HIGHER SCHOOL OF MANAGEMENT AND DIGITAL ECONOMY

HSMDE

Dissertation Submitted in Partial Fulfillment of the Requirements for a Master's Degree

Specialty: E-Business

THEME:

THE IMPORTANCE OF THE GATEKEEPING IN THE PERFORMANCE OF REVERSE LOGISTICS

CASE OF: Algerian E-traders.

Submitted by

Miss.

Bouzir Afaf

Supervised by

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Abstract

In the rapidly evolving landscape of e-commerce, reverse logistics management has emerged as a critical factor for businesses that want to stay in the concurrent market.

This dissertation focuses on exploring the significance of gatekeeping practices in the realm of reverse logistics within the context of Algerian e-commerce.

The purpose of this study is to assess the current gatekeeping practices employed by Algerian e-commerce outlets in managing returned products and examine the relationship between gatekeeping practices and reverse logistics variables such as return rate and inventory accuracy.

The research methodology included two primary data collection methods: semi-structured interviews and a questionnaire survey. The interviews provided valuable qualitative data, allowing for a deeper understanding of the gatekeeping practices employed by Algerian e-commerce outlets, and by utilizing a structured questionnaire, it was possible to collect standardized data, enabling statistical analysis and the identification of correlations and regressions.

These results highlight the critical role that gatekeeping practices play in managing return rates and enhancing inventory management within the e-commerce industry. By implementing effective gatekeeping strategies, e-commerce outlets can minimize returns, improve inventory accuracy, and ultimately achieve better overall performance in reverse logistics operations.

Key Words: Reverse logistics, gatekeeping, returns, e-logistics, e-traders, e-commerce, Risk-blacklist, green list, returns policy, order confirmation, return management.

Sommaire:

Dans le secteur en pleine évolution du commerce électronique, la gestion de la logistique inverse est devenue un facteur essentiel pour les entreprises qui veulent rester sur le marché concurrentiel.

Cette dissertation se concentre sur l'exploration de l'importance des pratiques du « Gatekeeping » dans le domaine de la logistique inverse du contexte du commerce électronique algérien.

L'objectif de cette étude est d'évaluer les pratiques actuelles du « gatekeeping » employées par les e-commerçants algériens dans la gestion des retours et d'examiner la relation entre ces pratiques et les variables de la logistique inverse telles que le taux de retour et la gestion de l'inventaire.

La méthodologie de recherche comprenait deux méthodes principales de collecte de données : un entretien semi-structuré et une enquête par questionnaire. L'entretiens a fourni des données qualitatives précieuses, permettant une compréhension plus approfondie des pratiques du gatekeeping employées par les points de vente électroniques algériens, et l'utilisation d'un questionnaire structuré a permis de collecter des données standardisées, permettant une analyse statistique et l'identification de corrélations et de régressions.

Ces résultats mettent en évidence le rôle essentiel que jouent les pratiques du gatekeeping utilisées dans la gestion du taux de retour et l'amélioration de la gestion des stocks dans le secteur du commerce électronique. En mettant en œuvre des stratégies efficaces de contrôle d'accès, les points de vente de commerce électronique peuvent minimiser les retours, améliorer la qualité des stocks et, en fin de compte, obtenir de meilleures performances globales dans les opérations de logistique inverse.

Mots clés : Logistique inverse, gatekeeping, retours, e-logistique, e-commerçants, commerce électronique, Risk-Blacklist, Green List, politique de retour, confirmation des commandes, gestion des retours.

ملخص

في خِضَمِّ التّطور المتسَارِع في مجَال التّجارة الإلكترُونيّة، أصبَح إتقَان تسيِير اللّوجستيّات العَكسِيّة عاملًا أسَاسِيّا بالنّسبَة للمُؤَسّسات التِي تكافِح حتَّى تضمَن بقَائهَا في سُوق المُنافَسة.
هَذه المُذكّرَة تطرَح موضُوع أهمِّية تطبِيق استِخدَامات استرَاتيجيّة الـ "gatekeeping" في تسيِير العائِدات عِند التُّجّار الإلكترُونِيّين الجزَائِرِيّين، وتدرُس عَلاقَة التّأثِير بين هذِه الاستخدامات ومُختلَف متغيّرات اللّوجستيّات العَكسِيّة؛ كمُعدّل الإرجَاع وتسْيير المَخزُون.

منهَجيّة البَحث تضَمّنت طريقَتين رئِيسِيّتين لجَمع البَيانات اللّازمة: مُقابَلة شِبه منظّمة واستِبيان.
المُقابَلة مكّنت من جَمع معلُومات نظَرِيّة أدّت إلَى فَهم تطبِيقات استراتيجية الـ "gatekeeping" المستَخدَمة من طَرف التّجار الإلكترُونِيّين الجزَائِرِيّين بشَكل مُعمّق، في حِين أنّ الاستبيان سمَح بتَوفِير بيَانات تحلِيلية قابِلة للإحصَاء وتوضِيح علاقَات الارتباط والتأثِير بينَ مختلَف المُتغَيّرات المَدرُوسة.
نتَائِج البحث العِلمي سلّطت الضَّوء علَى الدَّور الحَاسم الذِي تؤَدّيه مُمارَسَات الـ "gatekeeping" في إدارَة معَدّلَات العَائد وتَعزِيز إدَارة المَخزُون فِي التِّجَارة الإلكْترُونِيّة. منْ خِلال وَضع استرَاتِيجِيّات فعَّالة تتمَكّن مَتاجِر التّجارة الإلِكترُونيّة تقلِيل العَائدَات إلَى الحدّ الأَدنَى، وتَحسِين فعَالِيّة المَخزُون، وفِي نهَاية المَطَاف تَحقِيق أَداء عَام أفضَل فِي اللّوجستيّات العكْسِيّة.

الكَلمَات المِفتَاحيّة: اللّوجستيّات العكْسِيّة، العَائدَات، تسيِير العائِدات، التّجارة الإلِكترُونيّة، التُّجّار الإلكترُونِيّين، سِيَاسات الإرجَاع، تأكِيد الطّلبيات.

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AFTEL: French association of multimedia telematics

B2B: Business-to-business

B2B2C: Business-to-business-to-consumer

B2C: Business-to-consumer

CLM: Council of Logistics Management

CLV: customer lifetime value

CRM: Customer Relationship Management

EOL: End-of-life

GPS: Global Positioning System

GRLM: Global Reverse Logistics Market

IS: information systems

LSP: Logistic Service Providers

MFM: Manufacturing Flow Management

NICT: New Information and Communication Technologies

PSA: public service announcement

REL: Reverse E-Logistics

RL: Reverse logistics

RM: return management

RMA: return merchandise authorisation

RPP: Return policy and procedure

SCC: Supply-Chain Council

SCM: Supply Chain Management

SCOR: Supply Chain Operations Reference

SRM: Suppliers Relationship Management

WTO: World Trade Organization

Contents

General introduction

With the ever-evolving landscape of electronic commerce, it has become imperative for businesses to adopt comprehensive strategies that effectively manage all aspects of their operations. Among these, the logistics chain stands out as a critical element that requires careful attention. E-commerce retailers, faced with the complex web of upstream and downstream flows, must be prepared to address the challenges associated with managing reverse logistics.

Reverse logistics, although not a new concept, has transformed with the advent of e-commerce. The traditional principles and strategies governing the discipline have evolved, becoming increasingly intricate and specific to the needs of online retail. As customers are empowered with the convenience of online shopping and hassle-free returns, e-commerce outlets are confronted with the task of efficiently managing the reverse flow of goods.

This entails dealing with returned products, processing customer refunds or exchanges, and ensuring the appropriate disposition of items, all while maintaining operational efficiency and business performance.

The effectiveness of gatekeeping, a critical component of reverse logistics, has a significant impact on the overall performance of e-commerce outlets. Gatekeeping acts as a control mechanism that ensures the quality, condition, and eligibility of returned items, facilitating appropriate handling and disposition. Proper gatekeeping practices help optimize resource utilization, minimize errors, reduce costs, enhance the performance, and the customer satisfaction.

However, the dynamic nature of e-commerce and the unique challenges it presents require tailored gatekeeping strategies. E-commerce outlets must navigate through a multitude of factors, such as varying return policies, complex product categories, and the need to balance customer satisfaction with operational efficiency. It is within this context that we are conducting our present research, which is entitled:

“The importance of the gatekeeping on the performance of reverse logistics, case: Algerian e-traders”

Understanding the importance of gatekeeping and its relationship with the performance of reverse logistics is crucial for e-commerce retailers seeking to establish competitive advantages, improve customer loyalty, and optimize their overall supply chain operations.

Therefore, this study aims to delve into the impact of gatekeeping on the performance of reverse logistics in Algerian e-commerce outlets. By examining the key factors influencing gatekeeping effectiveness, such as return verification, inventory management, and IS solutions implementation, we seek to identify best practices and provide recommendations for enhancing reverse logistics performance in the e-commerce industry. The findings of this research will contribute to the existing body of knowledge and offer practical insights that can aid Algerian e-commerce outlets in developing robust gatekeeping strategies to thrive in today's competitive online market.

All this has led us to want to know more and to deepen the following problem:

"To what extent does the implementation of gatekeeping improve reverse logistics in the Algerian distance selling setting?"

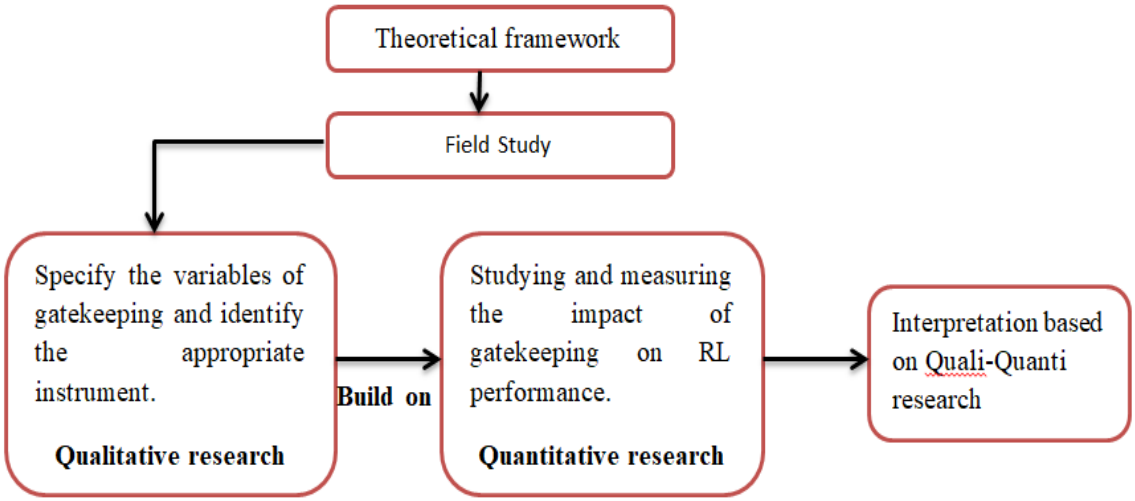
This issue raises the following questions, which we will attempt to answer:

- What are the dimensions and applications of strategy gatekeeping among Algerian e-traders?
- How do these practices influence the invers e-logistics variables?
- Is there any way in which information systems can impact return rate in e-commerce?
- What poor implementation of gatekeeping can mean for good stock management?

The answers to the questions posed will be provided by verifying the following hypotheses:

- H01: The return rate is significantly affected by the implemented return policy
- H02: The order confirmation can significantly affect the return rate.
- H03: The usage of the information systems and data bases such us Risk-blacklists and Green list reduce the return rate.
- H04: The delays in a return correlate with the inventory management

To carry out our work and verify our basic hypotheses, we used various research methods outlined in the following figure:



We will at first point inspire from different referential models and then we will conduct a qualitative study to find out what is the case in the field and to select the most relevant variables in the case of e-commerce. Our qualitative study consists of a semi-directive interview with two employees from two separate delivery companies to help us choose the most relevant variables for Algerian e-retailers in return logistics.

Then we led a quantitative approach presents in a questionnaire by which we will assess the different relationships between the practices adopted from the interview and the reverse e-logistics variables.

With this rationale view, we will attempt to answer these questions by dividing our research into three chapters:

- The first will set out the fundamentals of reverse logistics and returns management in e-commerce.
- The second chapter presents the gatekeeping strategy and the reverse logistics factors that can be impacted by it.
- The third and last chapter will be addressed our empirical framework, the hypotheses we have posed to answer our research questions. In this part, we first describe the methodology used to collect the data required for the qualitative and the quantitative analysis, and then the results of this analysis. Lastly, we will conclude with a summary of our findings.

Chapter I:

Reverse logistics as a key process in e-commerce

Introduction:

Over the time, supply chain management has become an indispensable practice in the management and conduct of companies. Its insights are essential and contribute as much to a strategic as to an operational thinking.

E-commerce and logistics are the complement to each other, logistics is the fundamental guarantee for e-commerce, and e-commerce is the future for the logistics, both tend to integrate with the development of information technology.

In recent years, the returned volume of e-commerce increases sharply. The lack of good return channels is the main reason for the customers to give up on-line transactions. Many well-known foreign companies take reverse logistics strategy as an important factor to reduce costs, increase customer satisfaction and strength the advantage of competitiveness.

