**MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC**

**RESEARCH**

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Requirements for Master's Degree in Commercial and Financial Sciences.

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# The role of the triptych cost-quality-time in logistics process

## Case Study: Swissport, Algiers.


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*“Education is the most powerful weapon which you can use to change the world”*

*-Nelson Mandela-*

# *Dedication*

*I dedicate this work:*

*To my beloved parents who have been my source of inspiration and strength, and who continuously provide their moral, spiritual, emotional and financial support.*

*To my brothers and sister who have always been standing by my side.*

*To my relatives, teachers, friends, and classmates, especially Mohammed Salah Boudefa, who shared their words of advice and encouragement to accomplish this thesis.*

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# List of abreviation

| Abreviation | Signification |
|---|---|
| AWB | Air Waybill |
| CQT | Cost-Quality-Time |
| IATA | International Air Transport Association |

| | |
|---|---|
| ICC | International Chamber of Commerce |
| OE | Operations efficiency |
| SCM | Supply Chain Management |
| SEC | Service Effectiveness for Consignees |
| SES | Service effectiveness for shippers |
| SLA | Service Level Agreement |
| SOP | Standard Operating Procedures |
| RCS | Accepted Cargo fromShipper |
| DEP | Departed |
| RCF | Recieving Cargo fromFlights |
| NFD | Nortification For Delivery |
| DLV | Shipment delivered to final consignee |
| ULD | Unit LoadDevice |

## Abstract

Logistics is one of today's important tools to face many economic challenges. Both of the supply chain and distribution activities form what is known as logistics process. The triptych cost-quality-time is at the heart of any logistic organizational performance; as a consequence, it is important to study the practices that effect these three dimensions. We therefore propose a conceptual framework that allows us to analyze the process of logistics between a logistics services provider, its partners, and their customers by interviewing the companies' logistics managers and their customers. We have to understand the impact of the company's logistic process on the triptych cost-quality-time, to bring solutions that improve the triptych's management.

**Key words**: Logistics, transport, logistics costs, quality, time.

## Résumé

La logistique est l'un des outils importants d'aujourd'hui pour faire face à de nombreux défis économiques. La chaîne d'approvisionnement et les activités de distribution constituent ce que l'on appelle le processus logistique. Le triptyque coût-qualité-délais est au cœur de toute performance organisationnelle logistique; en conséquence, il est important d'étudier les pratiques qui influent ces trois dimensions. Nous proposons donc un cadre conceptuel qui nous permet d'analyser le processus logistique entre un prestataire de services logistiques, ses partenaires et leurs clients en interrogeant les responsables logistiques et les clients de l'entreprise. Nous devons comprendre l'impact du processus logistique de l'entreprise sur le triptyque coût-qualité-délais afin d'apporter des solutions qui améliorent la gestion du triptyque.

**Mots clés** : Logistique, transport, couts logistiques, qualité, délais.

# General introduction

# General introduction

The emergences of the global economy and intensified competitions have led many firms to recognize the importance of managing their supply chain for fast and innovative introduction of services and products to the markets. Both of logistics and supply chain are not new ideas in today's businesses, but the principle of the effective management of the logistical triptych cost-quality-time have been developed to meet the performance of logistics process and the requirements of customers.

So how can businesses manage the triptych cost-quality-time to improve their logistics process? In other words:

What is the role of the triptych cost-quality-time in logistics process?

Our principle question is subdivided into:

-How does the triptych impact logistics process of the company?

-How does the triptych impact upstream and downstream logistics parties?

- Considering that costs are related to the company itself, the deadlines and the quality of services are related to the company's activity.
- Considering respect of deadlines is the main objective of all airlines (The Company's partners).
- Considering the quality of services is the interest of the customers

Three hypotheses arise to be tested in this work:

1- The triptych cost-quality-time defines logistics performance of the company.

2- Logistics deadlines impact partners' satisfactions.

3- Quality of logistics services impacts customers' satisfaction.

In order to test these hypotheses, the following study will be conducted:

1. An interview with the company's logistics cargo deputy manager, to find out whether the triptych cost-quality-time defines the company's logistics performance.

2. Interview guides will be presented to the manager of the company's partners in order to verify whether deadlines impact their performance. The company's partners, being airlines companies are the most interested in speedy services, and respect of deadlines.

For this, we will conduct a qualitative research, semi-structured interviews with the concerned logistics managers.

3. A face to face administrated questionnaire will be distributed face to the company's customers, so as to verify whether the services quality of the logistics services provider impacts their satisfaction. Our sample is a non random sample of convenience.

For this quantitative study, a survey on 30 customers is conducted.

The aim of this research is to identify the key role of the triptych cost-quality-time in logistic process, which will make it easier to apply this theory in the future.

A lot of reasons can be mentioned to justify choosing this subject:

Beside enriching our knowledge and exploring logistics, by dealing with this topic, logistics services providers will be able to understand their partners and customers and identify exactly what they need and what they're willing to change. It can also be benefit to the companies, by recognizing how to optimize their logistics costs, quality, and costs of services, and therefore can help increasing sales and profits.

During the process of this study, we faced a lot of difficulties, but the most important one was the lack of documentation dealing with this topic.

We have devided our research into three chapters. The first Chapter will be dealing with the most important topics that can help in understanding our study; logistics and transport, which will conceptualize each one of them, and highlight their interrelationship.

The second chapter will handle the Swissport's presentation and our qualitative study with the company's logistics managers, and partners.

Chapter three is the empirical part where the study will explore whether the quality of services impacts customer's satisfaction.

# Chapter 1: Logistics and transport

# Chapter 1: Logistics and transport

## Introduction

In a context of globalization, today's market has forced companies to invest in, and focus on supply chains. The growth of telecommunication and transport technologies has also led to the growth of Supply chain, which is known as logistics network too.

The competitiveness of a company passes through its capacity to develop strategies that meets customers' needs. Therefore, logistics is considered a real competitive tool that aims to improve the coordination and the mobilization of services in order to pursue a common goal: customer satisfaction.

In certain business sectors, logistics play an important role in their competitiveness. These companies prefer to free themselves from this constraint by outsourcing the peripheral activities of logistics to gain flexibility and focus on their core business. The latter gave birth to other companies that provides only logistics services such as transport logistics, warehousing and handling services.

In this regard, we have devoted the entire first chapter to the conceptual and theoretical world of logistics, transport, as well as the triptych cost-quality-time.

We split this first chapter into three sections. In the first section, we will introduce international transport: It is subject to some definitions of transport, a focus on air freight transport, and cargo services.

Our second section will be devoted to the concept of logistics: It will be the subject of logistics and Supply Chain Management definitions, as well as some logistics performance indicators.

Finally, the third section will focus on: the triptych cost-quality- time: we have divided this section into three sub sections; each section treats one of the important elements of the triptych, which impact directly logistics performance.

## Section 1: Introduction to logistics

Logistics is the art and science of management, engineering and technical activities which deal with supplying and maintaining resources to support objectives, plans and orientations. In this section, we are going to see the different definitions that have been set for logistics.

### 1 The definition of logistics and supply chain management

In order to well understand logistics, it's a must to define it first, and conceptualize Supply Chain Management.

#### 1.1 Definition of logistics

The definition of the word logistic has seen an evolution during the time. Many authors have a common vision toward the definition of logistics; we are going to present the most important ones.

Council of Logistics Management (1991)[1]defines logistics as "a part of the supply chain process that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services, and related information between the point of origin and the point of consumption in order to meet customers' requirements". Johnson and Wood's definition [2] uses five important key terms, which are logistics, inbound logistics, materials management, physical distribution, and supply-chain management, to interpret. Logistics describes the entire process of materials and products moving into, through, and out of firm. Inbound logistics covers the movement of material received from suppliers. Materials management describes the movement of materials and components within a firm. Physical distribution refers to the movement of goods outward from the end of the assembly line to the customer. Finally, supply-chain management is somewhat larger than logistics, and it links logistics more directly with the user's total communications network and with the firm's engineering staff.

[1]Y.Y Tseng,Weng Long Yue, Michelle A P Taylor, the role of transportation in logistics chain, January 2005, p1658

[2]Ibid

Pimor:"Logistics cover always the functions of transport, storing, handling, and in production companies, tend to extend its fields upstream to purchase and supply, downstream to commercial management and distribution".[3]

Heskett defines logistics as: "All activities aimed to introduce, at the least cost, a quantity of product, at the place and the time when a request exists. Logistics therefore concern all operations determining the movement of products such as location of factories and warehouses, supplies, physical management of work in progress, packaging, storage, inventory management, handling, preparation of orders, transport and delivery routes."[4]

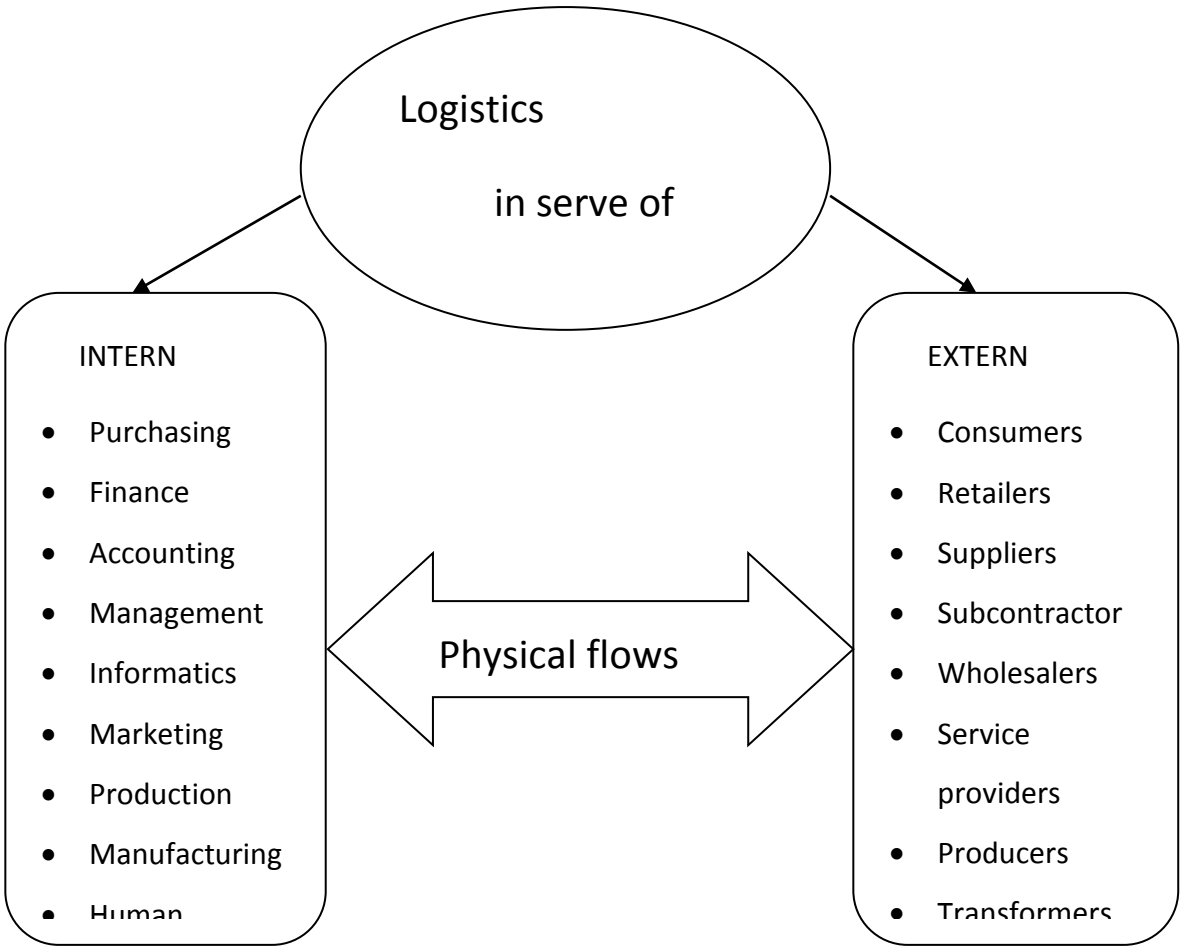
According to the different definitions set above, we can conclude that logistics has an important decisive function in each company that aims to optimize and control the different flows (Physical, informational, and financial ones) to attend its performance.[5].

[3] Translated from PIMOR (Y), FENDER (M) : logistique : production, distribution, soutien, édition Dunod, paris, 2010, p4.

[4] Translated from MEDAN (P), GRATACAP (A) : Logistique et supply chain management : intégration, collaboration et risque dans la chaine logistique globale, édition Dunod, paris, 2008, p.12.

[5] Translated from BENSABAA (F), LE GOFF (J) : Mesurer la performance de la fonction logistique, édition eyrolles, paris, 2009, p.49

**Figure N° 1 : Physical, informational and financial flows of logistics**




Source : Translated from MORANA (J) : De la logistique au supply chain management (SCM) : vers une intégration des processus, édition e-thèque, paris, 2003, p.17

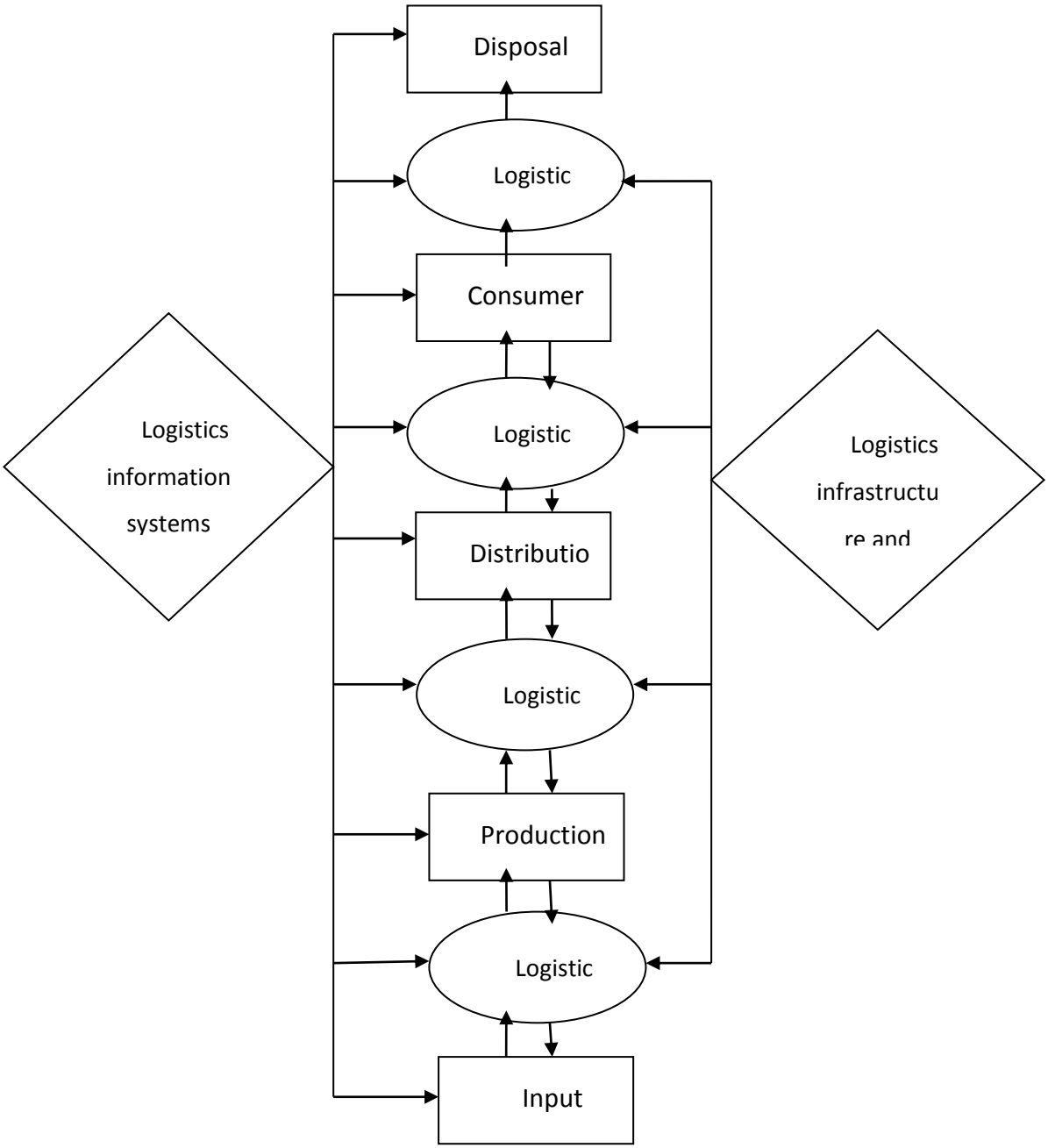
The figure above shows the role of logistics providing the necessary resources for each function in the company from upstream to downstream using the physical, the informational, and the financial flows.

## 1.2 Components of logistics system

Logistics services support the movement of materials and products from inputs through production to consumers, as well as associated waste disposal and reverse flows. They include activities undertaken in-house by the users of the services (e.g. storage or inventory control at a manufacturer's plant) and the operations of external service providers.[6]

[6] Proceedings of the Eastern Asia Society for Transportation Studies, Vol. 5, pp. 1658, 2005

**Figure N° 2: Overview of logistics system**




Source: BTRE, 2001

The figure above provides an overview of the logistics system. Logistics services, information systems and infrastructure/resources are the three components of logistics system and they are linked. The interaction between the three components of the system is conceptualized as follows.

