returning.....10

1.4 The supply chain Triangle10

1.5 Supply Chain Threats11

1.6 External risks categories12

1.6.1 Environmental.....13

1.6.2 Economic.....14

1.6.3 Societal risks.....16

1.6.4 Security.....16

1.6.5 Technological.....18

Section two: Procurement and international sourcing18

2.1 Development and Evolution of Procurement.....18

2.2 Scope of Purchasing & Procurement.....19

2.2.1 Purchasing19

2.2.2 Procurement.....19

2.3 Purchasing VS Procurement key differences.....20

2.4 Value chain and Procurement.....	21
2.5 Main procurement activities.....	22
2.5.1 Purchasing.....	22
2.5.2 Consumption management.....	23
2.5.3 Vendor selection.....	23
2.5.4 Contract negotiation.....	23
2.5.5 Contract management.....	24
2.6 Procurement systems.....	24
2.7 Procurement Perspectives.....	24
2.8 International Purchasing/Procurement.....	27
2.8.1 Definition.....	27
2.8.2 Reasons for global procurement.....	28
2.8.3The systemic view of international procurement	28
2.8.4 International Procurement Strategy	29
2.8.5 The challenges of international procurement	29
Chapter summary	31
 Chapter II:COVID-19 and its impact locally and globally	 33
Introduction	33
Section one: Diseases outbreaks and pandemics	33
1.1 Definition of a pandemic.....	33
1.2 Pandemicsthroughhistory.....	34
1.3 Features of a pandemic.....	37
1.3.1 Wide geographic extension.....	37
1.3.2 Disease movement.....	38
1.3.3 Novelty.....	38
1.3.4 Severity.....	38
1.3.5 High attack rates and explosiveness	39
1.3.6 Minimal population immunity	39
1.3.7 Infectiousness	39
1.3.8 Contagiousness.....	39
1.4 Impact of pandemics.....	40
1.4.1 The economic impacts	40
1.4.2 Social impacts.....	41
1.4.3 Health impacts.....	42
Section two: Current international economic context and novel COVID-19	33
2.1 Novel coronavirus disease 2019 (COVID-19).....	43
2.2 COVID19 pandemic background	44
2.3 Current international economic context.....	45
2.3.6 COVID-19 Pandemic have a Severe Impact on Global Growth.....	46
2.3.7 Global Economy in Recession in 2020.....	47

2.3.8	A considerable tumble in commodity prices.....	48
2.3.9	Global financial markets are also strongly feeling adverse effects...	50
2.3.10	A rise in global unemployment.....	50
2.4	Analysis of the impact on African economies.....	51
2.4.1	African Economic Growth.....	51
2.4.1.1	African Exports.....	52
2.4.1.2	Loss of Activity and Jobs in the African Tourism and Travel Industry.....	53
2.4.2	Impact of COVID-19 on the most prominent African economies.....	54
2.4.2.1	Top Oil producers.....	55
2.4.2.2	The petroleum sector.....	56
2.4.3	Algeria during COVID-19 environment.....	57
2.5	Companies booming during COVID-19.....	58
2.5.1	Slack and Zoom.....	59
2.5.2	Netflix.....	59
2.5.3	Clorox Company and Reckitt Benckiser.....	59
Chapter summary		60
Chapter III:Algerian Qatari Steel: Procurement in the age of coronavirus.....		62
Section one:Overview of the host organization		62
1.1	Presentation and localization.....	62
1.2	The complex history	62
1.3	The complex challenges.....	63
1.4	Complex products	64
1.4.1	Rebar Steel Concrete.....	64
1.4.2	Wire rod quality.....	64
1.5	Competitors	64
1.5.1	Public competitors.....	65
1.5.2	Private competitors	65
1.6	Complex suppliers.....	65
1.6.1	Services	65
1.6.2	Raw materials and spare parts	65
1.7	Purchasing process.....	66
1.8	SWOT Analysis.....	66
1.8.1	Comments.....	67
Section two:Research methodology		
2.1	Objectives of the study.....	68
2.2	Qualitative study	68
2.3	Interviews	68
2.3.1	Semi structured interviews	69

2.3.2 Running the interviews.....	69
2.3.3 Content analysis.....	69

Section three:Result presentation and data analysis69

3.1 Qualitative study: The Interviews	69
3.1.1 First interview guide (Part I).....	69
3.1.2 Second interview guide (Part II)	72
3.2 Recommendations and Suggestions.....	74
3.2.1 Recommendations	74
3.2.1.1 Near-term best practices	75
3.2.1.2 Long term best practices	75
3.2.2 Suggesting a pandemic response plan.....	75
Chapter summary	77
General conclusion	78
Bibliography	
Appendices	