Through this first chapter, we will try to understand the supply chain management and its changes before moving on to the concept of reverse logistics in e-commerce, which is a strategic aspect for e-business practitioners. We will also explore the concept of returns management, which includes the most important part of reverse logistics.

Section 1: Supply chain management, from traditional to electronic commerce

Ecommerce is getting progressively popular, and the share of this kind of purchase in the total trade is still marginal on a worldwide scale[1]; however, it is significant to note that there is an increase in the importance of online transactions.

Different e-commerce environments affect the supply chain relationship management of companies that do business electronically.

Logistics and supply chain, next to marketing, play a critical role in managing an online store. It allows for attracting new customers (by the availability of goods, variety of delivery options, short lead time, and low shipping cost); and also helps to keep good relations with clientele who placed their orders. Some years before, a good logistics service (punctuality, conformity of goods, no damages, flexibility) was a competitive advantage in ecommerce, but today is a "must be."

The main reason for this chapter is to explain and clarify e-commerce and supply chain concepts and their importance.

1.1. Electronic commerce, concept and definition

There are several definitions of this concept, the most significant of which are those proposed by the World Trade Organization (WTO), French association of multimedia telematics (AFTEL) and also the one proposed by Algerian law.

According to Article 6 of law No. 18-05 on electronic commerce which appeared in the Official Gazette of the Algerian Republic on 10 May 2018: *"Electronic commerce is understood to mean: the activity by which an e-provider offers, to an e-consumer, remotely and by means of electronic communication, the supply of goods and services*" [2]

According to the World Trade Organization WTO: *"Electronic commerce is the production, distribution, marketing, sales or delivery of goods and services by electronic means"* According to the French association of multimedia telematics (AFTEL): *"Ecommerce refers to all commercial exchanges in which the purchase is made over a telecommunications*

[1] https://online.maryville.edu/blog/future-of-online-shopping/ (13/02/2023) at 10:22 PM
[2] Regulation No. 18-05 of 10 May 2018 on electronic commerce

network; it covers both simple orders taking and purchases with payment and concerns the purchase of goods and services whether or not they are directly consumed online.

Ecommerce refers to all commercial uses of the networks, including those in which a company merely presents its products, with the order being placed offline"

The term e-commerce can therefore generally be defined as the result of the development of traditional trade under the influence of new communication and information technologies. It covers all exchanges and transactions on the Internet, including purchases, advertisements, sales, and payments.

E-commerce is organized into many categories, the main ones are:

- B2C (Business-to-consumer).
- B2B (Business-to-business).
- B2B2C (Business-to-business-to-consumer)

1.2. Supply Chain management

The history of supply chain management began with a concept of 'logistics' as a military strategy that expounded the proper management of two necessary factors: time and space. Logistics was then generated for various domains and evolved into a chain which defined as per the Institute of Logistics IL as follows: *"a sequence of events to satisfy customers. It may contain the activities of procurement, production, distribution, and waste management, with transport, storage, and information technology"*

Logistics includes various interactions with business functions and departments such as after-sales service, marketing, finance, production, procurement, information services, administration, and even human resources. These interactions and coordination have given rise to a new concept, Supply Chain Management (SCM), aimed at increasing performance and fostering continuous improvement.[1]

1.2.1. Definition of Supply Chain management

Supply chain management is now seen as a key to performance and a competitive advantage. Large global companies and even small businesses are starting to incorporate this concept into their habits.

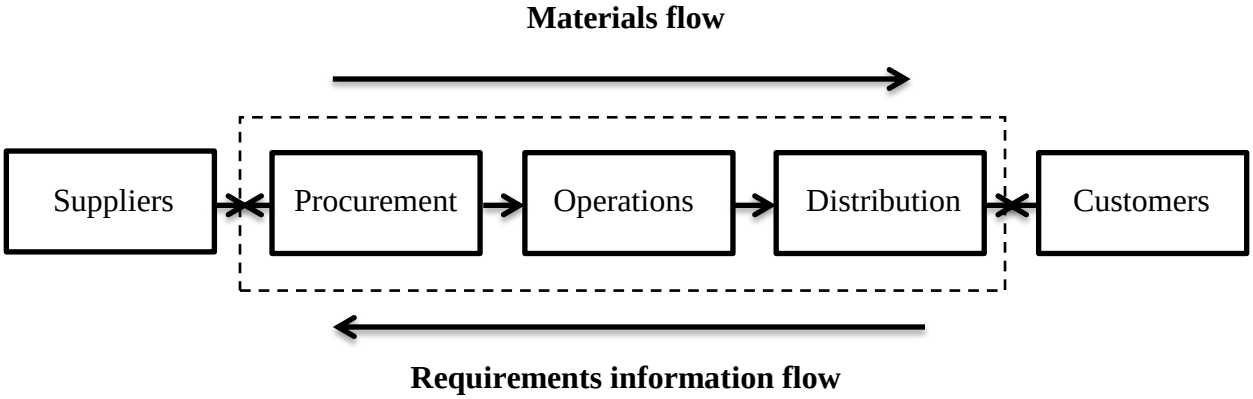
[1] KEFIF (Nawel)), *Identification et mesure des indicateurs de la performance logistique*, Master thesis, EHEC, Algeria, 2012, P.17.

The Supply-Chain Council SCC defines SCM as the: *"Effort involved in producing and delivering a final product from the supplier's supplier to the customer's customer"*

Another definition of SCM is: *"The systematic effort to provide integrated management to the supply value chain in order to meet customer needs and expectations, from suppliers of raw materials through manufacturing and on to end customers."* [1]

Extending this idea, it is suggested that the supply chain can be more precisely defined as: *"A network of connected and interdependent organizations mutually and cooperatively working together to control, manage and improve the flow of materials and information from suppliers to end users"* [2]

Figure 1: processing and analysis of survey results



Source: Martin Christopher, *Logistics and supply chain, Pearson education*, UK, 2016, P.12

The supply chain, or global logistics chain, has the task of controlling and optimizing all physical and information flows from customers to suppliers. It can be seen as a cycle that includes different processes leading to the most important link: the customer.

A thorough knowledge of the supply chain enables the company to meet the ever-increasing demands of its customers in relation to them, whether in terms of quality, delivery or price, without jeopardizing the company's financial health.

1.2.2. Supply Chain Management's key business processes

[1] STEIN (Martin) et VOEHL (Frank), *Macro-logistics Management: A Catalyst for Organizational Change*, CRC Press, United States of America, 1997, P.55.

[2] MARTIN (Christopher), *Logistics and supply chain*, Pearson education, United Kingdom, 2016, P.03.

It is critical to be aware that SCM consists of coordination and cooperation with diverse channel partners (suppliers, intermediaries, logistics providers and customers).

Basically, SCM integrates the control of supply and demand for inside and among companies. Different product sorts have distinct supply chain structures and distinct numbers of operator's with-inside the supply chain[1]; however there are common key business processes that form the structure of supply chain management: customer relationship management, customer service management, demand management, order fulfilment, manufacturing flow management, supplier relationship management, product development and commercialization and returns management, as shown in the figure bellow (Figure 2):

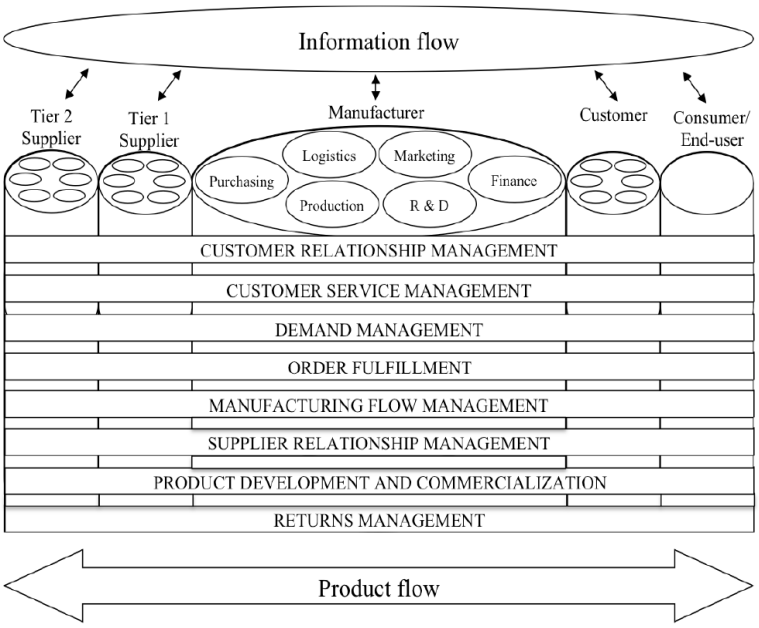
According to figure 2, SCM processes are: [2]

- Customer relationship management: outlines the framework for how customer relationships will be built and kept.
- Supplier relationship management: offers a structure for developing and maintaining partnerships with suppliers.
- Customer Service management: operates directly with the client team and the public service announcement (PSAs) to address issues before they have an impact on the consumer, and ensure that pledges are honored.
- Demand management: combines the skills of the supply chain with what consumers want.
- Order Fulfillment: it refers to a network that covers all activities necessary for an organization to meet customer requirements while minimizing the overall cost of deployment.

[1] Kivelä (Eija), *developing reverse logistics in rental returns management*, Master's thesis, Faculty of Business Studies, Finland, 2009, P.25.

[2] Douglas (M. Lambert), *supply chain management processes, partnership, performance,* SCM-institute, USA, 2008, PP.10-12

Figure 2: Supply Chain Management: Integrating and managing business processes across the supply chain



Source: Douglas M. Lambert, *supply chain management processes, partnership, performance,* SCM-institute, USA, 2008, P.03.

- Manufacturing flow management: encompasses all actions required to acquire, execute, and handle manufacturing flexibility in the supply chain and to produce a broad range of goods quickly and affordably.
- Product development and commercialization: gives the responsible of the CRM, the SRM, and the MFM processes teams the framework for developing and promoting goods in collaboration with suppliers and consumers.
- Return management: is the process of managing actions related to returns, reverse logistics, gatekeeping, and avoidance within a company and among significant supply chain participants. Furthermore, it makes it possible to effectively handle backward product flows, find chances to cut back on unwanted returns, and get rid of performance issues that result in returns.

1.3. Supply Chain in the era of electronic commerce

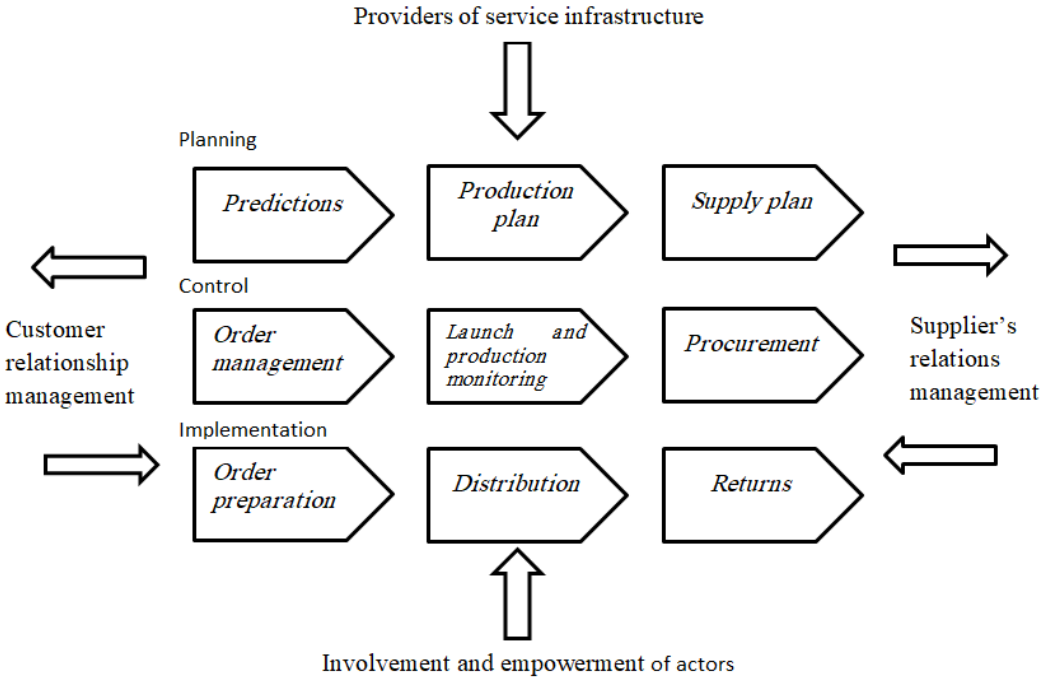
The customer's behavior has dramatically changed with the rise of digital tools and businesses, this transformation have pushed the world enterprises to adopt a new strategies and processes, especially in the domain of logistics**.**

In the other hand, rapid communications technology development is fundamentally altering the usual logistics sector by giving businesses new and difficult demands, as well as the tools to reorganize themselves to meet those demands.

1.3.1. Procedures of e-commerce supply chain

Three structured procedures can be used to depict an e-commerce logistics network as illustrated in the following figure:

Figure 3: the impact of e-business in supply chain



Source: SOTHY SREY, *LA LOGISTIQUE DANS LE E-COMMERCE*, French Review of Industrial Management Vol. 22, No.1, mars, 2003, P10.

- A planning procedure that develops output, transportation, and sales schedules using forecasts.
- A control procedure with the management of orders, the beginning and supervision of production, and the management of deliveries as important stages.