Logistics services include physical activities (e.g. transport, storage) and non physical activities (e.g. supply chain design, selection of contractors, freightage negotiations).

Information systems include modeling, management of decision making, tracking and tracing. It provides the essential data that allows the consultation of each step of the interaction between logistics services. Infrastructure is consisted of human resources, financial resources, packaging materials, warehouses, transport and communications.

## 1.3 Definition of Supply Chain Management

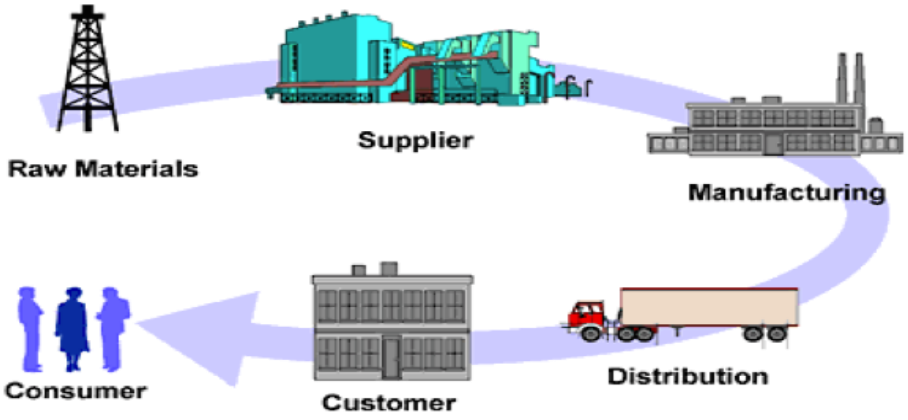
Ross (1998) defined SCM as 'a continuously evolving management philosophy that seeks to unify the collective productive competencies and resources of the business functions found both within the enterprise and outside in the firm's allied business partners located along intersecting supply channels into a highly competitive, customer-enriching supply system focused on developing innovative solutions and synchronizing the flow of marketplace products, services, and information to create unique, individualized sources of customer value.'[7]

SCM can be divided into three main activities – purchase, manufacture and transport (Thomas et al., 1996).[8] The figure bellow shows the elements of Supply Chain Management.

[7] Y.Y Tseng,Weng Long Yue, Michelle A P Taylor, the role of transportation in logistics chain, January 2005, p1662

[8] Ibid

**Figure N° 3: The elements of Supply Chain Management**




Source: http://api.ning.com/files/2R7gqZQ1go9CGIs22i-rwbr1YkUQyJEuOt8*SVyiqYHPLUSnaXMnFrxsF5jZxWX7bjOlmytFGyl8lFVONVtSQ8PJHB*e4TdZ/supplychain4.png (visited on March 18th 2019, 2pm)

The figure above displays the details of the whole processes from purchasing, management, production, and distribution to consumers.

## 1.4 Reverse logistics

The concept of reverse logistics has been applied to promote customer services and recycle resources.

Rogers et al. (1998) defined reverse logistics as 'the process of planning, implementing, and controlling the efficient, cost effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing value or proper disposal'.[9]

## 1.5 Logistics service providers

To describe and classify logistics service providers, we follow the approach of Krauth et al. (2004). The third party logistics providers (3PL) are designed in the context of long term outsourcing of logistics activities by a manufacturer (Sink et al., 1996; Rezzak 1998). "Carriers and shippers are labels for providers and buyers of transportation (Gibson et al., 2002). Freight forwarders are referred to as international trade specialists, offering a variety of services to facilitate the movement of international shipments (Murphy et al., 1992; Murphy and Daley, 2001). Shipping lines and shipping companies are conducting activities of

[9]Y.Y Tseng,Weng Long Yue, Michelle A P Taylor, the role of transportation in logistics chain, January 2005, p1663

transport and can be further distinguished into e.g. ocean freight shipping liners or ocean liner shipping (Durvusula et al., 2002; Fusillo, 2003). We define logistics service providers as companies, which perform logistics activities of a customer either completely or only in part (Delfmann et al., 2003; Lai, 2004)."[10] These functions includes transporting, warehousing, packaging, and less conventional activities like those related to customs clearance, billing, as well as tracking and tracing.

**Table N° 1:Services offered by logistics enterprises**

| Service | Proportion % |
|---|---|
| Transport | 97.2 |
| Warehousing | 77.8 |
| Distribution | 72.2 |
| Total Supply Chain Solution | 36.1 |
| Insurance | 38.9 |
| Customs Clearance | 25 |
| Information support | 47.2 |
| Inventory Management | 41.7 |
| Distribution, processing, and packing | 30.6 |
| Others | 8.3 |

Source: Transport Planning and Research Institute survey, July–October 2009.

The figure above shows the proportion of each service used in logistics enterprises; we can notice the significant proportion of transport (97%), warehousing (77,8%), and distribution (72,2%).

## 2 Interrelationship between logistics and transport

Logistics can't play its biggest role without a developed transportation system. A good transportation system would contribute significantly in logistics activities by reducing operation cost, promoting service quality, and improving logistics efficiency. Both public and

[10] ElfriedeKrauth, Hans Moonen, ViaraPopova, MartijnSchut, article of performanceindicators in logisticsservice provisionand warehouse management, 2005, P02.

private sectors need to improve their transportation systems in order to increase both the competitiveness of the government and the enterprises.

Transport is a core component of logistics moving goods between different points of the supply chain.

Logistics efficiency and effectiveness requires:

- Improved transport mode efficiency
- Coordination and interchange of different transport modes
- Effective integration of all supply chain management functions

### 2.1 Air fright logistics

Air freight logistics is a must for many industries and services to support their supply chain and functions. It arranges the delivery with speed, low risk of damage, security, flexibility, accessibility and good frequency for regular destinations, while the disadvantage is high delivery fee.

Reynolds-Feighan (2001) said: "air freight logistics is selected when the value per unit weight of shipments is relatively high and the speed of delivery is an important factor."[11]

## 3 Logistics performance

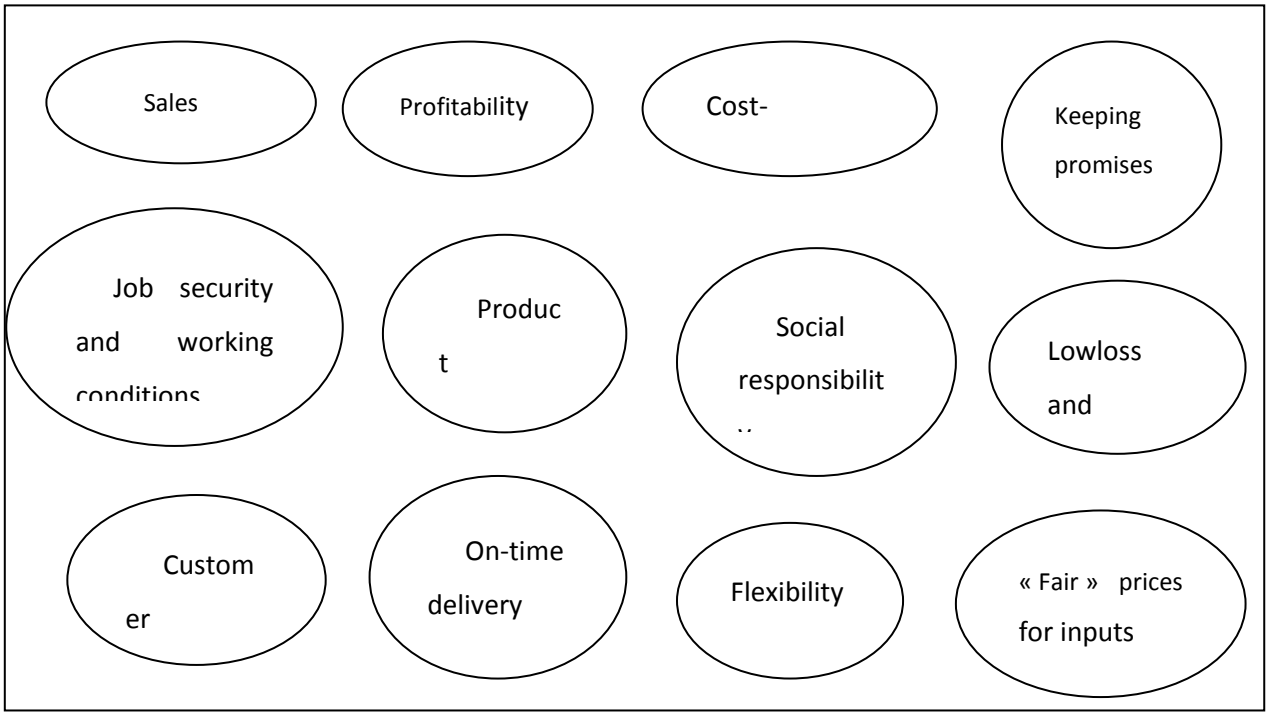
Conceptually, logistics performance may be considered as a part of the global notion of organizational performance, which has known many researches to find the one best way to define it. In this journey, Gleason and Barnum distinguished between effectiveness and efficiency. They defined effectiveness as "the extent to which an objective has been achieved", in other words, doing the right things, whereas efficiency was defined as "the degree to which resources have been used economically", better said, doing things right. In the other hand, Sink and his colleagues set seven dimensions to what performance means: they are effectiveness, efficiency, quality, productivity, quality of work life, innovation, and profitability / budget ability.

Given the lack of a universally-agreed definition for performance, literature gives diverse dimensions to conceptualize logistics performance. According to Rhea and Shork,

[11]Y.Y Tseng,Weng Long Yue, Michelle A P Taylor, the role of transportation in logistics chain, January 2005, p1665

Physical distribution effectiveness is "the extent to which distribution programs satisfy customers". They suggest incorporating multiple goals in defining performance. The figure below answers the question "what is logistics performance?"

**Figure N° 4: What is logistic performance**




Source: International Journal of Physical Distribution &Logistics Management, P23

Logistic performance may be defined as the extent to which goals like those mentioned in the figure n° are achieved. However, incorporating multiple dimensions highlights the problem of interdependencies and conflicts between the goals.

Transport logistics includes shippers on the input and consignees on the output side. The goal of a logistic transport service provider is to ensure both of upstream and downstream customer's satisfaction with a greater effectiveness and efficiency than the competitors. Goals conflicts arise at this step. For example, cost efficiency in providing services might be one of the principle performance measures for a transport logistics provider but this might not be appreciated by shippers and consignees, as for them, they require high quality and low price delivery of shipment. Another example is that, the delay of shipment until the truck is fully loaded to reduce the delivery costs, which is considered an efficient measure. However, this leads to a reduction of customer's service effectiveness.

Neither performance measures alone, nor effectiveness and efficiency can fully mirror logistics performance. The three aspects should meet the goal of all parties; i.e Shipper, service provider and consignee. Based on these three dimensions of transport, logistics performance is defined into:

- Service effectiveness for shippers (SES)
- Operations efficiency for transport logistics service provider (OE)
- Service effectiveness for consignees (SEC)

Service effectiveness for shippers and consignee measure how well the activities are performed to meet the requirements of shippers and consignees, respectively. Operations efficiency refers to the efficiency of a transport logistics service provider in the use of resources to perform its service activities.

## 3.1 Logistics performance indicators

Based on the needs of logistics for the society and the international experiences, logistics metrics should cover three areas: Efficiency, safety, and environmental impact (Table n° 2).

**Table N° 2: Logistics performance indicators**

<table>
<tr><th colspan="2">View point</th><th colspan="2">Micro performance indicators</th><th>Macro performance indicators</th><th>Major factors</th></tr>
<tr><td rowspan="3">Users of transportation and logistics services</td><td rowspan="3">Service and efficiency</td><td rowspan="2">Service</td><td>Average transit time cargo visibility</td><td rowspan="2">_</td><td rowspan="3">-Logistics infrastructure<br>-Track and trace capability<br>-Modal interconnection<br>-Multimodal usage<br>-Information technology penetration<br>-Load factor<br>-Equipment utilization efficiency<br>-Customs process efficiency</td></tr>
<tr><td>Percentage of on-time deliveries</td></tr>
<tr><td>Cost</td><td>Transport cost as a percentage of total product cost</td><td>Logistics cost as percentage of gross domestic product</td></tr>
<tr><td rowspan="3">General public</td><td rowspan="2">Safety</td><td colspan="2">Loss and damage rate</td><td rowspan="2">Accident rate</td><td rowspan="2">-Percentage of overloaded trucks<br>-Percentage of drivers with excessive on-duty hours</td></tr>
<tr><td colspan="2">Citizen complaint rate<br>Emergency services response time</td></tr>
<tr><td>Environmental and health impact</td><td colspan="2">Reduction in emission and noise test violation of trucks</td><td>Fuel economy reduction of pollutant emission</td><td>-Percentage of power units failing to meet fuel economy targets<br>-Percentage of empty movements<br>-Reduction in noxious gas emission<br>-Reduction in greenhouse gas emission</td></tr>
</table>

Source: Transport efficiency through logistics development (page 14) Asian Development Bank 2012

Logistics performance indicators mentioned in the (table n°2) distinguishes between the ones that concern users of transportation and logistics services (service quality and cost indicators) and those important to general public (safety, environmental impact).

## Section 2: the triptych Cost-Quality-Time

The enrichment of a company is the result of a management based on a good governance of goods and human resources. Indeed, a good choice of sources and funding time is the starting point for the success of any project. Then, it comes the optimization of these invested capital by a better match between cost, quality and time, to finally proceed to the activities that generate added- values.

Project management is well known for its economic and organizational benefits in terms of quality, cost, and time.

### 1 Conceptualization:

The criteria for setting objectives in logistics are always three, namely:

#### 1.1 Quality

The quality of the objectives is constantly under surveillance, with a multiplicity of criteria and relevant indicators to decide and reorient the actions in the good backward.[12]

#### 1.2 Cost

The concept of budget allocation is too simple. Obviously, at the time of the project contract, management gives budgetary orientations. The project consists in constantly looking for the best services at the lowest costs. Many decisions are to be made based on the estimation of the costs by practicing the art of the correct approximation. However, the most important point will be for the project team to give management the assurance that with this project, the company will be more profitable due to the attractiveness and the profitability of the product.

[12] Translated from CORBEL (j), management de projet ; fondamentaux, méthodes, outils, Edition Eyrolles, 2012, paris, p67.

## 1.3 Time

On the triptych, "Time" parameter represents the respect of the delivery date, it characterizes the success or the failure of the project. This "deadlines" parameter will be respected: [13]

- If we estimate accurately the deadlines and durations of all project tasks, this good estimation is based on a precise knowledge of the projects development plan.
- If we master the overruns (internal and external) that can occur over the duration of the project, by analyzing them and renegotiating them (control of deadlines).
- If we reflect in the contractual calendar, all new requests expressed by the customer and which lead to deviations from the original contract.

Any industrial performance is measured by these 3 parameters, under these three criteria.

It is necessary to define the exact names that are most relevant for setting up indicators; these indicators are essential for a shared visibility of the project actors, provided that they are measurable without ambiguity[14]

## 1.4 The triptych cost-quality-time from a logistic point of view

The cost-quality-time triptych refers to the triple constraint imposed on businesses to respond simultaneously in terms of[15]:

• Quality: that is, conformance with expressed or implicit customer needs

• Costs: the most interesting for the customer, coherent with his perception of what he considers as a value, and applicable for the Supply Chain.

• Time: as desired by customers, knowing that too early is not necessarily better perceived than too late.

The triptych aims to achieve the total logistics quality.

[13] OUDOT (S), management des systèmes/gestion de projet EGC, 3éme année, EUROMED, 2009-2010, p46.

[14] http://nathalie.diaz.pagesperso-orange.fr/html/qualite/6outils/triangleqcd/indextri.html (visited on Match 19th 2019, 2pm)

[15] RAHAL (F) : Translated from cours de logistique globale, HEC, 2015

**Figure N° 5: The triptych of logistics total quality**


Source: http://images.expertise-team.com/root/Blog/Mix/Mix_165.png (visited on March 19th 2019, 3pm).

The triptych aims to achieve the total logistics quality.

## 1.5 Total quality definition

It is a process of a continuous progress by which the company makes every effort to satisfy its customers, in terms of Quality, Cost and Time, by controlling the processes and the integrating human resources.[16]

Crosby defines total quality under the form of four absolutes[17]:

1. Quality is conformance to requirements not goodness: Companies must establish requirements to be met and communicate them to the employees. Also they should provide the appropriate tools, techniques, and the appropriate training on them, not ignoring encouragement and the necessary support.
2. The system of quality is prevention: The only prerequisite of prevention is an understanding of the process; implementation of a statistic process control can provide the understanding needed.
3. The performance standard is zero defects: Zero defects philosophy believes in total perfection 'to do the job right at the first time'. It has to be a long term program.

[16]Translated from http://www.cat-logistique.com/qualite_logistique.htm (visited on March 19th 2019, 4pm)

[17]BOUSSAFI (K): Total Quality Management class at ESC, 2019

4. The measurement of quality is the price of non conformance: Crosby considers quality is free. It's not a gift but it's free, the "non quality" things are what cost money.

## 2 Logistics quality

As in any activity, the implementation of a quality approach is essential in logistics activities. Total quality must be applied in the Logistics Departments. The quality of the logistics service is part of the company's image. Whether for the delivery of an automobile, an electrical household product, a textile article, a washer or a seal ... etc, logistics managers must be able to perceive the needs and the expectations of the customers, and then monitor the performance of the company to meet them. Managing the logistics in a spirit of a continuous and a visible progress can bring out competitive advantages, by differentiating offers, and offering quality services. Logistics helps to increase the competitiveness of the company.

Two surveys questions for businesses were made to define what logistics quality is, and how it can be measured. The answers are presented in rank order in the following table.[18]

**Table N° 3: The gap between what is value and what is measured**

| Logistics quality | Most important logistics quality measures |
|---|---|
| Total support of customer needs | On-time delivery |
| On-time delivery | Order cycle time |
| Error-free transactions | Order fill rate |
| No out-of-stock | Accurate of order |
| No goods damaged in handling or delivery | Customer satisfaction |

Source: Survey of the International Journal of Physical Distribution & Logistics Management. P36

There is a clear gap between the importance given to the components of logistics quality, and the measures being used. Table n° shows a tendency towards using traditional logistics measures, not those considered to be important to the customer.

[18]International Journal of Physical Distribution & Logistics Management. The State of Quality in Logistics, William F. Read Mark S. Miller 1991. P36

Customer satisfaction, the most important goal, is one of the least measured. While for customers, complete orders are almost always the most important measure.

## 3 Logistics costs

Logistics generates different costs, all costs related to the management of flows in the logistics chain. Logistics costs include fuel, warehousing space, packaging, security, materials handling, tariffs and duties. Its main objective is to achieve the minimization of these costs with an optimum quality services.

B. Szałek finds that logistics costs must be identified as direct costs (transport, warehouses, stocks, handling, and communication) and as indirect costs. Whereas H. Pfohl indicates the complexity of warehouse management costs, among which the main items are listed[19]:

- order processing costs,
- transport costs
- inventory management costs
- warehousing costs

To sum up, logistics costs represent:

### 3.1 Transport costs

There are two categories of transportation costs: primary transportation costs and secondary (final) transportation costs.[20]

- Primary transportation cost: It represents all the expenses related to the transfer of pallets of products, or raw material, or others, from the central of production to the distribution warehouse.
- Secondary transport cost: These costs represent all the expenses generated from the delivery of the products from the distribution warehouse to the final consumers. These transport costs depend essentially on the mode of transport and the distance to be traveled for the delivery.

[19] Transportation Research Procedia, 2016 : Identification and Measurement of Logistics Cost Parameters in the Company. p 492

[20] Catalyst logistics website: http://www.catalyst-logistics.co.uk/logistics-solutions/transport/primary-transport-management (Visited on March 18th 2019, 1pm)

## 3.2 Inventory management costs:

The intrinsic costs of storage include four main categories that are:

The investment cost: It represents the cost of the physical stock. It is a financial burden that is the current cost of a company's capital.

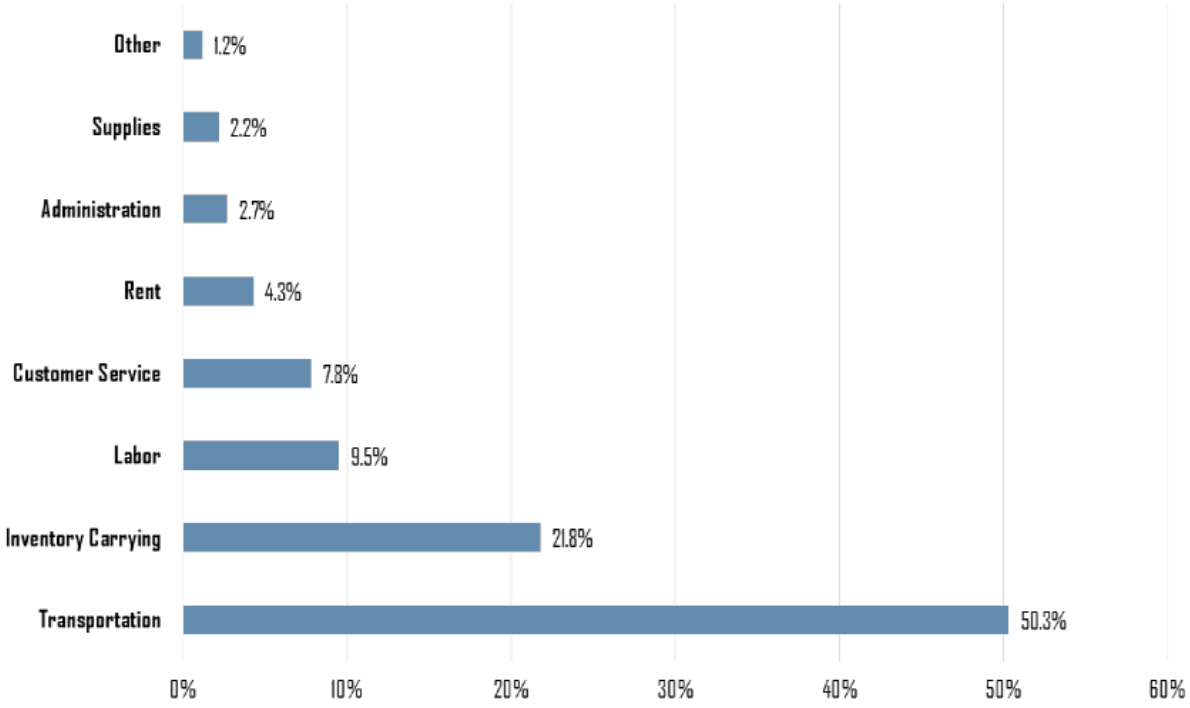
- Service costs: They represent the costs of inventory management and insurance.
- Risk Costs: all the risk-related expenses that occur through pilferage, deterioration of inventory, damage and inventory obsolescence.
- Costs related to the type of storage: These costs are related to the company's storage strategy in terms of warehouse choice: private warehouse, public warehouse, or rented warehouse.

## 3.3 Warehousing costs:

Warehousing costs represent the largest part of the costs; they are related to the size of the storage sites, the quantity of the goods, the handling tools used, but also the physical flows circulating at the same time inside the warehouse.

The costs of a warehouse are broadly distributed as explained in the following figure

**Figure N° 6: Logistics costs breakdown**




Source: Establish, Inc. / HWD & Grubb & Ellis Global Logistics.

https://transportgeography.org/?page_id=6517

Values provided here are the averages; costs may vary depending on different settings such as:

- The geographical location of the warehouse, (nearby/ far from big cities, motorway services, …)
- The size of the warehouse (racks, number of doors, platforms, shape...)
- Its state, its standards, its classification (Possibilities to store different types of products ...)
- The organization of the company: large provider, own warehouse…etc.

### 3.4 The costs of the information system:

Information system costs can represent a variety of information or communication requirements, starting from the order processing to the loading of the assembly lists. They depend on the level of the technology introduced by the company.

## 4 Logistics time

A simple way to address logistical issues in a business is to concentrate on the time approach[21]:

The time (deadline cycles) of physical and administrative operations is an essential dimension of the logistics and the supply chain. First of all, the mastery of the deadlines, then their control and their reduction, allow for each operation, in each step of the logistic chain, to make the company more responsive and flexible.

On each of these steps, the following questions need to be asked, to contribute to the knowledge, the control, and the shortening of the deadlines:

1. What is the deadline of this operation?
2. What was the average deadline over the last period?
3. What are the means to reduce the dispersion of this deadline in order to better control this operation?
4. What are the actions to be taken to control the deadlines?

[21]Translatedfrom Master thesis: La contribution de l'externalisation logistique sur le triptyque coût-qualité-délai, M.TayebRezki, EHEC 2017, P35.

5. Should this time be reduced?
6. What are the possible actions to reduce this deadline by 10%, by 20%, to eliminate it?
7. What are the market deadlines on this type of operation? Of our competitors?
8. Does the deadline for this operation impact other downstream operations?
9. What are the upstream operations that play on the deadline of this operation?

These questions can be a simple test to measure the deadlines of the operations of each function mentioned in the table below:

**Table N° 4: Different logistics deadlines**

| Production | Purchase and supply |
|---|---|
| -Production time<br>-Change of series deadlines<br>-Overall flow time | -Materials supply time<br>-Finished products supply time<br>-Upstream transport time<br>-Clearance period<br>-Unloading container time<br>-Merchandise control sorting time |
| Logistics operations | Other functions |
| -Processing time of a reception<br>-Time of the commodity availability<br>-Processing time of the order sales<br>-Preparation time of an order<br>-Control time<br>-Waiting time at the dock<br>-Loading time<br>-Delivery time<br>-Time to obtain profs of the delivery<br>-Rate of stored product rotation | -Billing time<br>-Payment time |

Source: Master thesis: La contribution de l'externalisation logistique sur le triptyque coût-qualité-délai, Mr. Tayeb Rezki, EHEC 2017, P36

Measuring the process of execution time for the different operations mentioned in the table above is important. Measuring leads to knowledge, which allows taking regulations and mastery actions in order to reduce deadlines.

## Section 3: International transport of goods

International transport of goods is considered as a logistic system that is built between multiple actors of a logistic chain, to face multiple constraints and rules that manage the transactions between all the parties.

It regroups transport operations, storing, warehousing, distribution, and duty payment. A well built logistic chain allows controlling the different flows[22], transporting under the best conditions possible of security, profitability, and effectiveness, for all the actors of the logistic chain.

In fact, the best way to transport goods is the one that optimizes costs, delivery time, shipping security, and branding of the company. The choice of a transport modal is important and should be integrated in the commercial politic of a company. Transportation includes[23]:

### 1 Depart and arrival identification

The exporter has to choose the shipping agent and determines the destination under some contexts.

#### 1.1 Choice of shipping agent

The first step of exportation is to:

- Study the transport possibilities nearby the company: international airport, port, subways;
- Measure the tools of handling and warehousing that the company has, or is able to have.

This first information will allow:

- Not only to choose the transport model in term of product nature, costs, and delivery time;

[22] Flows of goods/ materials, information flows, personal flows, financial flows; etc.

[23] Emirates Ground Handling Guide, 2017, 60.

- But also to take the necessary preventions while producing goods in order they will be able to be transported in the best conditions

### 1.2 Choice of the destination

The company exports generally goods to diverse destinations. For each destination, there must be a suitable modal of transport which is the most accessible to the consignee

## 2 Transport components

All of warehousing, deliveries frequency, delivery time, service quality, shipping security, pricing, and Incoterms, must be identified

### 2.1 Warehousing and deliveries frequency

Warehousing represents huge part of logistics costs. It is a must to reduce the storing time as much as possible, before the shipping time, and after the arrival to the destination.

Many factors must be considered as well:

- Place of warehousing ( before the departure of goods, and after their arrival to the final destination)
- Costs of the place and the size of the warehouse, being the determinant of the volume and frequency of goods to be forwarded.

### 2.2 Delivery time

In a time where companies are looking forward to minimize their sorting, and applying the “Zero stock” concept, it is becoming more important to pay attention to the respect of delivery time. Knowing that there is a huge range of perishable products that don’t support any delay of shipment

### 2.3 Service quality

For the benefits of the shipper, he doesn’t have to care about the impact of the operations only on his profitability, but also on his company’s branding. He has to look after the well functioning of the logistic flows as they are initially programmed.

## 2.4 Pricing

It's not always the best to look after the cheap transport logistic provider. There must be a comparison between different service providers to select the ones that offer a flexible mix of transport components.

## 2.5 Incoterms

Every ten years, the International Chamber of Commerce (ICC) publishes an update for the international commercial terms; Incoterms. Incoterms provide uniformly recognized standards for trading across the world. There are currently seven common incoterms that are used for all types of transports

- EXW-EX works ( named place)

EXW means that the seller has delivered when he places the suitable packaged goods at the disposal of the buyer at an agreed-upon place. The goods are not cleared for export.

- FCA- Free Carrier

FCA means that the seller fulfills his obligations when the goods are handed, suitably packaged, cleared to the carrier, at a place named by the buyer, where the responsibility for goods passes from the seller to the buyer.

- CPT- Carriage paid to

CPT stands for when the seller delivers the good to a carrier, at a destination jointly agreed upon by the seller and the buyer. The seller is responsible for paying the fright charges for goods to be transported to the named destination, but he is not responsible for ensuring goods shipment as it's transported. Also in case of multiple carriers, risk passes as soon as the goods are delivered to the first carrier.

- CIP- Carriage and Insurance Paid to

The seller, under the same conditions as CPT, is also obliged to pay insurance charges, until the carrier receives the goods.

- DDP- Delivery Duty Paid

DDP holds the maximum obligation for the seller. The seller must deliver goods to the buyer cleared for import, and ready for unloading. He maintains responsibility for all costs including pre-shipment costs, and import duty for the destination country.

- DAT- Delivered At Terminal

DAT indicates that the seller fulfills his obligations when the goods are unloaded at the destination terminal, which refers to a container yard, quayside, warehouse or another part of the cargo terminal.

- DAP- Delivered At Place

DAP means the seller delivers the goods to the buyer at a pre-agreed place, ready to be unloaded. It is the buyer responsibility to pay any customs clearance, and import duties or taxes.

## 2.6 Types of transport

Transportation can be done through one or multiple modal of transport (Train, boat, plane, truck, and barge).

We distinguish homogeneous transport (title1), combined transport (title2), mixed (title3), mixed superimposed (title4), and multimodal (title5).

1. Homogeneous transport

   It is considered as a homogeneous transport when all shippers are subject to the same legal regime. Exp: many shippers with the same transport document “waybill”.

2. Combined transport

   It is considered as a combined transport when each shipper is subject to a different legal regime. Exp: a shipment that requires a national document for one shipper and an international document for the other shipper.

3. Mixed transport

   It is considered as a combined transport when the shipment requires multiple modes of transport. Exp: The pre-shipment of goods on trucks, followed by a principal train transport.

4. Mixed superimposed transport

   It is considered as a mixed superimposed transport when a transport mode is loaded on another. Exp: a truck loaded on a ship.

5. Multimodal transport

   It is considered as a multimodal transport when it is made out of a unique act of transport (fulfill one demand), using different transport modes. Exp: pre-shipment, principle shipment, post-shipment.

Shipping goods can also depend on multiple shippers; in this case, there can be successive different types of transport.

## 2.7 Modes of transport

Goods can be transported by water, air, road, railways, pipelines, or by postal systems.

- Water transport: it is the cheapest way of transporting bulky goods over a long distance which is very important. It includes inland waterways, and ocean waterways.
- Inland waterways: It is transporting through all navigable rivers, lakes and man-made canals. It is considered an important mode in many part of the world, like the use of Rhine and Dambe rivers in Europe, the Zaire and the Nile in Africa, the Mississippi in USA etc.
- Ocean water ways: The majority of bulky goods, materials and passengers pass by ocean ways, and this mode is considered the cheapest.
- Air transport: it is the newest form of transport which was introduced in 1903 and was developed into a real mean of goods and passengers transport by 1930s.Later on, it has known the greater importance after the Second World War. It is used both for national and international flights.
- Road transport: It exists everywhere and involves motor vehicles (cars, lorries, buses, bicycles, and trucks).
- Railway transport: this was developed during the industrial revolution in 19$^{th}$ century for political and economic reasons, in order to penetrate isolated regions. It is also considered cheap, safe and comfortable for passengers.
- Pipeline transport: it is the use of hallow pipes to transport water, crude oil, petroleum and gas. It is safer mode of transportation than tankers or trailers when it comes to transporting these liquids.

# 3 Air Freight Transport

In November 1910, there was the first cargo carried by air from Dayton to Columbus, Ohio. It is considered less than seven years after the Wright brothers' historic first flight. By 1914, the United States started regularly transporting post by air. Air mail services increased significantly by 1925. Moreover, the Second World War brought an explosion in the use of aircrafts. In the

seventies, the modern period of air freight took place with the door-to-door express services provided by DHL and Federal express.

## 3.1 Definition of Cargo

According to Cambridge Dictionary cargo is defined as "Goods carried by a ship, aircraft, or other vehicle"[24]

## 3.2 The unit load device

ULD or Unit Load Device can be termed as a device which has been designed to interface directly with the in plane loading and restraint systems. It meets all restraint requirements without the use of supplementary equipment.

Unit Load Devices play a vital part in ensuring that, as air cargo and passenger volume increases, the cargo and baggage is moved safely. Quickly and cost effectively not only through the air transport sector, but also by means of proper interface, through the land based transport sectors.

## 3.3 The International Air Transport Association (IATA)

"It is the trade association for the world's airlines, representing some 290 airlines or 82% of total air traffic. We support many areas of aviation activity and help formulate industry policy on critical aviation issues".[25]

## 3.4 IATA ULD Regulation

The Unit Load Device Regulation is published based on the requirements of Annexes 6 and 8 to the convention on International Civil Aviation-Chicago, 1944. It includes technical, operational, standard specification and regulatory requirement with regards to ULD.

## 3.5 The regulatory framework

### 3.5.1 Conventions

- The Warsaw Convention (October 12th, 1929), It regulates the legal relations of carriers and defines the used transport document (Air Way Bill). It's applied to states that are not part of the Montreal Convention.