- And lastly, the implementation phase, which includes production management, order preparation, physical distribution operations and the management of returns.[1]

E-commerce additionally offers three areas of constraint that affect the kind of logistical solution used:[2]

- Customer relationship management, CRM: uses a "one-to-one," individualized strategy to create a real-time and on-going management system for the cycle of "commercial" contacts with clients.
- Providers of service infrastructure: leads to an integrated service offers that cover both upstream (purchasing and supply) and downstream (sales and delivery).
- Providers of service infrastructure: Managing internal and external supplier relationships requires publishing product catalogues online and managing them in real-time, thus necessitating near-instantaneous logistics adjustments.
- Involvement and empowerment of actors: includes each actor in the decision-making process in which they might be engaged.

1.3.2. E-commerce supply chain's objectives

According to Lilian Grandrie Kalinowski[3] there are three main objectives of ecommerce SC:

A/ Managing deadlines:

It should be mentioned that delivery times vary throughout the supplier network. As a consequence, supplier lead times (upstream logistics), last-mile transport times (downstream logistics), and manufacturing and order processing or preparation times vary. As a result, many stages can jeopardize the e-retailer's anticipated lead times, which is why all of these stages must be analysed and outlined to best predict delivery times and implement the best option to give consistent and acceptable lead times to customers. Good time management allows e-traders to align and maximize supply chain strategy, be more transparent with clients, and arrange the business partnerships more effectively.

B/ Inventory management:

[1] Dornier (P.P) and Gilles (Gotteland), *Comment adapter la logistique aux spécificités du commerce électronique*, review of IREPP, Juin, 1999, P04.
[2] Ibid, P.05
[3] https://www.ecommerce-nation.fr/e-logistique (06/03/2023 at 09:34)

It is a critical operation for any e-commerce company in order to avoid: errors and delays, customer dissatisfaction, stock-outs, and to guarantee quick customer deliveries.

C/ management of returns:

It is a critical component of e-commerce and e-logistics, and it has a far larger effect on e-retailers' financial success than most people realize. An efficient returns management system allows online retailers to optimize customer satisfaction and gain a competitive advantage.

1.3.3. The difference between e-commerce and traditional supply chains

To clarify the points of the difference between supply chain sorts; the table below recapitulates and indicates the most explicit divergences. [1]

Table 1: Traditional and e-commerce supply chains differences

	Traditional supply chain	**e-commerce supply chain**
Type of loads	High volumes	Parcels
Customer	Known and loyal	Unknown and random
Destination	Concentrated	Highly scattered
Demand trend	Regular and predictable	Lumpy and difficult to forecast
Resource focus	Supply side	Demand side
Business relationship	Linear / vertical	Direct / horizontal

Source: Fang and Zhang, *the E-Logistics Framework in E-Commerce,* China, August 2005.

The first remarkable opposition is in terms of loads; E-commerce transactions are contingent on parcels and boxes, while traditional ones are based on high volumes of loads. Customers in e-commerce are unknown because of the distance sales settings on the opposite side of a loyal client in traditional trade. In addition to a concentrated destination, traditional supply chains

[1] LEI (Fang) and CHUAN-QIN (Zhang), *The E-Logistics Framework in E-Commerce, 7th* International Conference on Electronic Commerce, China, 15-17 August 2005, P. 408-412.

has a linear business relationship, on the contrary, an electronic commerce supply chain is characterized by a scattered destination and direct business relationship.

The specificities of logistics applied to e-commerce are speed and flexibility. The job of the e-logistician is based on the know-how of the logistician but is more complex; in addition to mastering the fields of warehousing and transport, the modern-day logistician must acquire skills in information systems and related services.

Indeed, the delivery of an order includes upstream and downstream logistics and their derivatives, which are made possible by the new information systems.

Fierce competition pushes web-based companies to lower their prices to join the path to better content, faster delivery, and telephone support. Service infrastructure providers are looking to guide companies towards integrated functions and a global service managed on a just-in-time basis. In other words, logistics remains the *sine qua non* of a successful transaction, end-customer satisfaction, and thus regular e-commerce practice.

Section 02: Overview of reverse logistics in e-commerce

Technological advances are making the world smaller, contributing to business change, and increasing the effectiveness of supply chains.

E-commerce logistics is a fusion of forward and reverse logistics processes. Forward Logistics manages goods transactions downstream of the supply chain from supplier to customer. However, as the demand for e-commerce has increased, product returns have increased proportionately. Therefore, developing similar reverse logistics was essential to meet this challenge. Reverse logistics, therefore, is designed to control the flow of goods upstream in the supply chain.
The focus of this section is to introduce the concept of e-commerce logistics. Furthermore, it explains the relationship and challenges of reverse logistics in e-commerce.

2.1.E-commerce logistics in the business world

Not only newly established online stores underestimate the value of e-logistics, but also large companies that use e-commerce as a lucrative additional sales channel.

E-logistics can have the same impact on companies in terms of creating processes, control systems, employees, and structures.

E-logistics is a dynamic collection of communication, computing, and collaboration technologies that turn important logistics processes into customer-centric ones through the exchange of data, knowledge, and information with supply chain partners. E-logistics also allows for event coordination and sound decision-making. The ultimate aim is to give the right product to the right customer at the right place and time.[1]

2.1.1 E-logistics flows and processes

To better understand the logistics of e-commerce, it is necessary to describe the flows and the elements that make up this concept; the figure below clarifies all its stages:

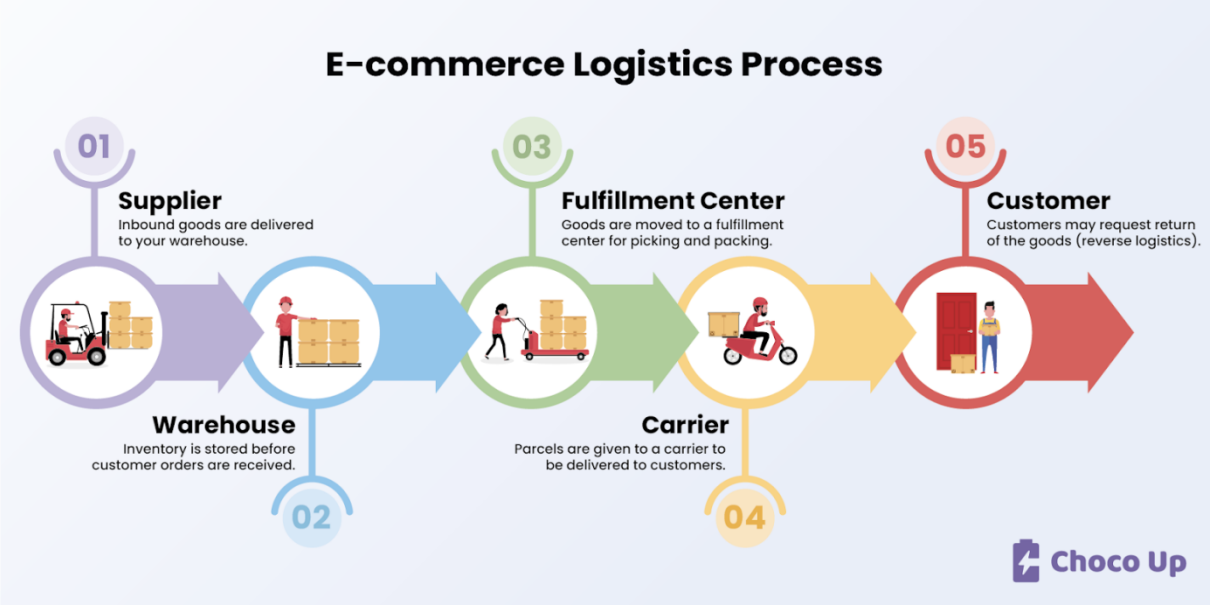
Supplier's role in the process of e-commerce logistics is to create products and ship inventory to business targets. Warehouses are an essential part of the supply chain that serves as a storage location for goods before shipment.

[1] GAONKAR (Roshan) *and* N. *(*Viswanadham), *E-logistics trends and opportunities*, *the logistics institute*, January, 2001, P04.

After receiving online orders, the stage of fulfillment center (or the distribution center) arrives; it is considered as a part of the supply chain that plays the hub position of all the logistical processes needed to get products from sellers to customers, it involves the entire fulfillment process from picking to processing, packaging, and shipping. The main goal of a fulfillment center is to turn inventory quickly. It is commonly used by logistics service providers.

A carrier is a person or company that transports items from one point to another, his mission is to deliver the orders to the last consumer. This last one is not the final stage in the e-commerce logistics process. Since buyers can return items, e-commerce retailers must also be responsible for return logistics.[1]

Figure 4: E-commerce logistics process



Source: https://choco-up.com/blogs/ecommerce-logistics Consulted on (15/03/2023)

2.1.2. Trends of ecommerce logistics

With the emergence of Artificial intelligence and new information and communications technology; ecommerce logistics also has new trends[2]:

1/ IT solutions:

Information technology plays an important role in e-commerce because it allows the exchange of all the necessary information. New IT solutions not only support the sales process but also

[1] https://choco-up.com/blogs/ecommerce-logistics, written and published by Brian Tsang (04/2020)

[2] A (Hadzi-Jovancic) & A (Losiak), *Logistics in e-commerce*, April, 2015, P09-P12.

integrate the entire supply chain. Most importantly, you always have information about your current inventory, especially if the logistics service provider offers storage and transportation services.

Another function of information technology in logistics is shipment tracking. The shop will send a tracking number that allows the customer to see where the package is and where it was. Unfortunately, current solutions only provide information from distribution centres.

One of the latest innovative ideas is using GPS[1] to track packages. This GPS solution simplifies real-time order tracking during stage transportation. With full integration between e-commerce platforms and logistics providers, as well as a dedicated customer interface, this transition also allows customers to change their destination in real-time.

The use of IT solutions also helps e-sellers who want to expand their activities abroad.

2/ International trade (Cross-border):

According to the European Commission, cross-border services are the future of e-commerce, while international shipping is seen as an obstacle.

One of the biggest barriers to cross-border trade is transportation costs. Cross-border shipping costs are often 3-5 times higher than domestic shipping costs, which have been observed to harm e-commerce performance. And the low price of products abroad does not compensate for shipping costs. In addition, there are some additional restrictions on shipping large or heavy shipments and prepaid shipping charges. Finally, delivery times are much longer (at least a few days), making daily deliveries almost logistically impossible.

3/ same-day delivery:

New delivery solutions force logistics service providers for e-retailers to become faster and more innovative. In recent years, e-commerce companies have prioritized same-day delivery. With the same-day system, the package can be received on the same day, shipped, and used for local service or immediate delivery.

There are three standard models available for same-day shipping. The most common solution is to use a courier network. This model is based on the integration of retailers and local couriers who can deliver goods within hours. With this solution, even small or medium-sized sellers can offer same-day delivery service in their respective urban areas. Many grocery

[1] Global Positioning System

retailers use their delivery vehicles, as this type of business may require special trucks (such as refrigerated trucks). This option allows you to manage the entire shipping process. Unfortunately, this solution is relatively expensive. The company must invest in fleets and be flexible in responding to fluctuations in consumer demand. The volume and number of operations must be critical to providing a cost-effective service.

The current trend focuses on core competencies and outsourcing rather than keeping additional activities in-house. Postal service providers and parcel service providers offer same-day solutions. This solution is cheaper than the courier service mentioned above but is suitable for large companies with high shipping volumes. Goods can be picked up by the seller and delivered to the customer's chosen location.

4/ Reverse logistics:

E-commerce delivery also includes an important component of reverse logistics, where goods are sent back from the customer to the e-commerce merchant. The number of returns purchased over the Internet has increased significantly in recent years. Most common reasons are technical defects, delivery delays, incorrect orders and shipping damage.

For e-buyers, the biggest concern is shipping. In the case of returns, shipping must be paid twice, when the goods are sent to the customer and when the customer returns them. The current trend is to give customers a return option "up front". A return label is sent with the item ordered (or via email) with all necessary information. The sender is responsible for all costs of returning the item. Another trend in reverse logistics is return exchange. The courier picks up the package from the customer and delivers the replacement at the same time.

2.1.3. Logistics Service Providers: (LSP / LP)

We can see that the complexity of logistics processes has increased significantly in recent years. Application of various software and hardware, shipping management, and specialized tracking systems are required to increase efficiency in performing e-commerce functions. However, for many companies, these investments are too expensive to make internally, which is why they are helping to create industry-specific companies or Logistic Service Providers (LSPs). Collaboration of LSPs with e-traders can occur at various levels,

from employing transportation or warehousing services to providing a complete solution for a company's logistics activities.[1]

Being supported by well-known parcel service operator is a kind of guarantee for quick delivery, good shipping service, and may help to gain more customers abroad.
Using this kind of solution enables faster delivery and lower shipping price

2.2. Reverse logistics RL, a key process in e-trade

Reverse logistics (or the closed loop supply chain in some definitions) is one of the processes of traditional supply chain, and with the rapid growth of technologies and e-commerce, it is become even more important, to understand and clarify the picture of this importance, it is necessary to define reverse logistics, in traditional and e-business worlds.