[24] Cambridge dictionary

[25] IATA official website: www.iata.orghttps://www.iata.org/about/pages/index.aspx on 03/12th/2019

- The Chicago Convention (December 7, 1944) consists of 22 chapters, 96 articles and 18 annexes, and describes the rules for the operation of civil aircraft, airports, navigation, aviation safety, aircrew, international standards for civil air transport.
- The Guadalajara Convention (18 September 1996), This Convention completes that of Warsaw (12 October 1929), for the unification of certain rules relating to international air transport carried out by a person other than the carrier.
- The Montreal Convention (May 28th, 1999) unifies certain rules related to international air transport, based on the International Air Transport Association (IATA) agreement (October 31st, 1995), which substantially improves the conditions of compensation in the case of international air transport accidents.

### 3.5.2 Protocols

Some provisions of the Warsaw Convention have been amended by three protocols

- Guatemala City Protocol (March 8, 1971)
- Protocol of the Hague (18 September 1955)
- The four protocols of Montreal (September 25, 1975)

### 3.5.3 Codes[26]

In France, the Civil Aviation Code brings together laws and decrees covering civil aviation.

### 3.5.4 Agreements

They aim to modernize the civil liability system, such as the inter-transporter agreements (IIA), signed on October 31, 1995 in Kuala Lumpur.

### 3.5.5 Decrees

For the safety and security conditions; the decree of May 11, 2000 sets the terms and conditions of" known shipper"[27]

[26] The " Goods Transport" dealt in the articles L.321-6 to L.321-7

[27] Article L.321-7 of the Civil Aviation Code, related to the security of air cargo.

## 3.6 Environmental interest

Greenhouse gas emission allowance trading system (February, 2nd, 2009), establishes policies to tackle climate change by reducing greenhouse gas emission.

## 3.7 The elements of transporting

It is necessary to know the principle obligations of the seller, and the buyer also all the different documents that constitute the preparation phase of transport, labeling and packaging, the unit Load Devices, regulated products, types of planes, and the transport contact.

### 3.7.1 Preparation, labeling, and packaging

These functions are always supported by the seller.

Labeling is an operation in which companies must accord huge attention, because it doesn't only identify the goods and presents handling constructions[28], but also it makes it easier to look after the goods in case of lost. The usual indication (high, low, fragile, etc) must show up on each label, beside the address of the expeditor and the one of the consignee.

Conditioning plays the role of commercial presentation whereas packaging doesn't only have to fit the nature of the product, but also the mode of transport. In case of a multimodal transport, packaging must take in consideration all the modes of transport.

### 3.7.2 Unit Load Devices- ULD

A Unit Load Device is a palette or a container that is used to load freight for its transportation. It is generally owned by air transport companies. It allows aligning packages, protecting merchandises, and even controlling their temperatures.

### 3.7.3 Regulated products

For security and hygiene reasons, some goods transportation is subject to some recommendation or some strict rules.

- perishable food

They are transported in packages with ventilation holes or in packages containing dry ice. The transportation of perishable goods across long distances would be simply impossible without air transport

- Livestock (animals/plants)

[28]These constructions are represented in the French standard NF.H00-004 concerning packaging and graphic symbols.

They are transported in containers, stalls which must be set on the ground. International rules related to the plane, the atmospheric conditions, the temperature and the pressurization of the bunkers, must be respected.

- The pharmaceutical industry

  It relies on air freight to transport time-sensitive products such as vaccines, at controlled temperatures.

- Dangerous goods

  They are considered dangerous goods, the ones that are: explosive, gas, inflammable liquids, toxic goods, radioactive, corrosive, etc.

- Electronic devices

  Electronic devices such as smart phones and tablets are shipped by air to worldwide consumers. IPhone releases actually cause annual spike in air fright prices[29]

- E-commerce businesses

  E-commerce businesses-including the mighty Amazon, Ali Express and others- rely on air freight to deliver swiftly products to worldwide consumers.

- Mail services

  Mail services such as postal letters and important documents need to be transported safely and in a short period of time, which implies air transport.

## 3.8 The transport contract

The contract of goods air transport is materialized under the Air Waybill- AWB. According to Will Kenton, an Air Waybill is "is a document that accompanies goods shipped by an international courier to provide detailed information about the shipment and allow it to be tracked. The bill has multiple copies so that each party involved in the shipment can document it".[30]

**Airlines**

Airlines are the central element of the air transport system. Based on air transport demand, airlines typologies are segmented into:

- Passenger transport: when segmenting the passenger's air transport, the variables to be considered are

[29]HFS web site Flying high- the growth of the air freight industry 17 April 2018

[30]Air Waybill Jan 17, 2018 Investopedia website : https://www.investopedia.com/terms/a/airway-bill.asp

- The purpose of the trip (Business, leisure, etc)
-The trip duration
-The socio-cultural characteristics of the traveler
-The specific requirements of the traveler of each segment

- Cargo transport: The organization or the client needing air transport service has the main concern of fast delivery services and overcoming some geographic obstacles. The three major segments of cargo transportation are:
  -Emergency transport
  -Perishable goods
  -Transport logistics.

**Conclusion**

Airlines accept all kinds of cargo for air transport. However, not all shipments/ cargo may be transported due to a defined general and specific restrictions and conditions. It is subject to a set of international regulations.

Air transport is known with its high speed, being the fastest mode of transport, which provides quick, comfortable, and efficient transport services. It is accessible to all areas regardless the obstruction of land. It is free from physical barrier. In spite of these advantages, air transport might be considered the most risky, as the chances of accidents are greater in comparison to other modes of transport. Besides being very costly, aircrafts have small carrying capacities. This mode of transport depends on the weather and can be delayed in case of uncertain weather.

# Chapter 2: Swissport Cargo ground handling provider

# Chapter 2: Swissport Cargo ground handling provider

## Introduction

Logistic services touch the entire supply chain, that's why they are important in improving company's overall performance. Logistics Service Providers can enhance the performance of companies because they have an ability to co-operate both upside and downside with supply chain partners, as well as in parallel with other Logistic Services Providers. Logistic services providers offer a full range services designed to facilitate warehousing, transportation process, the destination or the mean of transport, no matter what the product is.

Externalizing logistic services help companies to focus on their main activities and ensure logistics services to be well performed, from warehousing to transporting during the production and the commercialization of their products and services until they reach the final consumer.

For global cargo and aircraft ground handling, only Swissport and Air Algérie are the companies that hold Algeria's market shares. All the international airlines deal with the two companies to handle their ground logistics services. For this reason, we choose Swissport international ground handling provider to discover its logistics process, and how they manage to optimize the triptych cost, quality, and time.

## Section 01: Swissport

### 1 General presentation of the company

Swissport International Ltd. is the leading global airport and aviation service provider in terms of quality, reliability, safety, innovation and network coverage. Offering a comprehensive range of services, Swissport is able to provide an "all-inclusive" service package in addition to managing integrated collaboration – outsourcing – models.

**Table N° 5: Key figures of Swissport**

| **Key figures** | |
|---|---|
| Revenue | EUR: 2.8 billion |
| Countries | 50 |
| Employees | > 68,000 |
| Flights handled (movements) | > 4.5 million |
| Cargo handled (tonnes) | > 4.7 million |
| Warehouses | > 133 |
| Airports served | > 315 |
| Customers | > 850 |
| Passenger handled (departures) | > 265 million |

Source: Swissport intern documentation

Swissport aims to maintain its position as an international leader of aircraft maintenance and ground handling, besides achieving profitable growth and maintaining progress in key areas such as quality and reliability.

### 2 Swissport values:

#### 2.1 People

Swissport shows respect towards people and their values; it doesn't compromise on safety and work with enthusiasm and enjoyment.

### 2.2 professionalism

It is pioneer; working constantly on achieving sustainable results, it creatively explores new options, and improves its solutions.

### 2.3 Partnership

Continually striving to exceed the expectations of its clients and its commitments, it delivers excellent service; in any place at any time.

## 3 Swissport's partners

Swissport Cargo Algiers works mainly with three airlines companies which are, Qatar Airlines, Emirates Airlines, and Turkish Airlines.

### 3.1 Qatar Airlines

Qatar Airways is one of the youngest global airlines that serve all six continents. It's also the world's fastest-growing airline. It connects more than 160 destinations every day, with a fleet of the latest-generation aircraft, and high level of service from Hamad International Airport in Doha, the State of Qatar.

The company was launched in 1997 and since then, it has earned many awards, such as the five-stars rating by Skytrax. It was also voted Airline of the Year by Skytrax in 2011, 2012, 2015 and 2017.

Akbar Al Baker, the Group Chief Executive says "Travel today involves a mix of short, medium and long-haul segments, with more people travelling than ever before. With the breadth of network coverage today, virtually no destination is unreachable. This is why the commitment to service is paramount; as our guests are travelling farther and more frequently than ever before, the experience on board is an important part of the journey itself". He adds: "My goal is to make Qatar Airways your airline of choice, offering the flights you want to the destinations you need. That drives this team of more than 46,000 professionals every day, and will continue to motivate us to make Qatar Airways your only airline."[31]

According to the Chief Executive, Qatar Airlines accomplished these goals by focusing on the details – how to run the business, and how customers experience the airline.

[31]Qatar Airlines website: https://www.qatarairways.com/en/about-qatar-airways.html# visited on April 15th 2019 at 4pm

## 3.2 Emirates Airlines

Emirates airline is an international company, connecting 156 airports in 84 countries from its hub in Dubai, United Arab Emirates. It commercializes air transportation services. Dnata is one of the largest entities that provide cargo, and ground handling services in the world, serving over 320 airlines in 37 countries. Emirates and Dnata are independent entities. However, these entities are under common management. As a consequence, in the Management Review of the company's document, they are together considered as the Emirates Group.

The vice president and prime minister of the UAE and ruler of Dubai SHEIKH MOHAMMED BIN RASHID AL MAKTOUM says "Today, the Group is a market leader and industry trendsetter. It is an achievement we can all be proud of. We can never underestimate the role that Emirates has played in various dimensions of our development."[32]

Dnata hasn't settled in Algeria yet, and Emirates Airlines has chosen Swissport for cargo and ground handling services.

## 3.3 Turkish Airlines

Turkish Airlines began its journey in 1933 with 5 planes. Today, the company's growth figures place it among the leading airlines in the world, having a total of 335 aircraft, of which 224 are narrow, 88 are wide bodies, and 23 are freighter.

The extensive passenger fleet of Turkish Airlines is used to carry cargo to 304 destinations around the world. Turkish Cargo owns also 15 dedicated cargo aircrafts, which offer dedicated cargo flights to 85 international destinations. Due to this wide cargo network, during the January-April 2018, cargo/mail carried increased by 32% and reached 425 thousand tons. As a consequence, Turkish cargo was ranked in the top 10 in the international air cargo transportation according to WACD (World Air Cargo Data) data.[33]

[32] THE EMIRATES GROUP ANNUAL REPORT | 2018-19 provided on their official website.

[33] https://www.turkishairlines.com/en-int/press-room/about-us/ visited on April 15th 2019 at 7pm

## Section2: Swissport Cargo logistics process

Cargo involves handling different special loads. It is very important to know the handling process at every stage, and the responsibility of each department.

The handling process can be described in the following steps:

1. Presentation
2. Acceptance
3. Preparation for transport
4. Determining the position in the aircraft
5. Loading
6. Transporting
7. Unloading
8. Warehousing
9. Documentation

### 1 Presentation

Different sources can present special load to the airlines. The most important ones are:

- Shippers
- (IATA) Cargo Agent
- (Air) Freight Forwarders
- Other Airlines

The shipper is responsible for the contents/ packaging/ marking of the shipment. Additionally, he must provide the requirement documents regarding special load like:

- Instruction for Dispatch of Goods (IDG)/ shipper's letter of instruction
- Shipper's declaration for dangerous goods
- Shipper's certification for live animals

#### 1.1 Acceptance

A shipment of a special load is presented to Swissport Cargo department under the form of a booking list. Once the shipment is arrived to the cargo, this department will have first to determine if the shipment presented complies with all rules and regulations. This means that the shipment must be checked for damage, leakage, and if the correct packaging and labels are used. After acceptance of a shipment, it has to be prepared for transport, which is the responsibility of the cargo department.

### 1.2 Preparation for transport

The shipment has to be sorted and if necessary placed on pallets or in containers. The cargo department takes care that special load are handled according to the regulation and provisions in the Cargo Handling Manual of the concerned airline.

## 2 Transporting

Transporting is made through the airline companies that work in partnership with Swissport.

### 2.1 Determining the position in the aircraft

Based on information of nature, size, weight, and type of special cargo, the loading team will check the following points:

- ✓ Recheck if the special load is compatible with the specific type of aircraft
- ✓ Determine the position on board of each shipment
- ✓ Information to the loading supervisor is passed

Inform the captain about the nature and position of the special load

### 2.2 Loading

The loading supervisor loads the aircraft as per the loading instruction report (LIR). The LIR contains information on the special and general load. It's the responsibility of each airline load planner to provide the appropriate loading positions for each flight.

### 2.3 Unloading

During the unloading process, the special cargo must always be unloaded with care. If any of the cargo is found to be damaged, the following steps must be taken.

The loading supervisor has to report the incident to the ground operation department.

## 3 Warehousing

For every type of special load, there are general regulations and also specific ones (related to special cargo and specific types of aircraft). Because of this, and the fact that there are many types of special loads, makes it impossible to check and determine positions without

the Cargo Handling Manual. For this reason, the Cargo Handling Manual gives guidance to sort and handle the following special loads[34].

- Non-Dangerous special cargo
    1. Heavy and oversized cargo
    2. Human remains
    3. Live animals
    4. Perishable
    5. Obnoxious cargo
    6. Valuable cargo
    7. Wet cargo
    8. Live human organs and blood
    9. Aircraft on ground parts
    10. Company mails
- Dangerous goods

## 3.1 Non dangerous special cargo

This category is subdivided into ten (10) different classes, which are:

## 3.2 Heavy, big and overhang cargo

The cargo is defined as heavy or big if it requires special handling or attention due to its size, shape or weight. Generally any cargo is denoted as heavy cargo when its single piece exceeds 150 kg. The cargo that exceeds the normal pallet size when loading is considered as big or overhang cargo. Examples of such cargo are: machinery, pipes, cable reels etc.

Pre alert message must be forwarded to destination when such cargo is loaded on aircraft.

## 3.3 Human remains

We distinguish two types of human remains; cremated and non-cremated ones. Some countries have special government regulations concerning the transportation of human remains and their special handlings. Handling and loading human remain must be performed with respect.

[34]Cargo and special load handling course, provided by Emirates cargo manager.

## 3.4 Live animals

Transportation of live animals should be done with special attention. IATA “live animals regulations” governs the acceptance and the carriage of all live animals. These regulations cover container, design requirements, labeling, marking, documentation animal behavior, special care requirements, including segregation, feeding, watering, and temperature requirements.

## 3.5 Perishables

The designation of perishables covers goods that are liable to deteriorate or perish because of climate change, temperature, or length of time in transit. Fresh flowers, fresh fruits/vegetables/meat, live plants, pharmaceutical s, and medicines are all examples of perishable shipments. The below point must be checked before their transportation:

- Total transportation time
- Packing
- Documentation
- Provision for temperature/ ventilation
- Loading position

## 3.6 Obnoxious cargo

It refers to any shipment that is likely to produce a strong or foul smell which might be due to various reasons like sunlight, leaking packages etc. the smell might spread and cause discomfort to the passengers and may also cause sickness. Some examples of obnoxious cargo are certain fruits and vegetables, garlic oils, certain live animals. Many airlines don't permit transportation of obnoxious cargo on their passenger flights. Others set rules referring to the way they should be packed.

## 3.7 Valuable cargo

Any cargo that has a value of 1000$ per gross kilogram or more is considered as valuable cargo. Gold, Platinum, Bank Notes, Diamonds are all examples of valuable cargo. Fragile goods (antiques, art objects, painting, etc) belong also to this category.

### 3.8 Wet cargo

Shipment containing liquids or their nature may produce liquids (e.g. live animals) and which are not subject to IATA dangerous goods regulation are designated as "Wet cargo". Wet cargo presents a risk of liquid spillage or spoilage which leads to corrosion or other damage to other loads in the aircraft during transportation. Several factors may influence this kind of cargo such as the changes in temperature, humidity, pressure, vibration etc. Special requirements for shipments containing wet cargo must be applied.

### 3.9 Living human organs and blood

There are strict(urgent) regulations for the transport of living human organs and blood; sometimes they must be loaded in the passenger cabin, care of purser. These shipments should never be X-rayed.

### 3.10 Aircraft on ground parts

These are technical equipment. They should be positioned in such a way that they can be unloaded first.

### 3.11 Company mails

It is all important mail for internal company communication, such as contract, flight document, etc.

### 3.12 Dangerous goods

Articles or substances that are can cause a risk to health, safety, property or the environment and which are shown in the list of dangerous goods regulations. They are divided into 9 classes reflecting the nature and the degree of risk involved.

## 4 Documentation

Documentations are used all long the process, include but are not limited to:

- Airline load plan: prepared primarily by an airline company and includes the list of shipments booked on a flight, information about the shipments, and unit load device allocation to maximize the space utilized in the aircraft and ensure its balance.
- NOTOC: it's prepared by the cargo handling staff using the information from the shipper's declaration, in order to notify the aircraft captain about all dangerous goods positions and certain special cargo loaded on the aircraft.