2.2.1. Definitions of reverse logistics

One of the first developed definitions of reverse logistics is that one of Murphy and Poist, they defined RL as: "*The movement of goods from a consumer towards a producer in a channel of distribution*"[2]

But in cooperation with the Council of Logistics Management, Rogers has developed a new and more complex definition: *"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 origin for the purpose of recapturing value or proper disposal"*

In e-commerce, when consumers are not satisfied with the goods and return occurs, the goods flow from consumers to e-trader is defined as 'reverse logistics'. [3]

In the B2C e-commerce model, the definition of reverse logistics given by American Reverse Logistics Executive Committee: to retrieve the value of the product or make it handled properly, the process of moving the product from the consumer to the source.

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[1] SILVIA (Maria.G) & DULCE (Filha.M), *Supply chain: the role of logistics service providers*, August, 2022, P23.

[2] Cited in: Murphy and Poist, 1989

[3] LI (Wei), Ma (Z), and LI (N), *Design of reverse logistics system for B2C e-commerce based on management logic of internet of things*, Int. J. Shipping and Transport Logistics, 2021, vol. 13, No. 5, P.485.

Reverse logistics is that the product trading online is returned to the seller or manufacturer due to their own problems or consumers' dissatisfaction. [1]

From the above definitions, it is clear that reverse logistics is essentially the movement of materials from the customer side (down the supply chain) to the manufacturer and supplier side (up the supply chain).

2.2.2. Differences between traditional logistics and reverse logistics

Understanding reverse logistics process requires understanding the differences between normal logistics flow and reverse logistics flow.

There are many differences between RL and traditional logistics, which developed actually with the emergence of e-commerce, these dissimilarities are adapted from Rogers et al. (2001). The most significant of them can be summarised in the following table:

Table 2: Reverse logistics VS Traditional logistics

Aspects	Traditional logistics	Reverse logistics
Previsions	Fairly simple	More difficult
Distribution points	One to many	Many to one
Products quality	Regular	Irregular
Products packaging	Uniform	Non-uniform
Price	Standard	Depends on several factors
Distribution costs	Easily recognisable	Hard to identify
Inventory management	Consistent	Incoherent
Marketing methods	Well-known	Complicated
Process visibility	More clear and transparent	Less transparent
Destination	Defined	Undefined

Source: Adapted from: Serge and Diane, *Logistique inverse revue de littérature*, 2003.

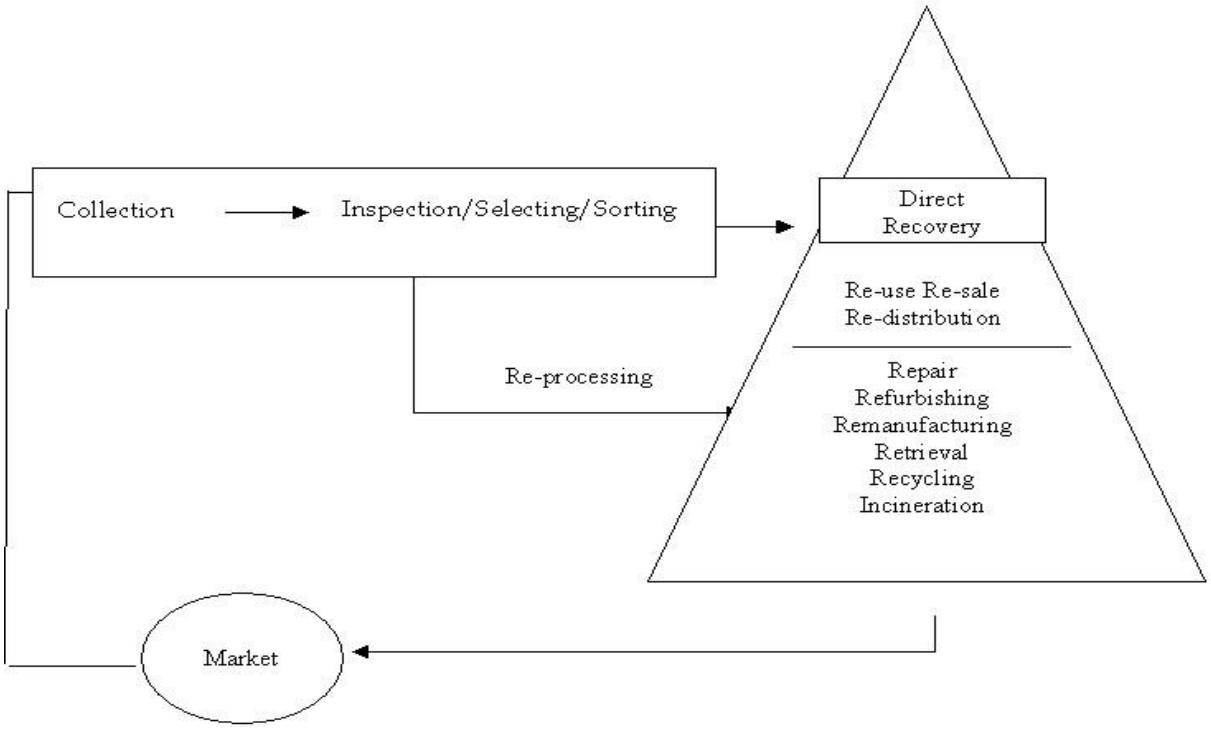
[1] LI (Wei) and LI (N), *The Analysis of Return Reverse Logistics Management Strategy Based on B2C electronic Commerce*, International Conference on ESSAEME, 2015, P.757

One of the first differences mentioned is that it is more difficult to predict returns because they are random. Also, distribution is no longer from one point to many but rather the other way around. Another distinction is the lack of uniformity in the quality and packaging of returns. Often the layout options are not well-defined. Pricing is even more complex as it depends on several factors. There is also a problem of perception regarding the required speed of processing. Here it is not considered a priority. Distribution costs are harder to identify. Inventory management is particularly complex. From a marketing point of view, it is more complex to resell returned products. Finally, the visibility of the process is less transparent.[1]

2.2.3. Reverse logistics process and components

Reverse logistics starts at the end user and works its way back through the supply chain to the retailer, or from the retailer to the manufacturer. Reverse logistics also includes processes such as recycling, remanufacturing, and reselling where the end user is responsible for the final disposal of the product. Figure No.5 presents the RL process adopted by Brito and Dekker (2002).

Figure 5: Reverse Logistics Process



Source: De (Brito), P (Marisa), and R (Dekker), *a framework for reverse logistics*, Springer Berlin Heidelberg, 2004, P.14.

[1] SERGE (Lambert) and DIANE (Riopel), *Logistique inverse revue de littérature*, October, 2003, P.06

The process of reverse logistics, according to "Brito and Dekker", is composed of 4 main parts: collection, Inspection/sorting/selection, direct recovery or re-processing, and redistribution. This model presents the different solutions for returned goods. It is considered by many logistics experts as a complete model for both e-businesses and traditional companies.

The explanation of its four stages is so substantial: [1]

- Collection: this first point represents the operation of bringing goods from the customer to the recovery point. It includes the transportation of returns to the place of processing.
- Inspection/sorting and selection: at this step, the returned products get inspected, selected, and sorted. The final decision depends on the quality of the product and the recovery options.
- Direct recovery or Re-processing: Direct recuperation incorporates re-use, re-deal, and rearrangement. Reprocessing incorporates recuperation choices like fixing, restoring, remanufacturing recovery, reusing, and incineration.

2.3. Characteristics of Reverse Logistics

According to Wang & al (2013)[2], reverse logistics characteristics can be summarised as below.

- Uncertainties:

Returns are difficult to predict and calculate due to partial uncertainties regarding: the nature, quantity, generation time, and distribution of reverse logistics.

- High cost of treatment:

Economies of scale in storage and transportation are not available due to random and sporadic product movements as the source of refunds and exchanges is uncertain.

- Complexity:

[1] CHRISTIAN (Nilsen.A) and JOSTEIN (Istad), *Reverse logistics in e-commerce: A multiple-case study of four e-commerce companies*, master thesis, Molde University college, Norway, 2019, P.17-P.18

[2] Wang et al, *Research on management strategies of reverse logistics in e-commerce environment*, Journal of System and Management Sciences Vol. 3, China, 2013, P.46.

The return or exchange process is full of complexities, different forms of processing, and complex structures, but each stage of the process is influenced by the results of the reverse logistics plan.

- Low speed:

Delays usually occur in aspects such as slow logistics accumulation and processing

Delays usually occur in aspects such as slow logistics accumulation and processing complexity. The entire process involves tedious and time-consuming human testing, evaluation, classification, processing, etc.

As seen, reverse logistics is a complex process. It is a non-negligible e-commerce link that represents the company's credibility and image for the end customers. As e-commerce advances, reverse logistics will become a major competitive advantage for e-businesses.

Researching reverse logistics, defining reverse logistics strategies, and improving reverse logistics systems are beneficial to the healthy development of e-business. It is a system that helps or hinders the creation of an edge over competitors, and e-retailers must do it effectively.

All this can be achieved if management has the right attitude toward returns.

Section 3: Reverse logistics management

Returns management is part of the supply chain and a crucial process.

Today's e-retailers should see customer returns as a competitive advantage, not just a cost driver. Knowing the nature, reason, type, and process of e-commerce returns is the first step to managing logistics functions and monitoring business performance.

This section presents the theoretical framework of the basics of return management and also; provides the relationship between RL and RM, the definition of RM, the reasons for backflow, and the different processes of reverse e-logistics.

3.1.Reverse logistics components

The reverse logistics consists of several components, including return management.

In this title, the most famous parts will be defined.

- Return management: Reverse logistics requires certain specific supply chain management and return management processes that ensure optimal reverse logistics through activities such as control and avoidance.[1]

  Returns are another term used to describe the backward flow of supply chain management. The SCC defined them as: *"Processes associated with returning or receiving returned products for any reasons. These processes extend into post-delivery customer support"*[2]

  Organizations must evaluate all potential returns and choose the best returns process.

- Return policy and procedure (RPP): A company's RPP outlines the guidelines for how returns are circulated with consumers. These guidelines ought to be easy to understand and maintained. Employees should follow them as well. Additionally, it strengthens customer and company trust.

- Remanufacturing or refurbishment: They are additional aspects of reverse logistics management. These processes involve product restoration, rebuilding, and reworking.

[1] TOUZRI Yanis Aghiles, *Évaluation satisfaction client de l'entreprise suite à l'application d'une stratégie de logistique inverse*, Master thesis, EHEC, Algeria, P.40

[2] *Supply Chain operations reference model: Overview of SCOR version 5.0*, Pittsburgh PA: Supply chain council, 2001, P09

Cannibalization and dismantling of parts are the practices of businesses recovering interchangeable, reusable components or materials from other goods. Reconditioning comprises separating, cleaning, and reattaching goods.

- Packaging management: This type of RL leads to minimize the environmental impact of packaging wastes, by reusing them.

- Unsold goods: It usually takes place from retailers to makers or wholesalers, as a result of negative sales, stock degradation, or delivery rejection.

- End-of-life (EOL): The unusable products may no longer meet a customer's needs or be replaced by a newer, better version, but it can be recycled to produce another types of products.

- Delivery failure: It is generally used in electronic commerce operations when the carriers didn't find the customer's address home, or because of the absence of it. So, drivers return products to their point of origin. While the problem is corrected, the product will be resent to the customer.

- Rentals and leasing: In case of an expired piece of equipment, the owner can re-change or recycle it.

- Repairs and maintenance: In some product agreements, customers and businesses promise to keep or fix equipment if problems occur and then resell the repaired goods to another customer. [1]

3.2.Drivers and reasons of return management (RM)

Customers are the first driver at the outset of any supply chain and forward logistics process because they generate demand.

On the other hand, the consumer has a significant effect; he is responsible for most returns.

According to Brito and Dekker[1], there are three primary reasons for returns: *"Because companies can profit from it, because they have to, and because they 'feel' socially motivated to do it."* These aspects are described as follows: [2]

[1] https://www.netsuite.com/portal/resource/articles/inventory-management/reverse-logistics.shtml (14/01/2021), Abby Jenkins.

A/ Economic reasons:

"Because they can profit from it", it is an accurate description of RL's emphasis on money possibilities, but the issue is: how can RL be a beneficial process?

In actuality, it relies on the particular causes for the return, such as whether the return is for recycling, re-manufacturing, or re-furbishing. Companies (both conventional and e-traders) will benefit by reducing raw material consumption, reducing the expense of waste and trash, and growing its worth. These variables may not provide an instant benefit to businesses (including handmade e-traders), but they will provide indirect benefits. The indirect benefits include market protection by stopping rivals from obtaining their technology, a better green image, improved customer/supplier relations, and the ability to foresee or avoid legislation.

B/ Legal reasons (or legislation):

The driver "legislation" alludes to the jurisdiction that a business must follow when returning goods or recovering them.

The regulations have also been created to safeguard the environment and to encourage businesses to be environmentally conscious.

Legislation, as a cause of reverse transportation, has an impact on e-commerce companies' return policies.

For example in the Algerian law: *"If an item is delivered that does not correspond to the purchase or if the product is defective, the electronic provider must accept it back, the consumer must return the products in their original packaging within four (4) working days of the date of effective delivery, showing the cause for the refusal, with the electronic provider covering the costs"* [3]

Because of these rules, businesses are unsure how many returns they will receive after selling a product. These potential returns have a detrimental impact on the business because they may result in a loss of earnings. In the other side this legislation is critical for ensuring rights.

C/ Corporate citizenship:

Refers to the principles or beliefs that a corporation develops to take on more societal obligations, taking environmental challenges carefully, as well as employee and customer rights, are two of the most frequent instances of CSR.