- ULD sheet: It's the document that serves to check and verify the conformity of the unit load devices of the flight.
- Air way bill: This is the identity of each shipment.

They are all kind of document used to convey information about cargo that is being transported.

## Section 3: The role of the triptych cost-quality-time in Swissport's logistics process (Company-Partners)

We are going to present in this section our qualitative research. First of all, we'll explain our methodology, then the process of data collecting, and finally the method used in analyzing results.

### 1 Qualitative research

Qualitative studies are based on non-quantifiable questions, individually done, and can be under the form of a non-directive or semi-directive interview, group meetings (focus group), etc. They are essentially characterized by an explanatory and interpretative purpose.[35]

Qualitative research is "the development of concepts which help us to understand social phenomena in natural (rather than experimental) settings, giving due emphasis to the meaning, experience, and views of the participants."[36]

The advantages of doing qualitative research include[37]:

• Flexibility to follow unexpected ideas during research and explore processes effectively

• Sensitivity to contextual factors;

• Ability to study symbolic dimensions and social meaning

• increased opportunities

[35]Translated from LAURENT, (F) : les études de marché, comprendre le client, éditions d'organisation, France, 2001.p.51.

[36] Tilahun Nigatu Haregu course, African Medical and Research foundation, March 2009. https://fr.slideshare.net/tilahunigatu/qualitative-data-analysis-11895136 visited on 20th April 2019 at 2pm

[37] Qualitative research article Sonia Ospina Robert F. Wagner Graduate School of Public Service, New York University

a. To develop empirically supported new ideas and theories;
b. For in-depth and longitudinal explorations of leadership phenomena; and
c. For more relevance and interest for practitioners.

Further more, qualitative research helps us to:

- Detect needs
- Make a choice or a decision
- Improve operations and performances
  - Identify phenomenon
  - Test scientific hypothesis

## 1.1 Data collecting method

We chose the interview method which involves asking questions, listening and recording answers from individual on a semi structured format, in an in-depth manner. Semi directive (structured) interviews allow new ideas to be brought from logistics managers.

To elaborate an interview, it is important to have the interview guide prepared, which is a document that includes topics and questions to be asked in different ways.

We interviewed the cargo manager of Swissport, and then the three main airlines(that are in partnership with Swissport), to compare and evaluate the impact of Swissport's logistics process on the triptych cost-quality-time (CQT).

Our interview guide with Swissport Cargo Deputy Manager was based on four axes which are:

1st axe: Description of logistic process and its performance measures.

2nd axe: The impact of logistics process on the quality of services.

3rd axe: The impact of logistics process on costs.

4th axe: The impact of logistics process on time.

Our interview guide with the airlines cargo managers was based on six axes which are:

1st axe: logistics outsourcing strategy and objectives.

2nd axe: Logistics costs of the company.

3rd axe: quality of logistics service.

4thaxe: Logistics services deadlines.

5th axe: Partners' relationships and issues with Swissport.

6th axe: Partners' future plans and projects.

There are two types of qualitative data analysis:

- Thematic analysis: Transcription of information from Semi-structured interviews has. Key quotes have been highlighted, coded and sorted into themes.
- Content analysis: It is the process for categorization of verbal or behavioral data for the purpose of classification, summarization, and tabulation.

For our study case, we chose to carry out a thematic analysis, as a mean to generate insight and knowledge from data collected. The method enables us to develop a deeper appreciation for the group or situation we are researching.

## 2 Analysis and comparison of the obtained responses

The interview guides were presented to the interviewees while asking them the questions face to face. The shortest interview has taken 45mns and the longest was of 2 hours. The interviews has been recorded and saved. Our objective is to do comparative analyses of the impacts of logistics process on the triptych cost-quality-time from the company's view in one hand, and from its partners view in the other hand.

**Table N° 6: Interviewees presentation**

| Position | Date | Hour | Place | Time |
|---|---|---|---|---|
| Swissport Cargo Deputy Manager | March 28th 2019 | 2hrs | Swissport, Algiers Airport | At 10am |
| Emirates Cargo Manager | April 1st 2019 | 1hr | Swissport, Algiers Airport | At 2pm |
| Turkish Cargo Manager | April 2nd 2019 | 45mns | Swissport, Algiers Airport | At 2pm |
| Qatar Cargo Manager | April 2nd 2019 | 1hr45 | Swissport, Algiers Airport | At 10am |

Source: Personal efforts.

The interviews presented on the table above make it possible for us to compare the actual situations observed at Swissport Company. The comparison between the various managers selected allows us to highlight and describe the impact of logistics process on the triptych CQT.

## 2.1 Swissport survey

**Figure N° 7: Description of logistics process and its performance measures**

This table involves the first two questions

| **Swissport Cargo Deputy Manager** |
|---|
| Swissport logistics process is a part of global standard process. We are achieving high standard services, as all SOP (standard operating procedures) are established & developed by our headquarters in Zurich to be in the same level in worldwide stations. |
| We are using Customer Service Portal which provides us real time monitoring, tools are been developed to check at any time the performance of each available operation. |

Source: Personal efforts.

This theme aims to describe Swissport's logistics process in order to understand how we can measure its performance.

**Table N° 7:The impact of logistics process on the quality of services**

This table involves the 3rd and the 4th question

| **Swissport Cargo Deputy Manager** |
|---|
| Operation can impact directly our quality are:<br>-Delay of Aircrafts<br>-Delay in inserting DATA of any shipment,<br>-Delay in delivery<br>Avoiding these delays increases our sales, and allows us to react to the new demands. |
| -Customer satisfaction. (Feedback)<br>-Monthly meeting with airlines key managers |

Source: Personal efforts.

The table above lights out key logistic elements that impact directly the quality of Swissport's service, and how to evaluate these elements.

Respect of deadlines impact the performance of Swissport logistics process.

**Table N° 8: The impact of logistics process on costs**

This table involves the 5th and the 6th question

| **Swissport Cargo Deputy Manager** |
|---|
| Our costs are mainly generated from<br>-Damaged cargo in the warehouse due to miss handling<br>-loss of shipment<br>The transport from aircraft to the warehouse is done by swissport (ramp services), and the transfer of goods from warehouse to final customer is done by the brokers (freight forwarders), who is the responsible of this charge. This reduces our costs. |
| By improving quality services and providing the required resources & training |

Source: Personal efforts.

This theme allows us to know the different logistic costs encountered by Swissport and how to reduce them.

Sharing distribution costs on a logistic process gives Swissport the advantage of minimizing its costs

**Table N° 9: The impact of logistics process on time**

This table involves the 7th, 8th, 9th, 10th, and 11th questions

| **Swissport Cargo Deputy Manager** |
|---|
| -Operations acceptance and securing shipment in export<br>-Heavy custom's process impact strongly the delivery time during import operations. |
| The different deadlines are set by a service level agreement (SLA) with the airlines:<br>-RCF: Receiving from Flight: is the time of handling shipment from landing of the Aircraft until it will be received in the warehouse.<br>-ARR: The time of handing shipment in the warehouse, and inserting documents (AWB) in the system.<br>-NFD: Notification for delivery: The time of receiving shipment in warehouse and notify the client/ customer for receiving shipment (most of the time is the same day as the good arrives at our end station).<br>DLV: Shipment delivered to final consignee from warehouse (shipment ready for carriage). |
| The average till now is 99%. |
| Aviation industry is moving too fast which implies a need of a real time monitoring on each step of the process to identify the dispersions or the delays. |
| Not known, but we know we are the fastest in term of time, the highest in term of quality and a good problem solving in Algeria. |

Source: Personal efforts.

This theme allows us to know the different deadlines set by the company, and how Swissport manage to respect them. Respecting deadlines give the company the advantage to perform fast.

As a result our interview with the cargo deputy manager confirms our firs hypothesis which is"The triptych cost-quality-time define logistics performance of the company"

## 2.2 Airlines survey

**Table N° 10: 1st axe: logistics outsourcing strategy and its objectives**

This table involves the first six questions of our interview guide (Appendix N°2)

| Emirate cargo manager | Turkish cargo manager | Qatar cargo manager |
|---|---|---|
| The reasons are mainly related to costs. That requests more investment, and we are only 20 staffs that represent Emirate in Algeria, including three staffs for cargo operations.<br>-It depends on the capacity of the airline, the flight frequencies, and good tonnage capacity to be booked. | High level of logistic services quality required by our headquarters.<br>We can't meet the standard without calling a logistic service provider.<br>-A lot of cargo shipments and customer's demand implies a call for a logistic service provider | -To excel our main activity and keep our standards.<br>-The need to ensure high level services to our customers.<br>-The need to ensure that our market share is higher than the competitors.<br>- It's regarding costs. In some countries we provide our own logistics services, and in other countries we have from two to three logistics providers. |
| The objectives are:<br>-meeting our standards.<br>-facilitate communication with all airport services. | Meeting the standards and have services that we can't offer. | -Increase and maintain our market share.<br>-Ensure customer's satisfactions.<br>-Externalize clearance and some |

| | | |
|---|---|---|
| | | documents procedures. |
| The criteria are: Costs, contract, services fees, and service quality (meeting the service level agreement), customer's satisfaction, and response time for our requests…etc. | Headquarter checks warehouse services, equipments, performance of staffs/agents and decide whether to partner or not with the company. | Security, good service, full trained stuffs<br>Monthly checkouts of the Qatar requirements. |
| Two to three years contract. | Three to five years contracts | Long term contract, generally based on their performances |
| Of course, In term of time response, and service quality level. | Yes, of course. It's mandatory. | Yes. |

Source: Personal efforts.

Logistics outsourcing strategy and its objectives is an essential theme for our analysis; it aims to understand what are the reasons for logistical outsourcing and the selection criteria of logistics services providers.

**Table N° 11: 2nd axe: Contribution of outsourcing logistic services on costs**

This table involves the 7th question of our interview guide (Appendix N°2)

| Emirate cargo manager | Turkish cargo manager | Qatar cargo manager |
|---|---|---|
| Having a logistic services provider reduces costs. We provide our own logistic services in some countries, but it costs us less when we outsource these services in Algeria. | We are paying logistics services but it costs us less then providing them ourselves. It costs us less than the last 10 years but we are still looking with Swissport to reduce more our costs. | As an airline we provide only transportation, any investment on other services would costs us a lot Swissport charges are muchhigher than our previous ground handling provider. |

Source: Personal efforts.

This theme aims to know the impact of outsourcing logistics services (provided by Swissport) on partners' costs.

**Table N° 12: 3th axe: Logistics services quality**

This table involves the 8th and 9th questions of our interview guide (Appendix N°2)

| Emirate cargo manager | Turkish cargo manager | Qatar cargo manager |
|---|---|---|
| Before swissport we had issues with our previous partner regarding the quality of services, a very poor communication, it took us days to agree on forwarding a shipment whereas it takes around 30 mns to do that with Swissport. | Before Swissport, we worked in very bad conditions with our previous logistic service provider, we had very bad services, cargo loss in warehouses, customers claims…etc. | It was very bad, lack of safety and security equipments. Staffs were not well trained. |
| Quality of swissport logistic services is higher than our previous partner; as a consequence, the quality of our services has been improved. Swissport meets our customers' requests. | The first three years of Swissport were terrible in term of services and equipments. Actually, it's perfect, we are satisfied. | At the beginning there was an issue with Swissport regarding warehousing services. But today they provide an excellent service. |

Source: Personal efforts.

Our third theme aims to know the quality of logistic services provided by Swissport to its partners.

**Table N° 13:4th axe: logistics services deadlines**

This table involves the 10th and 11th questions of our interview guide (Appendix N°2 )

| Emirate cargo manager | Turkish cargo manager | Qatar cargo manager |
|---|---|---|
| Before Swissport we had an issue with import notifications deadlines. | Communication with our previous logistic services provider took us too long; we hardly managed to meet deadlines. | We had an issue managing time and deadlines. |
| Now notifications are not 100% on time, but we are approaching this performance. Due to customs procedures, sometimes we face some issues regarding receiving imported cargo information from Swissport on time. The deadlines are actual time of cargo arrival plus three hours. | Import notifications started to be on time but delivery time depends always on customs. | We did a test regarding delivery time; same cargo from the same shipper and at the same time of departure, was delivered from Air Algerie before Swissport. |

Source: Personal efforts.

Logistics services deadlines are the fourth theme that serves to know if Swissport logistics process allows the company to reduce its delivery times and be more flexible.

The three airlines are satisfied of Swissport's deadlines, and this confirms our second hypothesis which says: "Logistics deadlines impact partners' satisfactions".

**Table N° 14:5th axe: Partners' relationships and issues with Swissport**

This table involves the 12th and 13th questions of our interview guide (Appendix N°2)

| Emirate cargo manager | Turkish cargo manager | Qatar cargo manager |
|---|---|---|
| We have a good relationship comparing to our previous ground handling provider. | Our relationship is great, we are 85% satisfied. | Very good, excellent, and very professional. |
| Sometimes we have system synchronization issue between our system SkyChain, and Swissportsystem Cargospot. | Swissport needs to improve the equipments of its ramp services. | Handling and storage fees need to be reduced. |

Source: Personal efforts.

We want through this theme to know the strength of each partnership beside the obstacles and problems encountered by the Airlines with their partnerSwissport.

Table N° 15: 6th axe: Partners' plans

This table involves the 14th and 15th questions of our interview guide (Appendix N°2)

| Emirate cargo manager | Turkish cargo manager | Qatar cargo manager |
|---|---|---|
| We are always trying to get 100% compliance with our standards. | We are expecting to use e-air way bill with Swissport in the next few months as they promised. | Our objective is to double and increase the volume of import and export cargo. We are expecting from Swissport to expend and build new warehouses. |
| At the moment, we don't have a plan of internalizing ground handling services. It depends on our growth. | With the actual information no, we are not capable to provide our own cargo ground handling, but Turkish airlines start thinking | No, we have a good partner. It can be other handling provider but not us. |

| | | |
|---|---|---|
| | about having a Turkish cargo ground handling provider there. | |

Source: Personal efforts.

We have chosen this strategic theme to know whether the airlines are willing to internalize their logistic services or they are satisfied with Swissport.

## 3 Analysis report

Through the analysis of the obtained responses, and according to Swissport deputy manager, the company's logistic process complies with the standard operation procedures developed by their headquarters in Zurich, which allows Swissport to achieve high level services. The performance of the process is controlled through the company's system "Customer Portal" thanks to real time monitoring.

The delays of aircrafts, inserting shipments data, or delivery time impact directly the services of the company. Customers and airlines' feedbacks are the key measures to evaluate the performance of Swissport logistic process. The manager adds that what cost the company most are cargo damages in warehouses and shipments loss. To avoid these costs, Swissport provides the required resources and training to its staffs.

The process of shipment acceptance for export, and customs procedures during import operations impact directly delivery time. The company sets different deadline according to the service level agreement made with the airlines, which are 99% respected. Thanks to real time monitoring, the company avoids any delay. The deputy manager declares that Swissport is the fastest and the highest in term of cargo service quality in Algeria. Our findings confirms our first hypothesis, which is "The triptych cost-quality-time define logistics performance of the company".

We can notice the reason behind calling for a logistic services provider differs from a partner to another. Emirate Airlines outsources its ground handling services to minimize costs, whereas Turkish Airlines confirms that they can't meet the required standards for the quality of services without a ground handling agent, as for Qatar Airlines considers their main activity is air transport, and all the peripheral services should be outsourced in order to maintain their performance and ensure both of high level services, and an increase in their market shares. In addition, Emirate has its own evaluation that ranks the quality of services of

the logistics provider in order to insure their standards, as a consequence their satisfaction. The three airlines don't tolerate delays; this confirms our second hypothesis which says: "Logistics deadlines impact partners' satisfactions".

When the managers are asked directly for the reason behind not providing their own ground handling services, Emirate and Turkish airlines cargo managers confirm that the increase in flights frequencies, tonnage capacities, and customers' demands imply a call for a logistic service provider. Qatar cargo manager points out the fact that it is related to costs, as in some countries its better for them to provide their own logistics services but it's not the case for the other countries.

The three Airlines share the main objective concerning their strategy of outsourcing logistic services, which is meeting their service quality standards to ensure customers' satisfaction. Emirate cargo manager add the opportunity to communicate easily with all airport departments, as for Qatar airlines looks after externalizing clearance and documents procedures.

The selection criteria of a logistic service provider vary according to the interviewee. Emirate cargo manager points out costs criteria, for Turkish airlines, it depends on the provider's performance, and for Qatar, it's important for them to deal with a well trained stuff and to meet Qatar requirements.

All of the managers agree on the fact that outsourcing logistic activities is a need to maintain a competitive advantage.

Concerning the contribution of outsourcing logistic services on partners' costs, all of the managers confirm that it costs them less to outsource logistic services, but both of Turkish and Qatar airways claim about Swissport high charges comparing to their previous ground handling provider, and they ask to be charged less.

According to the three airlines cargo managers, they had many issues with their previous service provider "Air Algérie" regarding the quality of their services. Turkish airlines worked in bad conditions resulting cargo loss and customers' dissatisfaction, whereas Qatar airlines had to deal with non trained staff.

After Swissport's partnership with the three airlines, they managed to deal with some issues regarding the quality of services due to Swissport's small warehouses. But after three years of their partnership, the airlines tend to be satisfied of Swissport's services and they qualify their services as improved.