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[1] Cited in: Brito and Dekke, 2003

[2] CHRISTIAN (Nilsen.A) and JOSTEIN (Istad) , Op.Cit, P.11-P.13

[3] Art 23, regulation No. 18-05 of 10 May 2018 on electronic commerce in Algeria.

Remark:

Recently, return management specialists have added another reason: Commercial reasons.

It is much more relevant to e-commerce and has a goal to increase customer satisfaction from 2 main problems: technical problems and commercial returns.

The following table (Table 03) gives examples of each type of return:

Table 3: return justifications.

Reasons	Examples
Economic	Packaging materials, reusable containers, and production waste.
Legal	End-of-life products, packaging recycling.
Corporate citizenship	Environmentally conscious investments, Improving labour policies, Sustainability.
Commercial	Technical problems (after sales service), repair, recall campaign, shipping errors.

Source: Serge (Lambert), *Ingénierie des processus de la logistique inverse*, D. thesis, Montreal Polytechnic, Canada, 2005, P.10.

3.3.Return e-logistics management

3.3.1. Definition

Online merchants fight not only with their goods and prices, but also with a wide range of services such as accessibility, prompt shipping, and efficient returns.

Return management RM is the act of managing all the reverse logistics flow, from the start of the return by the customer, to the end cycle of it. It is a process of both e-commerce and traditional retail, works with end consumers who want to return their purchases, under the after-sales services supervision. It involves engaging with consumers, receiving returned goods, and restocking them as returned stock.[1]

Returns management entails measures, policies, and processes aimed at increasing sales or lowering the cost or number of product returns at all phases of the customer-firm exchange process: before purchase, during purchase and order completion, and after purchase.

[1] https://www.extensiv.com/blog/order-management/returns (10/03/2020)

Remark:

There is no universal meaning of return management; many logisticians define it as a supply chain procedure that involves reverse logistics, returns, gatekeeping, and avoidance. Many other experts agree that reverse logistics is a component of it and one of its essential processes. However, others affirm that there is no distinction between them. Recognizing that, in all instances, reverse logistics and return management are the most critical processes in e-commerce in terms of accuracy, due to their connections with retail marketing, logistics, and financial functions.

3.3.2. Key factors affecting the return decision in B2C model

In the B2C e-commerce model, companies present goods to customers through photos, videos, texts, and more. However, buyers cannot directly assess the actual state of goods or determine whether information about goods is accurate. According to "XIAOJUAN"[1], in this situation, the seller has a complete guard and information; consumers are unfortunately at a loss with no certainty, which is one of the e-commerce disadvantages.

Consumers return due to significant differences between visual product information with the company description and its reality. There are additional factors. Sellers, for example, mislead customers by selling counterfeits purchasing, or when the third-party logistics and e-retailers are segregated, and so on. Also, online Entrepreneurship concurrence with the growth of e-commerce is becoming increasingly fierce. Businesses want to draw more customers and maximize earnings, so they initiate various special return activities, such as "no reason to return," "dissatisfaction and return," and so on. Although it may decrease customer concerns, it has resulted in return operations.[2] Some companies have poor return awareness and procedures. Because of a significant number of online orders, errors made by internet retailers result in incorrect dispatch, the return as a consequence.

As a consequence of different online promos or price reductions, especially in events like Black Friday, some impulsive customers may purchase unnecessary products; they have irrational and incoherent behaviour. Consumer preferences modify quickly, causing returns. Some customers like the goods when they decide upon them, but they lose interest when

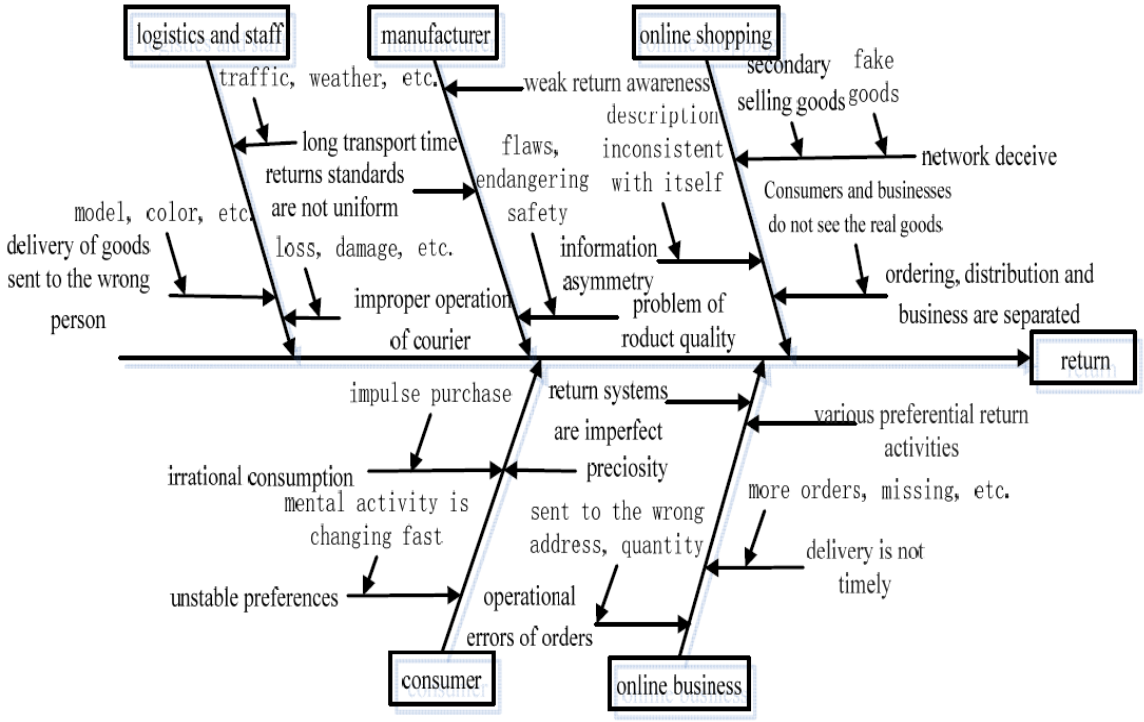
[1] XIAOJUAN (Chen), *B2C ecommerce logistics distribution mode to explore a Jingdong Mall logistics distribution mode*, Science and Technology Information, 2013, PP.18-19

[2] XIA (Cai), *The Study of Return Reverse Logistics in B2C E-commerce Transactions*, Logistics Engineering and Management. Vol. 34, 2012, P. 106.

receiving them because of many causes. In contradiction, some customers are overly careful when it comes to online purchasing.[1]

LSPs play an unconditional role in the shipping operation, errors, false deliveries, delays, harmer products, or even loss of the parcel because of the improper courier's work. The travel duration is excessive due to weather, traffic, and other factors. [2]

Figure 6: The Fishbone Diagram of the return factors in B2C e-commerce model



Source: Guogang and Li, *the Analysis of Return Reverse Logistics Management Strategy Based on B2C Electronic Commerce*, ESSAEME, China, 12-13 December 2015, P. 758.

3.3.3. Suggested framework of the return management process in e-commerce

There is no unified process for all returns because it relies on nature, reason, and business policies. However, there are measures to handle returns in online retailing.

Starting with collecting after detection is a sensible move for the client. It is a matter of determining whether or not the client is responsible for the refund. Even though this incurs substantial costs for the business, customer satisfaction is critical, and a free return will boost

[1] HUA (Zhang), *The study and countermeasures of return logistics e-commerce transaction*, Logistics Technology, 2014, P. 34.

[2] Guogang and Li, *the Analysis of Return Reverse Logistics Management Strategy Based on B2C Electronic Commerce*, ESSAEME, China, 12-13 December 2015, P. 758.

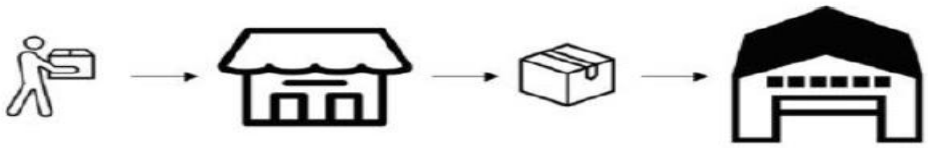
it and even improve customer loyalty. As a result, the vendor can give the customer the option of picking up the product he desires to return at his house.[1] This step, while very convenient for the customer, is costly for the business.

Figure 7: Management of returns by collection from the customer's home

Source: DE BARY (M) & MORCEAU (Tho), *La supply chain 60 outils pour améliorer ses pratiques*, January 2017, Paris, P.222.

When a consumer returns a product to the seller, he can go immediately to the store (in the case of a brick-and-mortar company) or a relay point such as pick-up sites or stop desks of logistics providers. The client leaves the package at a convenient pick-up location near his house.

Figure 8: Management of returns by depositing the parcel in a relay point by the customer

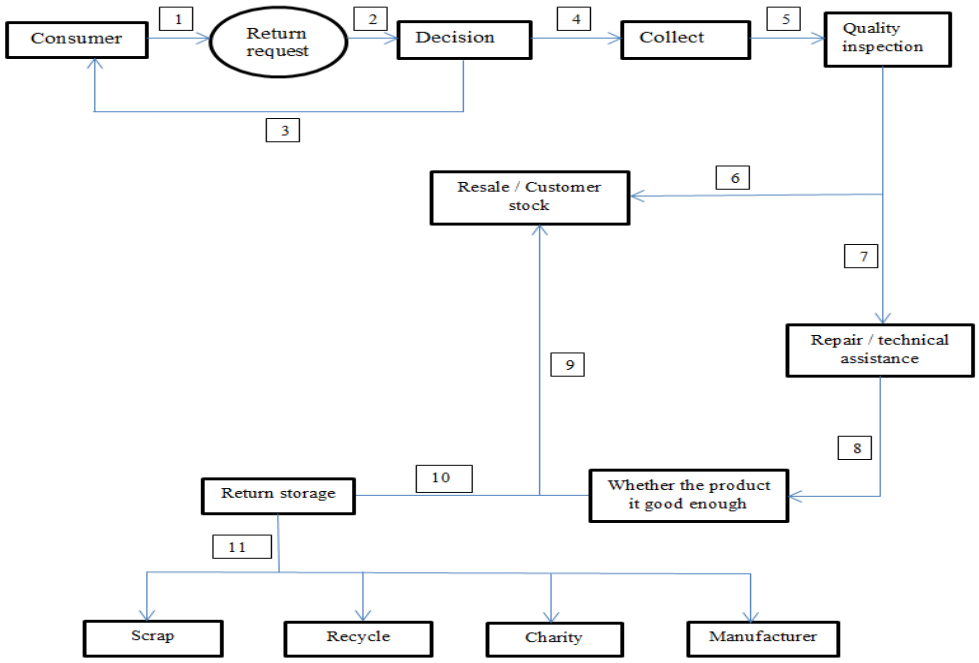


Source: DE BARY (M) & MORCEAU (Tho), *La supply chain 60 outils pour améliorer ses pratiques*, January 2017, Paris, P.222.

Anticipating the return by asking the customer to fill out the details on the returned goods can facilitate its processing. They can, for example, enter the merchandise reference number and the cause for the return, or announce the return on the Internet. The client may print a return label or receive it in the package received. This label can be affixed to the return box to help with handling. The merchandise must then be evaluated to determine its destiny. These pieces of information enable the business to plan for the product's return and anticipate the treatment.

Figure 9: Suggested Flux-gram of the return process in an internet retailing

[1] DE BARY (M) & MORCEAU (Tho), *La supply chain 60 outils pour améliorer ses pratiques*, January 2017, Paris, P.222



Source: carried out by the student from Martin (H), Sören (R), Lin (X), *Management summary: Return management systems within leisurewear at Strålfors,* Linnaeus University, Sweden, 2014.

The clients solicit the request for the return by giving their reasons. Once authorized by the after-sales service, the LPS collect the product and take it to the distribution center or the drop desk. Upon entry and before storage in the inventory, a simple verification must be done through which the product will be classified as intact for resale or damaged for reparation capability. The intact product is ready for resale or re-stock in the consumer inventory. And the damaged one will be stored in a separate area for repair and checking of quality. If the good is not intact, it redirects to the return storage, to prepare for the agreed-upon operation**.**

Figure legend:

1. Apply for return demand.
2. Process the application.
3. In case of a refusal.
4. In case of acceptance.
5. From the LSP to the vendor.
6. Good quality of product and package.
7. The product in bad quality.
8. Test the possibility of repair.
9. Product repaired and ready for resale.
10. Failed reparation / defect product.
11. Recirculate the product / End-cycle.

Returns will continue to be a part of businesses, specifically in e-commerce, and return management is strategically important.

However, most online retailers suffer from poor design and implementation of return management programs.

Return managers should create a profound understanding of both customer expectations and reverse flows and develop suitable delivery and returns processes.

Conclusion:

The supply chain is both a very rich and a very complex science. It is rich because it calls upon several disciplines that try to explain the sequence of several processes from different angles and complex because it requires the consideration of a battery of variables that are both interdependent and indispensable.

Reverse Logistics is the e-commerce link which cannot be ignored because, for the end customer, it represents the credibility and image of business.

With the further development of e-commerce, reverse logistics will become a huge competitive advantage for e-commerce. Researching reverse logistics, setting reverse logistics strategy, and improving the reverse logistics system; will be beneficial for the healthy development of e-business.

Algerian e-traders need to seriously study the phenomenon of reverse logistics, pay attention to the value of reverse logistics, and build an e-commerce reverse logistics system.

Chapter 2:

Gatekeeping in returns management of a distance selling setting

Introduction:

Product returns are both a challenge and an opportunity for most retailers. These returns eat into retailers' profit margins, since they represent lost sales and substantially increase costs within retailer supply chains.

Returns management constitutes a set of tools that, whether directly or indirectly, help lessen the negative effect of product returns -specifically, online retail returns- on profitability. Returns management involves measures, policies, and processes designed to increase sales or lower the cost or quantity of product returns.

This chapter will be devoted to returning management strategies presentation, the definitions and different practices and applications of gatekeeping, and their theoretical impact on reverse logistics performance.

The chapter will start by presenting tools of reverse logistics in the first section, then move on to the study of logistics performance according to different scientific approaches and their impact on company performance in the second section.

Section 1: Gatekeeping in returns management of a distance selling setting

Returns are a significant issue for e-commerce companies, particularly those offering commodities that require actual examination and fitting. Customer expectations, product quality, product details, shipping time, return policy and other variables all contribute to returns.

E-commerce businesses can decrease returns by implementing Gatekeeping and other strategies at various phases of the consumer journey, including before, during, and after the purchase. However, before implementing these strategies, it is essential to identify them, their methods, and execution locations, alongside the challenges and types.

In the first step, this section will dive into the gatekeeping strategy, followed by other e-commerce strategies for managing returns.

1.1.Gatekeeping to manage reverse logistics returns

Minimizing the return rates argue to be desirable for retailers; this means that they do not have to accept all returns in reverse logistics. But without an appropriate placement of gatekeeping in the return management process, there is no way to protect against unwanted backflow.

1.1.1. Overview of gatekeeping

Rogers and Tibben (1999) define the gatekeeping as follow: *"The gatekeeping activity involves return screening requests before accepting any return and should be applied at the entry point to the returns flow"*

It includes examining return requests and checking returned goods to lower the return rate by ensuring that only authorized and approved returns move into the reverse logistics flow and then guide to the correct point. A decline in return rates is generally accompanied with reduced disposition costs (costs of new packaging, reconditioning, and product value depreciation and waste disposal.) [1]

[1] ASDECKER (Björn), *Returning mail-order goods: analysing the relationship between the rate of returns and the associated costs, Logistics Research* volume 8, 2015, P.8.

The gate could be exemplified as a valve opening for "wanted" returns and closing for "unwanted" returns. [1]

Making sure to fix gatekeeping improves return schedules, reduces costs, and boosts client satisfaction and as a consequence, efficacy and efficiency have improved. Typically used at the entry area, but can be applied at numerous places on the return flow.

In distance sales, gatekeeping tasks are critical because the goods cannot be inspected until they are received and opened. And the longer it takes for a choice to be made about how to dispose of a returned product, the lesser the anticipated market value of the returned product when it is restored into the usual flow of products, which reduces the perceived added value of delayed returns. [2] Issues in gatekeeping can lead to tensions between clients and vendors. As a result, effective gatekeeping often requires other supply chain members.

Logistics specialists affirm that gatekeeping is more challenging in online retailing because of the specific features of e-commerce. In other hand online retailers with high return rates, mostly, benefit from gatekeeping activities.

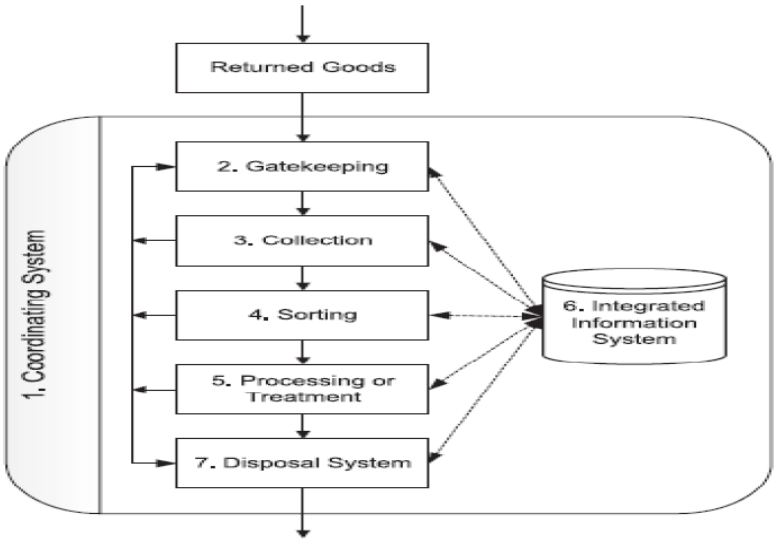
1.1.2. The place of the gatekeeping in the RL process

Experts try hard to identify a better emplacement of the gatekeeping in the return management process; in reality, there are a lot of propositions, but the most logical is the entry point emplacement, because of the level of sensibility of the first step in the process.

Figure 10: Reverse Logistics System Elements

[1] HJORT (K) and others, *Typology of practices for managing consumer returns in internet retailing,* International Journal of Physical Distribution & Logistics Management, Vol. 49 No. 7, 2019, PP. 767-790.

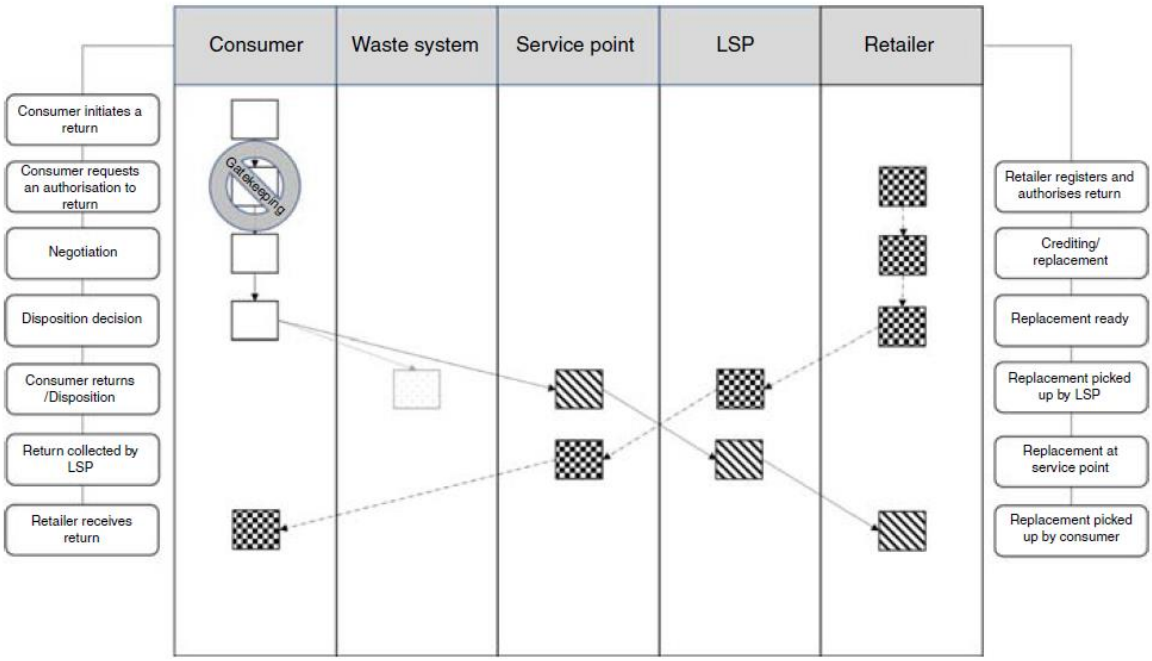
[2] MOLLENKOPF (D) and others, *the returns management process in supply chain strategy*, International Journal of Physical Distribution & Logistics Management, 2007, P.579.



Source: Lambert, Riopel and Kader, *A reverse logistics decision conceptual framework,* 2011, P.5.

Figure No 10 depicts gatekeeping as the second part after the control system, when a customer declares and calls for a return. Companies at this procedure; pre-filter which products are permitted to join the RL system and which might reject due to non-functioning.

Figure 11: Returns process with return merchandise authorisation (RMA)



Source: Hjort (K) and others, Op.Cit, P.785.

This figure above shows all steps and procedures from the client side and the retailer side, beginning with initiating the return and requesting authorization which is in parallel with the registration and acceptance of the vendor, gatekeeping in this figure is presented to be in the first step of the return process after.

1.1.3. Categories of gatekeeping practices

Customer communication, which is closely linked to the applied returns information system, is at the heart of gatekeeping. Case studies demonstrate that retailers position the first point of interaction differently and, as a result, adopt a variety of practices. These practices are divided into four interconnected categories: gatekeeping points, information carriers, communication channels, and outcomes. The table below clarifies the different categories of gatekeeping and their practices:

Table 4: Four categories of gatekeeping practices

Categories	Gatekeeping practices
Gatekeeping points	Customer, warehouse, and centralised return centre.
Information carriers	Return merchandise authorisation, prepaid returns, and note with delivery.
Communication channels	Digital return registration, customer service, and face to face.
Outcomes from gatekeeping	Customer disposes goods, crediting of returns, deliver / exchange of goods, home visit, negotiation, and quality control.

Source: Hjort (K) and others, Op.Cit, P.774.

A study of 12 online retailers in Sweden shows that several of them practice full gatekeeping at the customer point by using return merchandise authorization (RMA), that is, permission to return. This information system does not block consumers; it is more of an interaction to determine why the product is in return and how it will be processed. This means that online retailers deploy a gatekeeping activity of screening all the return information that the consumer specifies before the product is physically accepted in the physical flow. In other

words, retailers that gate keep at the point of the consumer can actively interact with the returnee and thus implement consistent practices to avoid unwanted consumer returns.

Usually, requests for returns are made by e-mail or phone call. While the decision-making process of customer service representatives will differ based on the cause for the return, the retailer explicitly notes practices such as pre-credits, where customers dispose of the item themselves, or the ability to receive the return upon new delivery. As a result, both customers and merchants will experience decreased shipping and processing costs.

The same experiment concludes that Bargaining with consumers is another intriguing practice of many merchants. For example, it may prevent returns by providing a special price on the products acquired. The use of home visits to fully understand the cause for the return and the state of the merchandise is another fascinating discovery. Then the e-retailer can determine how to manage the rest. [1]

1.1.4. Some ethical or legal issues of Gatekeeping strategy

There are some possible ethical or legal issues of Gatekeeping strategy that e-commerce businesses should be aware of and address before applying them. Here are some examples[2]:

- It may involve collecting, processing, or sharing the customer's data, such as purchase history, return behaviour, preferences, or feedback. It may also raise privacy concerns and require compliance with data protection regulations, such as regulation No18-07 in Algeria.
- It may entail affecting or manipulating consumer behaviours through offering incentives, providing feedback, or customer segmentation. It may pose ethical concerns about customers' autonomy, integrity, consent, and whether they are handled equitably and politely.
- It may involve consumers reporting or identifying suspected wrongdoing to legislators or authorities. It may pose ethical and legal concerns about gatekeepers' duty of secrecy, commitment, and care to their clients, not to mention whether they risk exposing themselves or their clients to liability or penalties.

[1] Hjort (K) and others, Op.Cit, P.775

[2] Bing Artificial Intelligence Chatter.

1.2.Typology of RM programs

There are three broad categories of returns management programs detailed in Table 5. A differentiator driving this classification is how retailers manage customer lifetime value (CLV) and return shipping costs. The type I program plans to reduce return costs by sacrificing increased client engagement and loyalty costs. The type II formula strikes a balance between these expense categories. And type III initiative aims to maximize CLV by lowering purchase and activation costs while incurring additional return costs. [1]

Table 5: Typology of RM programs

Program type	Program characteristics	Examples
Type I Customers experience returns as a costly and complicated process.	- Firms view returns as a cost of doing business that needs to be minimized. - Customers are discouraged from returning items by costs and hassle (charging various fees, complicated returns process, a policy with limited scope and refund possibilities).	Small online shops, specialty retailers.
Type II Customers experience returns as costly and/or complicated process when returning non-defective items	- The program seeks fairness by balancing customer experience with reducing the negative effect of returns. - Customers "at fault" for their returns are discouraged (via costs or hassle) from making them.	Amazon, Apple (post-2011), H&M, J.C Penney, L.L. Bean, Sears.
Type III Customers experience returns as a free and uncomplicated process	- Returns are viewed as an opportunity to increase customer satisfaction (by offering uncompromised service). - The company maintains a	Costco Wholesale, Nordstrom, Outfittery, Zalando, Zappos.

[1] FELIX (J.R), ARND (H), and David (S), *Returning Customers: The Hidden Strategic Opportunity of Returns Management*, California Management Review, 1–28, December, 2017, P.03.

	comprehensive database of consumer purchases and returns history, using these data for optimization purposes. - Requires an organization that is strongly interlinked across departments	

Source: Felix (J.R), Arnd (H), and David (S), *Returning Customers: The Hidden Strategic Opportunity of Returns Management*, California Management Review, 1–28, December, 2017, P.04.

1.3.Gatekeeping in the real e-commerce business, application and challenges

1.3.1. Steps to apply gatekeeping in e-commerce businesses

The main steps to implement the gatekeeping are[1]:

‣Identify the main factors that cause returns in the business, such as product quality, product information, delivery time, and return policy, using data analysis, customer feedback, or market research to do this.