Deadlines were not being respected by the airlines' previous logistics service provider. Both of Emirate and Turkish airlines have noticed an improvement on the deadlines of import/export notifications, but they still claim about customs procedures that impact directly delivery time. In the other hand, Qatar cargo manager tells us about their test experience on the delivery time of Swissport and Air Algérie; under the same conditions, Air Algerie's shipment was delivered before Swissport's one. Qatar Airline confirms that customs procedures are the main reason.

Turkish airline aims to get 100% compliance with their standards, and have no intention to internalize its logistic services

Emirates airline describes its relationship with Swissport as good comparing to their previous logistics services provider, Turkish airlines says that they have a great relationship and they are satisfied, and Qatar airlines finds it excellent. The issue stated by Emirate is related to system synchronization between Emirate Skychain and Swissport Cargo Spot. Turkish airline thinks that Swissport's ramp equipments need to be improved, whereas Qatar airline confirms that the main current issue is Swissport's storage fee that needs to be reduced.

Emirate airline aims to get 100% compliance with their standards; the company has no intention to internalize its current logistic services. For Turkish airline, it expects the use of e-airway bill with Swissport, and the manager confirms that they can't provide their own cargo handling service but they are thinking about dealing with a Turkish ground handling provider in the future. As for Qatar airline, it is looking forward to double the volume of the airline's import/export, and they are expecting Swissport to handle this increase. Qatar cargo manager adds that they have a good partner, and it can be another provider but not Qatar itself.

As a result, both of Swissport and partners' surveys confirm our first and second hypotheses.

**Conclusion**

Although Swissport offers great quality of services comparing to its unique competitor Air Algérie, the company still needs to align its warehousing fees and manage to charge less its partners. Airlines sound to be satisfied from Swissport services.

Deadlines are respected. The only obstacles are customs procedures; 2/3 of the interviewees confirm the heavy procedures of customs, and we can conclude from Qatar's test that human factor plays a huge role in such situations. The difference between customs deadlines of Swissport and Air algéire can be associated to the fact that the latter is the Algerian national agent of cargo ground handling.

Being a leader of cargo ground handling in Algeria where only two agents provide these services, is a great opportunity for Swissport. The company should maintain its position in the market by meeting its partner's requirements, and ensuring its customers' satisfactions.

# Chapter 3: Empirical study

# Chapter 3: Empirical study

## Introduction

In this chapter, we are going to present the methodology of our study, and test our second hypothesis which is "the perception of the triptych cost-quality-time impacts the satisfactions of the customers". For this reason, we set up a quantitative research to measure the impact of the perception of the triptych on the customer's satisfaction. This is done through a questionnaire that is tested before being distributed.

Following up, data analysis is presented, and an analysis report is established which allows us to recommend some solution for Swissport logistics services provider.

# Section 01: The methodology of the research

## 1 Quantitative research

The objective of this study is to analyze the impact of logistic process on the customer's satisfaction through the triptych cost-quality-time

### 1.1 Key Terms

Unit of Analysis (cases): The most elementary part of what is being studied or observed. For example: individuals, households, court cases, countries, states, firms, industries, etc.

According to Aliaga and Gunderson (2002), quantitative research is: "Explaining phenomena by collecting numerical data that are analyzed using mathematically based methods (in particular statistics)" [38]

The first key element is explaining phenomena. Our purpose from doing a research is explaining something. Phenomena are what were observed, which can be either subjective (e.g. attitudes, feelings) or objective (e.g. time, weight) measurements.[39]

Analysis means both qualitative and quantitative methods of processing and summarizing information.

Sampling is an important factor in research. It determines the accuracy of the research/survey result. There are lot of techniques that define samples depending upon the need and situation. These techniques are grouped into two categories:

- Probability Sampling: every element of the population gets an equal chance to be part of the selected sample. The selection is made randomly.
- Non- Probability Sampling: this technique relies on the ability of a researcher to select the elements of the sample. It doesn't rely on randomization

Sample is the subset of the population. Sampling is the process of selecting a sample. Sample size is the number of elements in the sample.

[38] Book;Doing Qualitative Researh in Education with SPSS, Daniel Muijs,Sage, Publications London, 2004, page 1.

[39] Quantitative Research Methods, A Guide ForResearch Post Graduate Students, The University Of Hong Kong,John Bacon-Shone, 03 February 2015, page 13.

Variables: Concepts, characteristics, or properties that can vary, or change, from one unit of analysis to another. Some examples of variables include gender, social class, education, age, level of public enforcement, type of bankruptcy, etc. There are two types of variables:

Dependent Variables (DV): Variables whose change the researcher wishes to explain.

Independent Variables (IV): Variables that help explain the change in the dependent variable.

Hypothesis: An empirical statement which seeks to test the relationship between at least two variables.

## 1.2 Types of quantitative research

There are two types of a quantitative research design; experimental designs, and non-experimental designs. Experimental designs (also known as the scientific method) are popular in scientific research where as non-experimental research is very common in the social sciences. The basis of the experimental method is the experiment, which is defined as: "a test under controlled conditions that is made to demonstrate a known truth or examine the validity of a hypothesis"[40]. Control is the essential element of this definition, and that is where experimental research differs from non-experimental quantitative research.

## 1.3 Levels of measuring variables

Nominal: A nominal variable can't be ranked in a meaningful way in terms of degree or magnitude, such as names, race…etc.

Ordinal: An ordinal variable can be ordered in terms of degree or magnitude such as degrees obtained (BA, MSc, PHD) or grades…etc.

Interval/Ratio: An interval variable has quantitative values (or numbers) like age (in years). If a variable has qualitative categories that are ordered and there are numerical values assigned to each category which are also ordered, we can treat this variable like an interval level variable. An example would be questionnaire that asks respondents about their feelings towards Algerian manifestations in the last month on a scale of 1 to 5 where (1=very bad job, 2=bad job, 3=neither bad nor good, 4=good job, and 5=very good job).

[40]Book;Doing Qualitative Researh in Education with SPSS, Daniel Muijs,Sage, Publications London, 2004, page 13

## 1.4 Descriptive Statistics

Descriptive statistics serve to describe variables. They are performed by analyzing one variable at a time. All researchers start by performing these descriptive statistics before beginning any type of data analysis.

## 1.5 Measures of Descriptive Statistics

Descriptive statistics are either measured by central tendency or by variability. These two measures use graphs, tables, and general discussions to understand the meaning of the analyzed data. Measures of central tendency describe the center position of a distribution for a data set, whereas measures of variability, or the measures of spread, help in analyzing how spread-out the distribution is for a set of data.[41]

## 1.6 Frequency Tables

Frequency tables are a detailed description of the categories/values related to each variable. A frequency table most often includes all of the following:

Absolute frequency: This tells you how many times a particular category in a variable occurs. This is a frequency of occurrence of each individual category/value in the table.

Relative frequency (or percent): This is the percentage of each category/value relative to the total number of cases.

Cumulative frequency: This is simply an accumulation of the relative frequency for each category/value

## 1.7 Analyzing datasets

When the experiment has been done and the post-test administered, it is time to analyze results. The results will then tell us whether we can provisionally accept our hypothesis or not.

[41]Investopedia aritcle https://www.investopedia.com/terms/d/descriptive_statistics.asp visited on 05/1st/ 2019 at 3pm.

## 2 Questionnaire

There are many types of survey questions, and each has advantages and disadvantages. The choice of a specific survey type depends on the type of information needed, and the depth of information needed. This guide introduces some of the most common types of survey questions.[42]

### 2.1 Closed-ended questions

The most commonly used ones are: rating scale, forced choice, dichotomous and demographic. The scales of a question should be the same for all questions; so as the ratings can be compared with each other (e.g. a score of 3 out of 5 is not the same value as 3 out of 12).

### 2.2 Rating scale questions

There are two frequently used types of rating scale questions, which are Likert-type scales and semantic differential scales.

For rating scale, it is better to use a balanced scale that gives the respondent an equal choice of negative and positive rates, it allows them to select the neutral choice when they don't have strong feelings for the question.

Likert-type scales

Respondents are given a choice to agree or disagree with a statement, each degree of agreement or disagreement is given a score that is used to analyze results.

Semantic differential

In a semantic differential scale, each end of the scale marked is with different or opposing statements. For example, on a scale from 1 to 7 where 1 is short and 7 is long, how would you describe the amount of time you had to wait for service?"

### 2.3 Multiple choice questions

This type of questions asks the respondents to choose between many answer options. It can be a "yes/no" answer or can give a choice of multiple answers.

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[42] From Innovation, Science and Economic Development Canada 11-06-2018 https://canadabusiness.ca/business-planning/market-research-and-statistics/conducting-market-research/types-of-survey-questions/ visited on April 30th 2019 at 1pm.

Rank order questions: This type of questions asks the respondent to choose among a set of alternatives.

### 2.4 Dichotomous questions

Respondents must choose between two alternatives (whether yes or no).

### 2.5 Open-ended questions

Respondents have the freedom to tell what they want. No pre-defined answers are set.

## 3 Sampling

**S**ampling is taking some elements from the target population.

### 3.1 The target population:

In this study, target population is the Swissport's customers.

- Element: consumers aged between 21 and 30.
- Sampling Unit: Freight forwarders, clients, particulars.
- Time frame: April 2019.

### 3.2 Sample size:

Simple size used in a study is determined based on the expense of data collection, and the need to have sufficient statistical power. The sample size is an important feature of any empirical study in which the goal is to make inferences about a population from a sample.

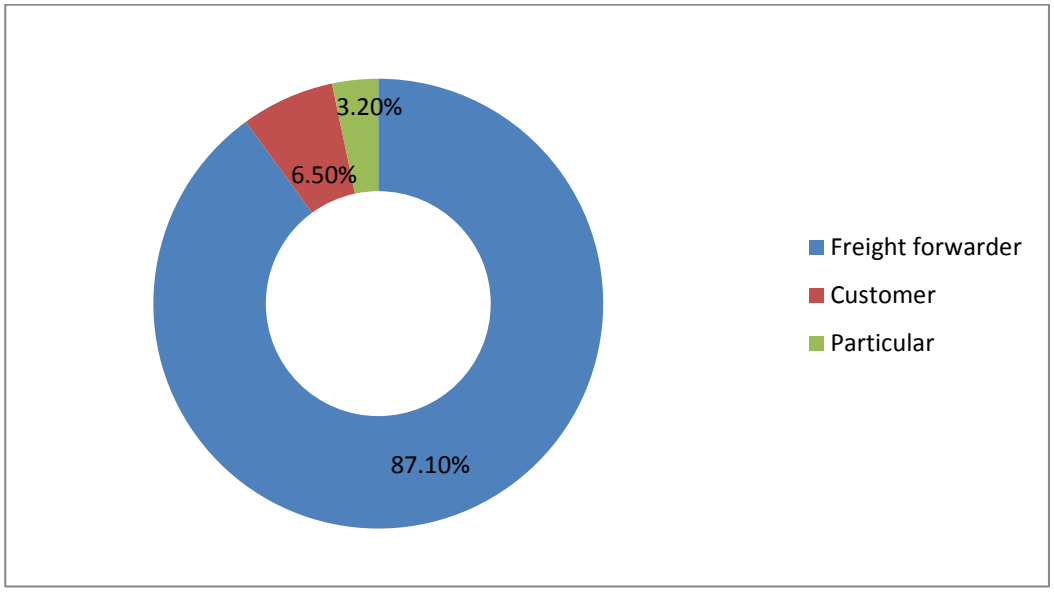
In this research, the sampling size is 30, as we are dealing with businesses.

## Section 02:Data analysis

### 1 Characteristics of the respondents:

First of all, we're going to analyze the questions used to identify the target population.

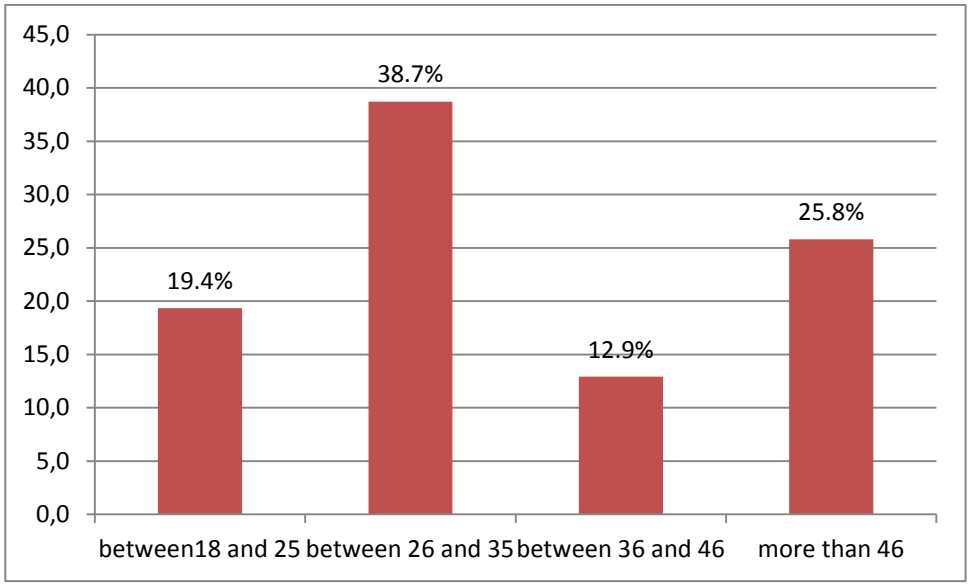
**Figure N° 8:** Profile of respondents




**Source:** Personal efforts.

The sampling contains 30 respondents, 87.1% of them are freight forwarders, 6.5% are customers that import /export their own goods, and 3.20% represents particulars who deal with Swissport to ship their personal effects.

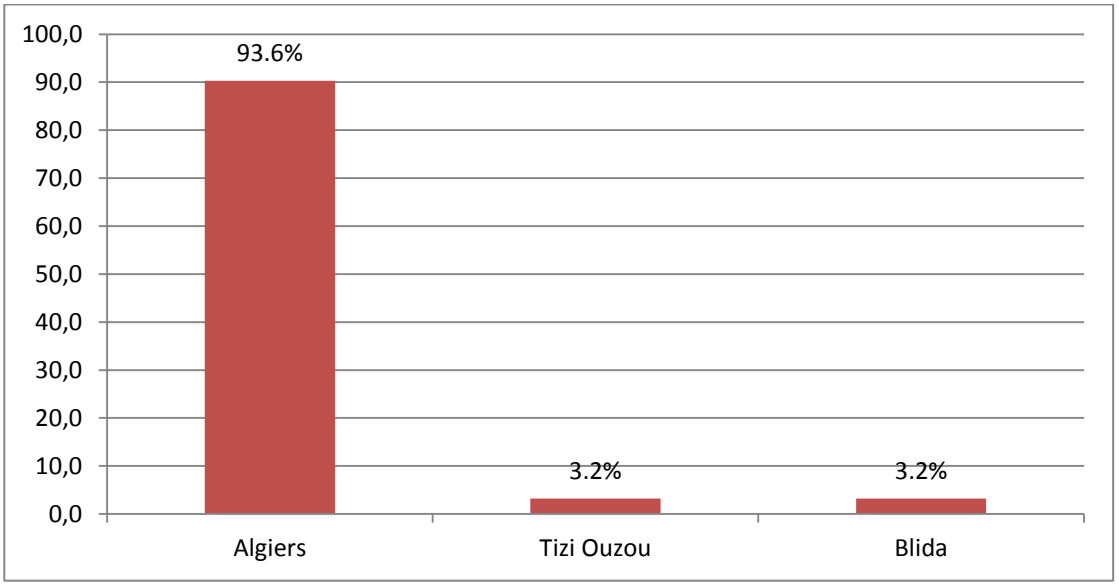
**Figure N° 9**: Age of respondents




**Source:** Personal efforts.

38.7% of the respondents are between 26 and 35 years old, 25.8% are more than 46 years old, 19.4% are between 18 and 25 years old and nearly 13% are between 36 and and 46 years old.

**Figure N° 10:** Province of residence

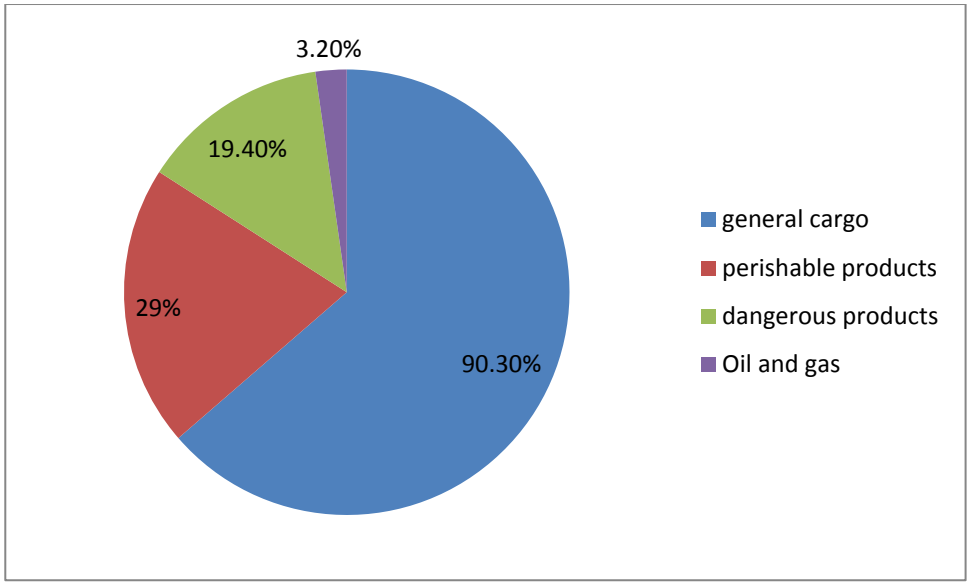



**Source:** Personal efforts.

Most of Swissport's customers are from Algiers. We can notice 93.6% of the respondents are from Algiers, 3.2% are from Tizi Ouzou, and 3.2% are from Blida.

## 2 Descriptive analysis

**Figure N° 11:** Type of shipments

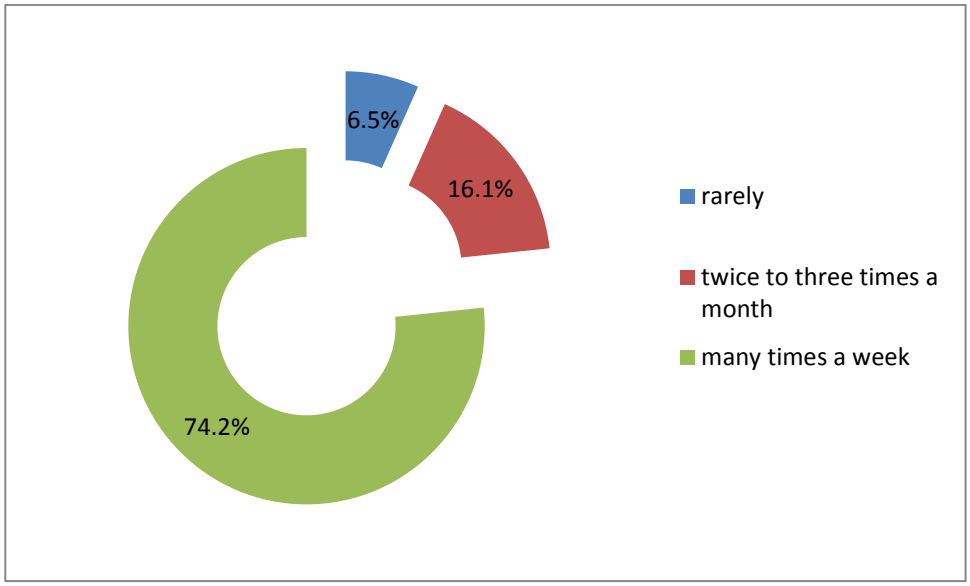



**Source:** Personal efforts.

Most of the respondents ship general cargo with a percentage of 90.3%.

29% represents the respondents that ship perishable products, and 19.40% for dangerous products, whereas only 3.20% of the respondents confirm that they deal with Swissport to ship Gas and oil.

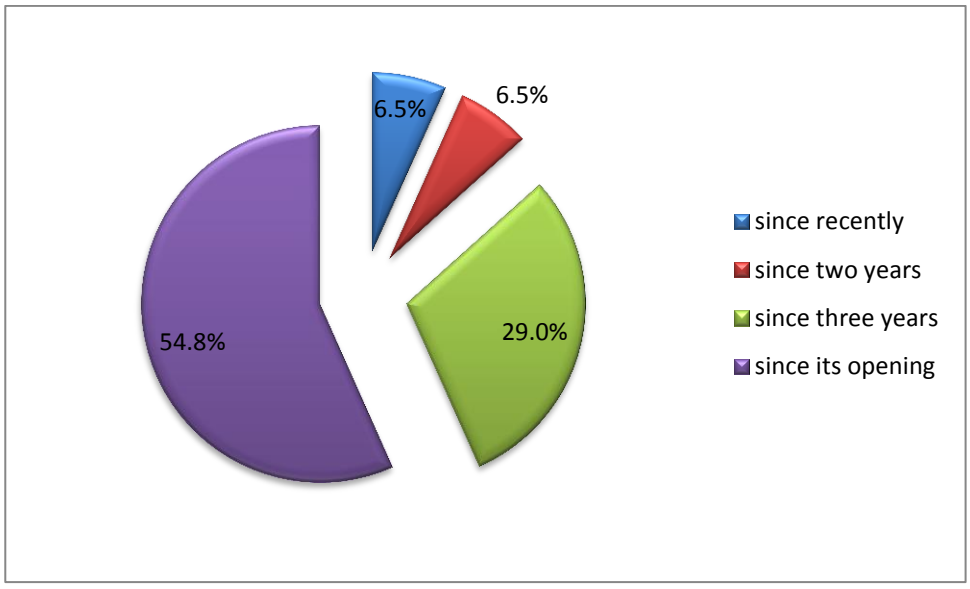
**Figure N° 12:** Frequency of visiting Swissport




**Source:** Personal efforts.

More than half of the respondents visits Swissport many times a week (74.2%). 16.1% of the respondents visits Swissport twice to three times a month, whereas 6.5% of the respondents rarely calls Swissport's services.

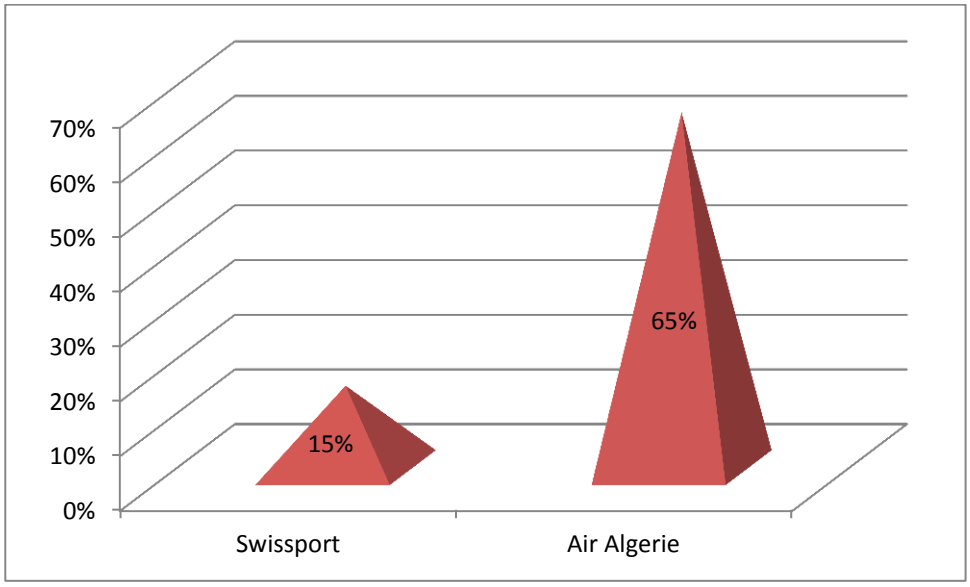
**Figure N° 13**: Customers' lifetime




**Source:** Personal efforts.

Half of the respondents (54.8%) have been dealing with the company since its opening. 29% are Swissport's clients since three years, 6.5% of the respondents have been recently dealing with the company, and the rest 6.5% of the respondents have been Swissport's clients since two years.

**Figure N° 14**: Top of mind




**Source:** Personal efforts.

More than half of the respondents mentioned Swissport before any other logistics service provider. 15%of the respondents mentioned Swissport before any other logistic provider, whereas the rest of the respondents didn't answer.

**Factor analysis for question 14:**

Seven (07) respondents among the thirty (30) had a bad experience with Swissport, four (04) of them for shipments loss, two (02) for billing department, and one (01) for photocopying problem.

## 1.2. Test hypothesis 03:

In order to test the third hypothesis, which is "T"; a regression analysis was used to verify it.

A factor analysis is being used on questions 4, 5, and question 6 that represent the following deadlines: documents delivery deadline, time of waiting for services, and goods delivery deadlines.

The variable "Deadlines" is the arithmetic mean of documents delivery deadline, time of waiting for services, and goods delivery deadlines.

A factor analysis is being used on questions 7, 8, and question 9 that represent the following warehousing services: storage infrastructures, safety of stored goods, and ground handling tools.

The variable "Warehousing" is the arithmetic mean of infrastructures, safety of stored goods, and ground handling tools.

A factor analysis is being used on questions 10, 11, and question 12 that represent the following peripheral services: communication of Swissport regarding shipments operations, dealing with claims, and bills clarity and accuracy.

The variable "Warehousing" is the arithmetic mean of communication of Swissport regarding shipments operations, dealing with claims, and bills clarity and accuracy.

Arithmetic mean (or, simply, "mean") is the average. It is a result of adding all the values in the data set divided by the number of observations in it.

$$\bar{X} = (\sum x)/n$$

Where

$\bar{X}$: The variable (average of items).

X: The items.

n: The number of items.

A factor analysis is being used on question 13 that represents the costs of Swissport services.

## 3 Regression analysis:

In order to test the second hypothesis "The perception of cost, quality, and time impact the satisfactions of customers", a regression analysis is conducted, where the independent variables are "perception of: quality of warehousing and its peripheral services, deadlines, and Cost/quality ratio" and the dependent variable is "customers' satisfactions".

**Table N° 16: Model summary**

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,548[a] | ,301 | ,184 | 1,61715 |

a. Dependent Variable:satisfaction.

b. Predictors: (Constant), Services_cost , Deadlines, Peripheral_services, Warehousing.

**Source:** SPSS version 22

The R-square column represents the proportion of the variance in the dependent variable (customers' satisfactions) which can be explained by the independent variables (each perception of: quality of warehousing and its peripheral services, deadlines, Cost/quality ratio), in other words; how well the model fits the data. In this case, the value is 30.1% which means that the model (which includes each perception of: quality of warehousing and its peripheral services, deadlines, and Cost/quality ratio) explains 30.1% of the variance in the dependent variable (customers' satisfactions).

The value of the R-square is 30.1%, it cannot explain the model.

**Table N° 17: ANOVA**

**Table : ANOVA[a]**

| *Model* | | Sum of Squares | ddl | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 26,994 | 4 | 6,749 | 2,581 | ,053[b] |
| | Residual | 62,764 | 24 | 2,615 | | |
| | Total | 89,759 | 28 | | | |

a. Dependent Variable: Satisfaction.

b. Predictors: (Constant), Services_cost, Deadline, Peripheral_services, Warehousing.

**Source:** SPSS version 22

This table indicates that the regression model predicts significantly the dependent variable. The significance of the regression model here is 0.053 which is approximately 0.05 and this indicates that; overall, the regression model significantly predicts the outcome variable.

The F value is not significant, in this case F= 2, 58

**Table N° 18: Coefficients of deadlines, warehousing, peripheral services, and costs.**

**Table : Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constante) | 3,524 | 1,937 | | 1,819 | ,081 |
| | Deadlines | ,049 | ,535 | ,016 | ,092 | ,927 |
| | Warehousing | ,190 | ,555 | ,062 | ,342 | ,735 |
| | Peripheral services | ,848 | ,347 | ,432 | 2,442 | ,022 |
| | Costs | ,542 | ,249 | ,393 | 2,178 | ,039 |

a. Dependent Variable: satisfaction.

b. Predictors: (Constant), Services_cost, Deadline, Peripheral_services, Warehousing.

**Source:** SPSS version 22

This table tells us which of the variables included in the model contributes to the prediction of the dependent variable.

The variable "Peripheral services "makes the strongest contribution in explaining the dependent variable (Beta=.432). The significance of this variable is 0.022, which is less than 0.05 and therefore it is significantly contributing to the prediction of the dependent variable.

The variable "Cost of services" contributes in explaining the dependent variable (Beta=.393). The significance of this variable is 0.039, which is less than 0.05 and therefore it is significantly contributing to the prediction of the dependent variable.

The model that includes customers' satisfactions as the dependent variable, deadlines, and warehousing as predictors is not significant, the sign of beta by order is (0.16) and (0.062) which means the linear relation is not validated.

We proceed to the suppression of the variable that contributes the least to the model, in this case "warehousing ".

**Table N° 19: Coefficients of deadlines, peripheral services, and costs.**

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constante) | 5,811 | 1,180 | | 4,925 | ,000 |
| | Deadlines | ,379 | ,749 | ,123 | ,506 | ,617 |
| | Peripheral_services | -,022 | ,499 | -,011 | -,044 | ,965 |
| | Cost_quality_ratio | ,497 | ,256 | ,359 | 1,938 | ,064 |

a. Dependent Variable: satisfaction.

**Source:** SPSS version 22

The variable "cost of services" makes the strongest contribution in explaining the dependent variable (Beta=.359) with a significance of 0.06.

The model that includes customers' satisfactions as the dependent variable, deadlines, and peripheral services as predictors is not significant, the sign of beta by order is (0.12) and (-0.011) with a significance of 0.617, and 0.965, which means the linear relation is not validated.

We proceed to the suppression of the variable that contributes the least to the modal, in this case "Peripheral services ".

**Table N°20: Coefficients of deadlines, and costs.**

**Table : Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constante) | 5,797 | 1,117 | | 5,191 | ,000 |
| | Deadlines | ,357 | ,548 | ,116 | ,650 | ,521 |
| | Costs | ,494 | ,247 | ,357 | 2,003 | ,055 |

a. Dependent Variable: satisfaction.

**Source:** SPSS version 22

The linear relation is not validated.

We exclude of the variable that contributes the least to the modal, in this case “deadlines“.

**Table N° 21: Model summary of costs**

**Table : Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Edit statistcs | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Variation of R Square | Variation of F | ddl1 | ddl2 | Sig. |
| 1 | ,369[a] | ,136 | ,105 | 1,71091 | ,136 | 4,400 | 1 | 28 | ,045 |

a. Dependent Variable: satisfaction.

b. Predictors: (Constant), Costs.

**Source:** SPSS version 22

The R-square column represents the proportion of the variance in the dependent variable (customers’ satisfactions) which can be explained by the independent variable “Cost”, in other words; how well the model fits the data. In this case, the value is 10.5% which means that the model (which includes each

perception of: Cost/quality ratio) explains 13.6% of the variance in the dependent variable (customers' satisfactions).

The value of the R-square is 10.5%, it cannot explain the model.

**Table N° 22: ANOVA (variable costs)**

**Table : ANOVA[a]**

| Model | | Sum of Squares | ddl | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Régression | 12,880 | 1 | 12,880 | 4,400 | ,045[b] |
| | Résidus | 81,962 | 28 | 2,927 | | |
| | Total | 94,842 | 29 | | | |

a. Dependent Variable: satisfaction.

b. Predictors: (Constant), Cost.

**Source:** SPSS version 22

This table indicates that the regression model predicts significantly the dependent variable. The significance of the regression model here is 0.045 which is ales than 0.05, and this indicates that; overall, the regression model significantly predicts the outcome variable.

The F value is not significant, in this case F= 4.400.

**Table N° 23: Coefficients (variable costs)**

**Table : Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Ecart standard | Beta | T | Sig. |
| 1 | (Constante) | 6,452 | ,480 | | 13,434 | ,000 |
| | Costs | ,510 | ,243 | ,369 | 2,098 | ,045 |

a. Dependent Variable: satisfaction.

**Source:** SPSS version 22

The variable Cost contributes in explaining the dependent variable (Beta=.369). The significance of this variable is 0.045, which is less than 0.05 and therefore it is significantly contributing to the prediction of the dependent variable.

$$\hat{Y} = 0.510\ X$$

Where:

$\hat{Y}$: satisfaction of customers

X: Costs

## Section3: The role of the triptych cost-quality-time in logistics process (Company-customers)

### 1 Analysis report

The results of the quantitative research allows us to verify our second hypothesis which "the perception of the triptych cost-quality-time impacts the satisfaction of businesses.

Our questionnaire guide has been distributed on thirty customers of Swissport, 87% of them are freight forwarders "Businesses".

More than half of the respondents (54%) have been clients of Swissport since its opening on 2009. The first date of the customers' relationships with swissport allows us to track their loyalties.

"Air Algerie" is the top of mind of 65% of the respondents, but most of them reclaim about the bad services of this logistic services provider. 15% of the respondents mentioned Swissport before any other logistic services providers.

29 of 30 respondents are not satisfied at all about billing department services as they spend lot of time there.

The regression analysis, where the independent variables are the perception of: deadlines, warehousing services, cost/quality of services ratio, and peripheral services, and the dependent variable is "customers' satisfactions", shows that the model explains 30.1% of the variance in the dependent variable. The value of F is not significant (F=2.58).

As a consequence, the model that includes customers' satisfactions as the dependent variable, the perception of deadlines, the quality of warehousing services, the costs of services compared to their qualities (Cost/ quality ratio), and peripheral services as independent variables is not significant, which means the linear relation is not validated. As a result we refuse the second hypothesis which is "The perception of cost, quality, and time impacts the satisfactions of customers".

We can explain that by the fact that Swissport has no cargo and ground handling competitors in Algeria's market other than "Air Algerie". Most of customers have issues dealing with "Air Algerie", which oblige them to call for Swissport's services as they offer higher quality of services.

Better said, the triptych cost-quality-time isn't the only factor that impact customer's satisfaction. Other factors must be taken in consideration.