‣ Evaluate the costs and benefits of returns for the business, such as return handling costs, customer satisfaction, customer loyalty, inventory management, and environmental impact, using financial analysis, customer surveys, or benchmarking.

‣ Select the most appropriate gatekeeping strategies for the business based on product type, customer segment, and market context, using best practices, case studies, or expert advice to do this.

‣ Implement the selected strategies in a way that is consistent with the business goals and values. The e-trader can use technology tools, staff training, or policy changes to do this.

‣ Monitor and evaluate the effectiveness of the implemented strategies in reducing returns and enhancing performance. The business can use key performance indicators (KPIs), feedback mechanisms, or audits to do this.

[1] https://www.edesk.com/blog/reducing-ecommerce-returns/ (1/02/2023)

1.3.2. Challenges or drawbacks of gatekeeping strategy

Before applying gatekeeping, e-commerce businesses should consider and address possible challenges or drawbacks of this strategy.

Gatekeeping may require additional resources, such as time, money, technology, or personnel, to implement and maintain. And it may not be effective for all types of products, customers, or markets, depending on their preferences, expectations, or behaviours.

Not taking care of customers can have unintended consequences, such as reducing customer satisfaction, trust, or loyalty if they are perceived as intrusive, manipulative, or restrictive. One of the biggest challenges is facing ethical or legal issues such as privacy concerns, data protection regulations, and consumer rights laws. [1]

1.4.Other strategies to manage reverse logistics and returns flow

The achievement of higher benefits for companies will be heavily affected by how to use current resources to decrease reverse logistics possibilities and increase managerial efficiency in an e-commerce setting.

Gatekeeping is one of RL's strategies, but it's not the only one; there're many other technics to manage returns flows:

‣ Avoidance activity: Returns avoidance activity refers to preventing returns from occurring and aims to find ways of minimizing return requests. User-friendliness and training customers in the proper operation and use of products are customer-centric ways to avoid returns. [2] Avoidance practices have been organized into six categories related to: sales, pre-purchase information, post-purchase information, customer behaviour, warehouse, product, and packaging.

Table 6: Categories of avoidance practices

Categories	Avoidance practices
Sales	Sell the right products to the right customers

[1] http://www.fordhamiplj.org/2022/05/16/e-commerce-platform-now-has-a-new-role-as-a-gatekeeper/ (*May 16, 2022)*

[2] KLAS (H), *Returns Avoidance and Gatekeeping to Enhance E-commerce Performance*, thesis for the Degree of Licentiate of Engineering, Sweden, 2010, P.29

Pre-purchase information	Adding product information, Additional photos, Product use information, Size guides and attributes.
Post-purchase information	Feedback from customer, negotiating, double-checks order.
Customer behaviour	Analyse return pattern, Contact customer,
Warehouse	Improve picking accuracy.
Product and packaging	Product installation, Product quality control, Protect primary packaging.

Source: Hjort (K) and others, Op.Cit, P.777.

‣ Zero return policy for some commodities: Many network marketing businesses offer products with a low financial value or goods that are only used once. If they implement return policies, they will suffer greatly; at this time, a zero return is possible. [1]

‣ SIX SIGMA: It is a method that provides organizations tools to improve the capability of their business processes, it has several parts, and one of them is DMAIC method. DMAIC is an acronym that stands for Define, Measure, Analyse, Improve, and Control.

It represents the five phases that make up the process:

a/ Define the problem,

b/ Measure process performance,

c/ Analyse the process,

d/ Improve process performance,

e/ Control the improved process and plan.[2]

The essence of implementing return management is to gate keep and avoids returns rather than optimize the physical reverse flow. Retailers that gate keep at the point of the

[1] JIAN (X) and YUE (J), *Study of Reverse Logistics in the E-commerce Environment*, IBR, No.01, January, 2009, P.03

[2] https://asq.org/quality-resources/dmaic

customer can actively interact with the returnee and thus implement consistent practices to avoid unwanted customer returns.

Gatekeeping enables the control and reduction of returns without damaging customer service.

Section 02: Returned goods strategies and the basic tools of reverse logistics

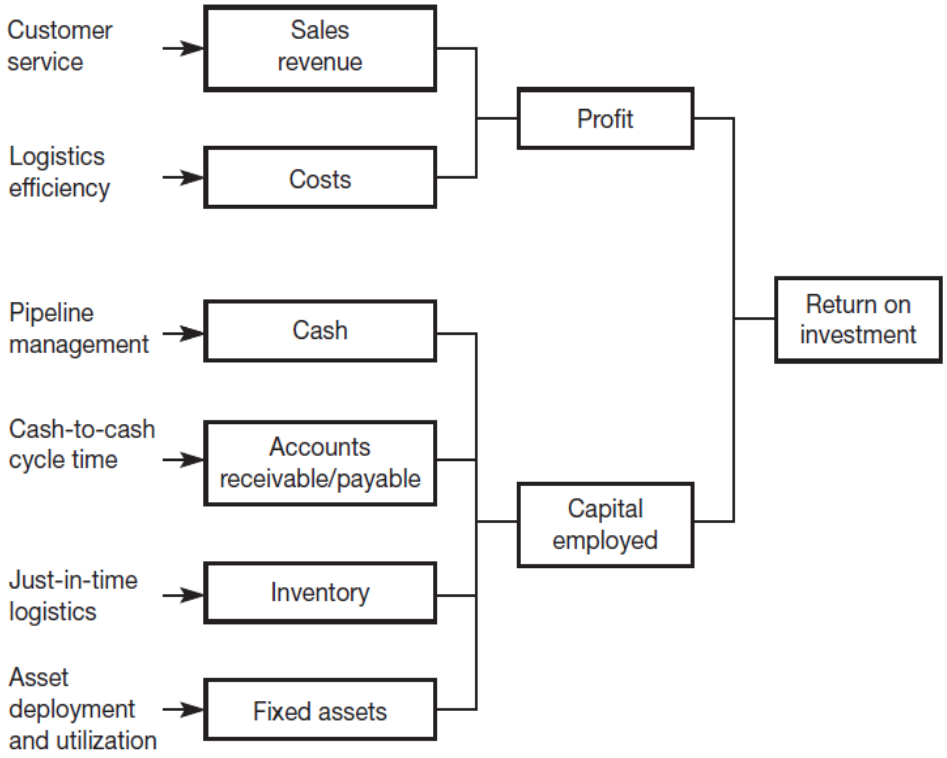
In business, logistics success turns into increased productivity, reduced costs, higher production rates, better inventory management, wiser storage space utilization, enhanced vendor and client satisfaction, and a better experience for consumers. This section highlights the effect of effective logistics management in general on company performance, the various metrics of return performance, and the costs and fees associated with it.

2.1.The role of logistics in the performance of companies

Managing the various important logistics activities as an integrated system should lead to the maximisation of customer service as well as lowest possible cost.

Figure No.11 depicts the main factors influencing ROI and the possibility for growth through better logistics management.

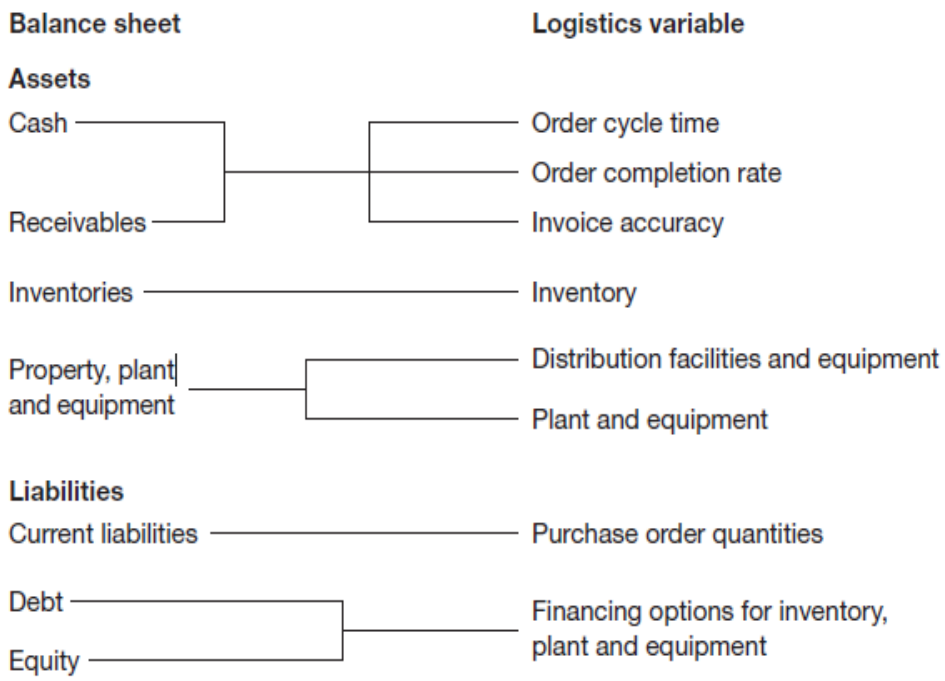
Figure 12: Logistics impact on return on investment



Source: Martin (C), Op.Cit, P.85

In addition to its influence on corporate revenue, logistics can have a variety of effects on the company's balance sheet. Figure No.12 summarizes the main balance sheet elements and provides connections to each of the pertinent logistics management components.

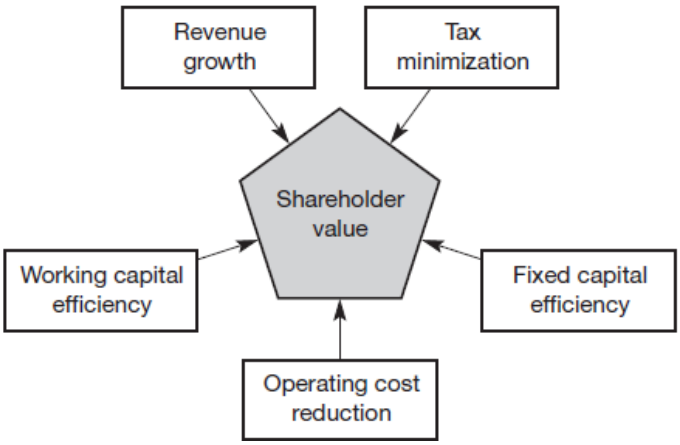
Figure 13: Logistics management and the balance sheet



Source: Martin (C), Op.Cit, P.86

By reducing costs in logistics management, the shareholders' value can be impacted in a substantial way. The critical linkage here is that operating cost reduction is one the shareholders' value drivers.

Figure 14: Drivers of shareholder's value



Source: Martin (C), Op.Cit, P.90

As a component of logistics, reverse logistics has a significant impact on those factors by lowering costs, boosting competitiveness, and increasing customer happiness, all of which are linked to ROI, balance sheet, and stockholder value.

2.2.Returns performance measures

2.2.1. Returns performance measures of the SCOR mode

The Supply-Chain Council is an independent group dedicated to the development and implementation of the supply chain.

The Supply Chain Operations Reference (SCOR) is built on a static model that specifies the supply structure as well as supply chain measurements and scorecards for evaluating performance and identifying areas for growth.

The SCOR 5.0 model, which was released in 2001, examines numerous success measures in connection to various aspects. The returns section contains four of the five dimensions: reaction time, flexibility, expense, and asset utilization effectiveness. The component of dependability is missing.

Table No.07 lists some of performance metrics from the SCOR 5.0 model which are pertinent to reverse logistics.

Table 7: Performance metrics of RL from the SCOR 5.0 model

Measures	Dimension
Speed of product return	reaction time
Costs of returning goods	Expense
Returns costs	Expense
Costs of authorising the return of products	Expense
MRO Cost (maintenance, repair, and operation)	Expense
Value of returned goods	Assets
Use of assets for return	Assets

Number of days of returned goods procurement	Assets
Number of days in stock	Assets
Costs of managing and planning returns as a percentage of "Costs of returning goods"	Expense
The ease of rapidly increasing capacity	Flexibility

Source: Carried out by the student from https://scor.ascm.org/processes/return/R1

2.2.2. Reverse logistics performance measures according to Gunasekaran framework

Gunasekaran[1] suggests three tiers of logistics success indicators: strategic, tactical, and operational. The cause for his research is a lack of balance in the method and a lack of distinction between the three tiers of measurement. Table 08 shows the performance metrics by level concerned with three players in the logistics system: suppliers, the business, and consumers.

Table 8: Gunasekaran's Reverse logistics performance measures

level	Measures
Strategic	Financial investment in reverse logistics
	Service level perceived by the customer
	ROI rate
	cycle time to process a return
Tactical	Disposal and guarantee costs
	The efficiency of the production (Procurement) plan

[1] GUNASEKARAN (A), *A framework for supply chain performance measurement*, international journal of production economics, 2001, PP.71-87

	Methods of entering return requests
Operational	Hourly cost per operation
	Return cost
	Stock level
	Quality of returned goods

Source: Gunasekaran, Patel and Tirtiroglu, *Performance Measures and Metrics in a Supply Chain Environment*, International Journal of Operations & Production Management, 2001, PP.71-87.