The variable cost/quality of services ratio, which is the cost of Swissport logistics services compared to the quality of their services, explains alone 36% of customer's satisfactions, but it doesn't validate the model. As a consequence, we can't validate the third hypothesis which is" Quality of logistics services impacts customers' satisfactions" taking in consideration the type of customers that are mainly freight forwarders

## 2 Recommendations

1. Build a customer data base in order to personalize the company's offers and be able to notify each customer about the arrival of their shipments right after they insert them into Swissport's cargo system.
2. Increase the number of employees in billing department.
3. Develop Swissport's relationship with customs.
4. Offer more peripheral services such as "photocopying" as all customers need many copies of the received pouches in the process of picking their shipments.
5. Minimize Swissport's costs so as they can align their services' prices with the national logistic services provider "Air Algerie"
6. Fix the system synchronization between Swissport, their partners, and the customs systems to reduce operations deadlines.
7. Application of intelligent systems to collect the received shipments automatically once they are placed in their positions.
8. Develop customs systems to reduce manual operations that take time.

## 3 Research limitations

- Time was too short to be able to reach more freight forwarders.
- Time limited access to the company's location.
- Lack of pervious researches in this field.
- Lack of customer's database.
- No access to customs services.

## Conclusion

The study of the role of the triptych: cost, quality, time in logistics process, was made through the verification of the customers' perception of this triptych, specifically the quality of logistics services, and whether it impacts customers' satisfaction or not. We used a quantitative study, within the framework of this study, a questionnaire was distributed to the customers of Swissport.

Our results lead us to refuse our third hypothesis and demonstrate that in fact Swissport must take into consideration other factors to measure the satisfaction of its customers, and as a consequence the performance of its logistic services.

The solutions that we have proposed will enable Swissport to manage its conflicts with its logistics partners, increase the flexibility of the company regarding the increase of the demands. This will enable Swissport to improve its quality of service and minimize its logistical costs and deadlines.

# General conclusion

## General conclusion

The increasing importance of logistics and its effects on transportation processes have been considered in freight transport demand. For this reason companies call logistics services providers, to ensure high quality of services with a minimum investment. This research covers logistics and transportation, and attempt to determine the role of the triptych cost-quality-time in the performance of a logistic process. The main content includes an introduction to logistics, the character of different transport operations in logistic services, and a study case.

We conducted a study on a logistics service provider “Swissport” and its partners; Qatar, Turkish, and Emirate airlines, to measure the impact of logistical costs, quality of services and deadlines on the performance of the company and their partners.

Swissport’s partners are very satisfied of the quality of services provided by the company. These services are mainly aircraft ground handling services, and storage of customers’ shipments. On the other hand, Swissport is looking to maintain its management of the triptych as they are satisfying their partners.

The customer’s survey was not significant as there are other factors that impact the customer’s satisfaction. The reasons can be the fact that most of the respondents are freight forwarders (which is the case of most o Swissport’s clients). They look forward to be served well once they are at Swissport rather than goods’ quality of storage or costs of the services. Freight forwarders are not the final customers.

# References


- Article L.321-7 of the Civil Aviation Code, related to the security of air cargo.
- BENSABAA (F), LE GOFF (J) : Mesurer la performance de la fonction logistique, édition eyrolles, paris, 2009, p.49
- Cambridge dictionary
- Cargo and special load handling course, provided by Emirates cargo manager
- CORBEL (j), management de projet ; fondamentaux, méthodes, outils, Edition Eyrolles, 2012, paris, p67.
- Doing Qualitative Researh in Education with SPSS, Daniel Muijs,Sage, Publications London, 2004, p01.
- Doing Qualitative Researh in Education with SPSS, Daniel Muijs,Sage, Publications London, 2004, p13
- ElfriedeKrauth, Hans Moonen, ViaraPopova, MartijnSchut, article of performance indicators in logistics service provision and warehouse management, 2005, P02.
- ElfriedeKrauth, Hans Moonen, ViaraPopova, MartijnSchut, article of performance indicators in logistics service provision and warehouse management, 2005, P02.
- From Innovation, Science and Economic Development Canada 11-06-2018
- International journal of Physical Distribution & Logistics Management. The State of Quality in Logistics, William F. Read Mark S. Miller 1991. P36
- International Journal of Physical Distribution &Logistics Management, P23
- LAURENT, (F) : les études de marché, comprendre le client, éditions d'organisation, France, 2001.p.51.
- MEDAN (P), GRATACAP (A) : Logistique et supplychain management : intégration, collaboration et risque dans la chaine logistique globale, édition Dunod, paris, 2008, p.12.
- MORANA (J) : De la logistique au supplychain management (SCM) : vers une intégration des processus, édition e-thèque, paris, 2003, p.17
- OUDOT (S), management des systèmes/gestion de projet EGC, 3éme année, EUROMED, 2009-2010, p46.
- PIMOR (Y), FENDER (M) : logistique : production, distribution, soutien, édition Dunod, paris, 2010, p4.
- Qualitative research article Sonia Ospina Robert F. Wagner Graduate School of Public Service
- Quantitative Research Methods, A Guide For Research Post Graduate Students, The University Of Hong Kong, John Bacon-Shone, 03 February 2015, page 13.

- The " Goods Transport" dealt in the articles L.321-6 to L.321-7
- TilahunNigatuHaregu course, African Medical and Research foundation, March 2009.
- Total Quality Management class, Bussafi (K), ESC, 2019.
- Translatedfrom Master thesis: La contribution de l'externalisation logistique sur le triptyque coût-qualité-délai, M.TayebRezki, EHEC 2017, P35.
- Translation of global logistics class, RAHAL (F) , HEC, 2015.
- Transport efficiency through logistics development, Asian Development Bank, 2012, P12
- Transportation Research Procedia, 2016: Identification and Measurement of Logistics Cost Parameters in the Company. p 492
- Y.Y Tseng,Weng Long Yue, Michelle A P Taylor, the role of transportation in logistics chain, January 2005, p1663
- Y.Y Tseng,Weng Long Yue, Michelle A P Taylor, the role of transportation in logistics chain, January 2005, p1658
- Y.Y Tseng,Weng Long Yue, Michelle A P Taylor, the role of transportation in logistics chain, January 2005, p1659
- Y.Y Tseng,Weng Long Yue, Michelle A P Taylor, the role of transportation in logistics chain, January 2005, p1662
- Y.Y Tseng,Weng Long Yue, Michelle A P Taylor, the role of transportation in logistics chain, January 2005, p1665


**Webography**


- Air Waybill Jan 17, 2018 Investopedia website
- Catalyst logistics website
- Establish, Inc. / HWD & Grubb & Ellis Global Logistics
- From Innovation, Science and Economic Development Canada 11-06-2018
- HFS web site Flying high- the growth of the air freight industry 17 April 2018
- Slideshare website
- IATA official website
- Investopediawebsite
- Izoland website
- Qatar Airlines website
- THE EMIRATES GROUP ANNUAL REPORT | 2018-19 provided on their official website.

# References


- Turkish airline website

## Swissport interview

As a part of our preparation for our master's thesis which is under the theme of "the impact of logistics process on the triptych cost-quality-time" we have the pleasure to ask for your collaboration in order to find the key answers to some of our questions.

The purpose of this interview is to understand the impact of Swissport's logistics services on the triptych cost-quality-time.

Your responses to interview questions will be kept confidential, and used only for academic purposes.

We thank you for receiving us today and for giving us your precious time.

10. According to you, how do you describe the logistics process of Swissport?

    In my point of view, I think Swissport logistics process is a part of global standard process which allowed mesaying that we are achieving a high standard services, as all SOP (standard operating procedures) are established & developed by HQ in Zurich to be in the same level in all stations.

11. How do you measure the performance of each operation in this process? (logistics services performance)we are using Customer Service Portal which allowed us to have a real time monitoring, tools are been developed to can have at any time the performance of each operation available to us.

12. What are the logistics operations that impact directly the quality of your services? Operation can impact directly our quality are:

    -Delay of Aircrafts

    -Delay in inserting DATA of any shipment,

    -Delay in delivery

13. How do you measure the quality of Swissport services?

    Different process:

    -Customer satisfaction. (Feedback)

    -Monthly meeting with airlines key managers

14. What are the different costs that can be generated by the logistics process in Swissport?

    -Damaged cargo in the warehouse due to miss handling

    -loss of shipment

15. How do you manage to reduce these costs?

    Yes, improving quality adding resources & training

16. What are the logistics operations that impact directly the delivery time of imported or exported goods?

    The acceptance of shipping operations and securing shipments in export may take more than its time. Heavy custom's process has a huge impact for delivery time in the import operation.

17. What are the different deadlines that you set for your operations?

    The different deadlines are set by an SLA service level agreement with airlines as we are acting on behalf of airlines the most of time: -

    -RCF: Receiving from Flight: is the time of handling shipment from landing of the Aircraft until it will be received in the warehouse.

    -ARR: the time that shipment handled in the warehouse and document (LTA) are inserted in the system

    -NFD: Notification for delivery: The time of receiving shipment in warehouse and notify the client/ customer for receiving shipment (most of the time is the same day as good's arrived at our end)

    DLV: shipment delivered to final consignee from warehouse (invoice are paid and shipment ready for carriage)

18. What was the average deadline of these operations over the last period?

    The average was 99% .

19. What are the means/ actions to be taken to reduce the dispersion of these deadlines (by 10% or 20%)in order to better control these operations?

    Actions are very clear as the aviation industry is moving too fast your need a real time monitoring on each step and process to identify the dispersion or delay.

20. What are your competitor deadlines on this type of operations?

Not known the most important that we know we are more fast with quality and a good problem solving.

## Partners interview guide

As a part of our preparation for our master's thesis which is under the theme of "the impact of logistics process on the triptych cost-quality-time" we have the pleasure to ask for your collaboration in order to find the key answers to some of our questions.

The purpose of this interview is to understand the elements that constitute outsourcing logistics services, as a partner of Swissport logistics services provider.

Your responses to interview questions will be kept confidential, and used only for academic purposes.

We thank you for receiving us today and for giving us your precious time.

1) According to you, what are the reasons that pushed Emirates / Qatar / Turkish Airlines to outsource logistics services?

2) What are the objectives of your logistics outsourcing strategy?

3) What are the criteria for choosing your logistics services providers?

4) Generally, do you prefer long, medium or short term contracts and why?

5) Do you consider that outsourcing logistic activities is a need to maintain a competitive advantage?

6) What is the contribution of logistics outsourcing strategy to costs?

7) How do you describe your relationship with your partner Swissport logistic provider?

8) How do you qualify the quality of your logistics services before your partnership with Swissport?

9) How do you find the quality of Swissport logistics services?

10) Did Emirates / Qatar / turkish manage to meet delivery deadlines before your partnership with Swissport?

11) Do you think that logistics outsourcing has helped to reduce product delivery time?

12) How do you qualify the quality of your logistics services before your partnership with Swissport?

13) What problems do you generally face with Swissport logistics provider?

14) What is your future plan regarding logistics outsourcing strategy?

15) Would you be ready to internalize your logistics service.

## Customer's satisfaction survey

As a part of our preparation for our master's thesis which is under the theme of "the impact of logistics process on the triptych cost-quality-time" we have the pleasure to ask for your collaboration in order to find the key answers to some of our questions. The purpose of this study is to improve Swissport's logistics services and to better meet your expectations.

It will only take few minutes, and your answers will be greatly appreciated.

Thank you.

**1-** Which logistics service providers do you know on the airport?

……

**2-** 2- How often do you go to Swissport?

- ☐ Several times a week
- ☐ Once a week
- ☐ 2 à 3 fois par mois
- ☐ 2 to 3 times a month
- ☐ Rarely

**3-** Since when have you been a Swissport customer?

- ☐ Since its opening (2009)
- ☐ Since more than 3 years
- ☐ Since 3 years
- ☐ Since 2 years
- ☐ Recently

**4-** Document delivery operations are on time

Totally agree | 1 | 2 | 3 | 4 | 5 | Totally disagree

**5-** Waiting time in billing service

Very satisfied | 1 | 2 | 3 | 4 | 5 | Not satisfied at all

**6-** Goods delivery deadlines

Very satisfied | 1 | 2 | 3 | 4 | 5 | Not satisfied at all

**7-** The storage infrastructures of swissport

Very satisfied | 1 | 2 | 3 | 4 | 5 | Not satisfied at all

**8-** Goods are stored safely

Totally agree | 1 | 2 | 3 | 4 | 5 | Totally disagree

**9-** Ground handling tools of Swissport are of high technology

Totally agree | 1 | 2 | 3 | 4 | 5 | Totally disagree

**10-** Communication of Swissport with you regarding your shipments operations

Very clear | 1 | 2 | 3 | 4 | 5 | Not clear

| | | | | | at all |
|---|---|---|---|---|---|

**11-** Swissport's ability to process your claims

| Very satisfied | 1 | 2 | 3 | 4 | 5 | Not satisfied at all |
|---|---|---|---|---|---|---|

**12-** Bills are very precise and clear

| Totally agree | 1 | 2 | 3 | 4 | 5 | Totally disagree |
|---|---|---|---|---|---|---|

**13-** Cost/ quality ratio of Swissport's services

| Very satisfied | 1 | 2 | 3 | 4 | 5 | Not satisfied at all |
|---|---|---|---|---|---|---|

**14-** Have you already had a bad experience with Swissport

- ☐ Yes
- ☐ No

If yes, could you please tell us this experience?

……

**15-** Considering your complete experience with Swissport, how likely would you be to recommend Swissport to your environment?

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|

**16-** Is it likely that you make a new call to Swissport's services?

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|

**17-** You are :

- ☐ Freight forwarder
- ☐ Client
- ☐ Particular

**18-** Type of your shipment

- ☐ General cargo
- ☐ Perishable products
- ☐ Dangerous products
- ☐ Oil and Gas

**19-** Your age :

- ☐ Between 18 and 25 years old
- ☐ Between 26 and 35 years old
- ☐ Between 35 and 46 years old
- ☐ More than 46 years old

**20-** Your wilaya of residence

……..

## Enquête de satisfaction clients

Dans le cadre de la préparation de notre mémoire de Master sous le thème "L'impact du processus logistique sur le triptyque coût-qualité-

délais", nous avons le plaisir de solliciter votre collaboration pour trouver quelques réponses clés à nos questions. Le but de cette étude est d'améliorer les services logistiques de Swissport et de mieux répondre à vos attentes.

Ça vous prendra seulement quelques minutes, et vos réponsesseront grandement appréciées.

Merci infiniment.

**1-** Quels sont les prestataires de services logistiques que vous connaissez sur la plateforme aéroportuaire ?

……

**2-** Combien de fois fréquentez-vous Swissport ?

- ☐ Plusieursfois par semaine
- ☐ Unefois par semaine
- ☐ 2 à 3 fois par mois
- ☐ 1 fois par mois
- ☐ Rarement

**3-** Depuis combien de temps êtes-vous client chez Swissport?

- ☐ Depuis son ouverture (2009)
- ☐ Depuis Plus de 3 ans
- ☐ Depuis 3 ans
- ☐ Depuis 2 ans
- ☐ Depuispeu de temps

**4-** Les opérations relatives à la remise documentaires sont à temps

Tout à fait d'accord | 1 | 2 | 3 | 4 | 5 | Pas du tout d'accord

**5-** Temps de mise en attente au service facturation

Tout à faitsatisfait | 1 | 2 | 3 | 4 | 5 | Pas du tout satisfait

**6-** Délais de livraison

Tout à faitsatisfait | 1 | 2 | 3 | 4 | 5 | Pas du tout satisfait

**7-** Les infrastructures de stockage de swissport

Tout à fait Satisfait | 1 | 2 | 3 | 4 | 5 | Pas du tout satisfait

**8-** Marchandiseentreposée en toutesécurité

Tout à fait d'accord | 1 | 2 | 3 | 4 | 5 | Pas du tout d'accord

**9-** Les outils de manutention sont de très haut de qualité

Tout à fait d'accord | 1 | 2 | 3 | 4 | 5 | Pas du tout d'accord

**10-** Communication de Swissport avec vous concernant les opérations relatives à votre expédition

Extrêmementclaire | 1 | 2 | 3 | 4 | 5 | Pas du tout claire

**11-** Capacité de Suissport à traiter vos réclamations

Tout à faitsatisfait | 1 | 2 | 3 | 4 | 5 | Pas du tout satisfait

**12-** Les factures sont bien précises et claires

Tout à fait | 1 | 2 | 3 | 4 | 5 | Pas du tout

| Satisfait | | | | | | satisfait |
|---|---|---|---|---|---|---|

**13-** Coût des services de Swissport

| Tout à faitsatisfait | 1 | 2 | 3 | 4 | 5 | Pas du tout satisfait |
|---|---|---|---|---|---|---|
| | | | | | | |

**14-** Avez-vous déjà eu une mauvaise expérience avec Swissport

- Oui
- Non

Si oui, pouvez-vous nous raconter cette expérience

……

**15-** Recommanderiez-vous nos services à vos connaissances ?

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|

**16-** Est-il probable que vous fassiez un nouvel appel à nos prestations ?

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|

**17-** Vous êtes :

- Transitaire
- Client
- Particulier

**18-** Type de votre expédition

- Cargo général
- Produits périssables
- Produits dangereux
- Pétroliers et Gaz

**19-** Votre âge :

- Entre 18 et 25 ans
- Entre 26 et 35 ans
- Entre 35 et 46 ans
- Plus de 46 ans

**20-** Votre wilaya de résidence

……