2.3.Factors impacting Reverse E-Logistics performance

Several authors in the REL (Reverse E-Logistics) area established multiple variables as the most significant influencing REL performance. Management, corporate structure and culture, information technology, customer service/satisfaction, return policy and procedures/guarantee, workers, and infrastructure are among these variables.[1]

- Management: The six major components of Reverse e-Logistics skills are logistics information, management, close-loop, supply chain integration and coordination, conformity, and institutional rewards. Management is the most important of these factors in terms of influencing REL's performance. Management's primary challenges are a lack of dedication, strategic planning, expertise, knowledge, and reluctance to change, even though such change may be beneficial in improving REL performance.
- IT and Technology: Technological development can greatly improve REL performance because it reduces the time to respond and improves expertise in handling REL processes more effectively. Because of the rapid advancement of technology and thus e-commerce, B2C businesses are taking chances in that field, which is favourably influencing the performance of REL activities. The most significant variables influencing successful REL implementation are a lack of IT systems, the technology used, and infrastructure.

[1] VIDA (D) and Mohammad (A), *PERFORMANCE OF REVERSE LOGISTICS IN ELECTRONIC COMMERCE: A CASE STUDY FROM LEBANON AND SYRIA*, Vilnius Gediminas Technical University, May, 2021, PP.264-268

- Return policy and procedures/guarantee: Recognizing the significance of return policy on REL success is critical, as the two are favourably linked. Furthermore, the more reassuring and liberal the return policy, the more profits will be obtained.
- Workers: Some companies that manufacture electronic goods have poor REL because of inexperienced workers. Employees in customer service departments who are in charge of administering REL activities such as processing returned goods are critical to customer happiness and the success of REL systems.

2.4. The key performance indicators (KPIs) for measuring the effectiveness of gatekeeping in e-commerce

It can be done by looking at different metrics that reflect how well the gatekeeping strategies are working to reduce returns and increase customer satisfaction. Some possible metrics are:

- ✓ Return rate: This is the percentage of orders that are returned by customers. A lower return rate means that the gatekeeping efforts are successful in preventing unwanted or unnecessary returns.
- ✓ Conversion rate: The proportion of site users who buy something. A better conversion rate indicates that gatekeeping efforts effectively offer accurate and pertinent product information, reviews, evaluations, and personalization options that entice consumers to purchase.
- ✓ Customer retention rate: The proportion of consumers who make recurrent transactions within a specific time frame. A better customer retention rate indicates that the gatekeeping efforts have been effective in instilling confidence and devotion in customers and that they are pleased with their buy.
- ✓ Customer lifetime value (CLV): The overall quantity of income a customer produces throughout their association with your company. A greater CLV indicates that the gatekeeping efforts have effectively boosted client loyalty, frequency, and lifetime value. [1]
- ✓ Return processing time: This is the average period it takes to receive, examine, organize, and dispose of a returned product. It is a metric for organizational effectiveness and speed. A quick return handling period can lower inventory holding

[1] https://www.shopify.com/blog/basic-ecommerce-metrics (10 March 2022)

costs, improve asset usage, and boost customer satisfaction. A lengthy return handling time can cause product obsolescence, reduce asset recovery, and erode customer confidence.

- ✓ Return processing cost: It is the entire expense of managing, transporting, and disposing of a returned product. It is a metric for business efficiency and revenue. Reduced return processing costs can boost your margins, revenue flow, and competitive edge. Return handling costs can eat away at your earnings, liquidity, and market share.

- ✓ Return value: The quantity of revenue or savings that can be produced by returning a product. It is a metric for strategy worth and long-term viability.

- ✓ Return feedback: The information and observations gained from the return procedure and returned goods are referred to as return feedback. It is an indicator of progress and growth. A wealth of return comments can assist the company in identifying and addressing the underlying causes of returns, improving product design, quality, and marketing, and increasing consumer satisfaction and loyalty. Poor return feedback can keep the business from resolving the issues that cause returns, miss chances to increase the value and differentiation of your product, and erode consumer faith and confidence. [1]

Because reverse logistics costs can account for such a large proportion of total costs in the business, they must be carefully managed.

Returns management impacts not only the profit and loss account of the business but also the balance sheet.

Reverse logistics is also increasingly being recognized as having a significant impact on the economic value of e-commerce businesses especially. Decisions on returns strategies must be

[1] https://www.linkedin.com/advice/0/what-key-performance-indicators-kpis-measuring-3c (21 March 2023)

made based on a thorough understanding of the impact they will have on the financial performance of the business.

Section 03: Reverse logistics market

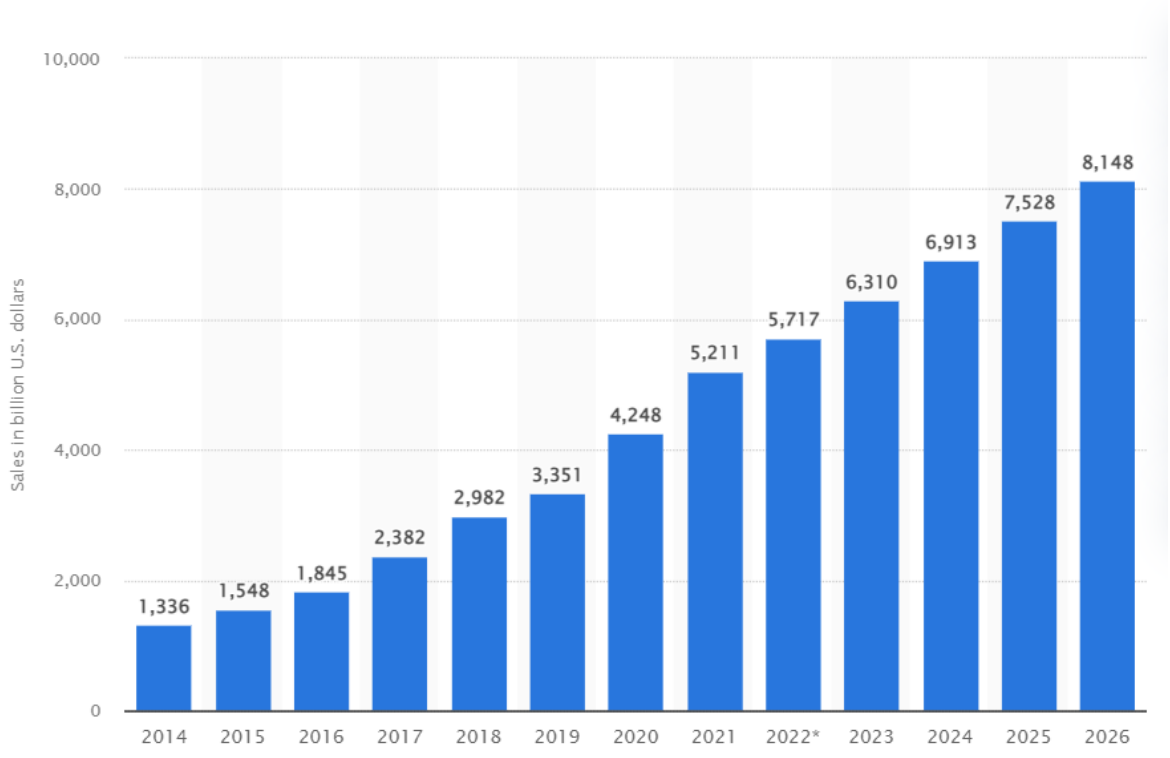
In recent years, reverse logistics has become a key component of any successful streamlined supply chain. Reverse logistics performance is measured by several key areas that influence performance and which, in the end, have a positive impact on revenue.

In this section we will indicate the reality of REL over the world, statistics and expert's predictions and valuation of its market.

3.1.The Global Reverse Logistics Market

The e-commerce business is quite complex, and with the massive increase in online sales transactions over the last years; analysts predict that the market penetration would increase by 25% by 2026.

Figure 15: Retail e-commerce sales worldwide from 2014 to 2026



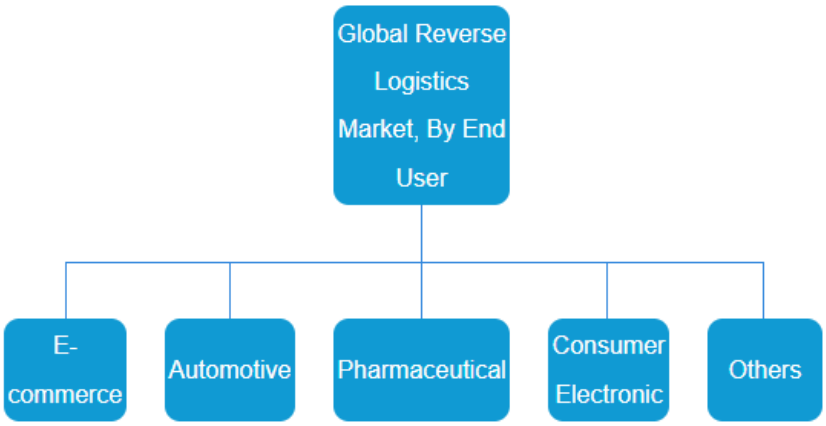
Source: https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/

And like e-commerce, logistic with all its functions are in parallel development, even returns which are an integral part of e-commerce.

Returns of purchased goods using the Internet can be 20-80%. Other studies have found that at least 30% of all e-commerce orders worldwide ends up like returning package, compared with 8.89% of regular sales in stores.[1]

The reverse logistics market has been segmented by the end user, so the source of the returns and the complete segmentation can be seen below:

Figure 16: Global market of RL, segmentation by end user



Source: https://www.reanin.com/report-store/logistics/logistics-process-equipment-and-technology/reverse-logistics/global-reverse-logistics-market

This figure illustrates the several key sectors that are prominent in the industry. These sectors include e-commerce, automotive, pharmaceuticals, consumer electronic and others.

This segmentation of the global reverse logistics market by end users provides insights into the diverse sectors that rely on effective reverse logistics processes. The understanding the specific needs and challenges of each industry allows tailored strategies and solutions to optimize the management of product returns, reduce costs, and improve satisfactions.

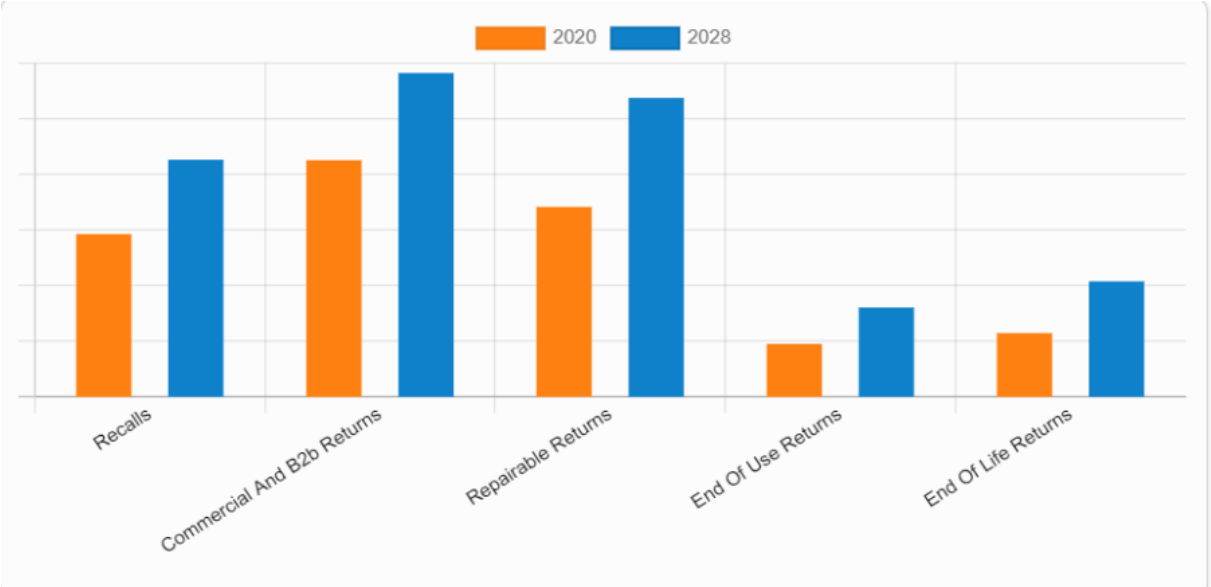
Businesses in the e-commerce returns market continually strive to improve their returns processes, leverage, technology solutions, and adopt sustainable practices to remain competitive in the e-commerce industry.

The reverse logistics market also divided into many categories by which the return type and reason are illustrated.

The following figure shows a predictive study for the volume of different reason types on RL market between 2020 and 2028:

[1] PEI (Z) & PASWAN (A), *"Consumers' legitimate and opportunistic goods return behaviours in online shopping"*, Journal of Electronic Commerce Research, 2018, PP.301-319

Figure 17: Reverse Logistics Market by Return Type



Source: https://www.alliedmarketresearch.com/reverse-logistics-market

The major factors behind the growth of the reverse logistics market are growth in cross-border trade, globalization, and rapid growth in the e-commerce sector. However, the high costs associated with reverse logistics can greatly hinder the reverse logistics market.

The growing trend towards digitization in the industry is creating market growth opportunities. On the other hand, insufficient labour resources to process returns can pose a major challenge to market growth.

There is a complete study about all parameters and their description using different analysis such as SWOT (Strength, Weakness, Opportunities and Threats) and PEST*, demonstrated by a report snapshot of the Global Reverse Logistics Market (GRLM), contains study period, study scope, segmentation, geographical coverage, and company coverage.(See Annex 01)

*****PEST analysis describes a framework of macro-environmental factors used in the environmental scanning component of strategic management. (Political Analysis, Economic Analysis, Social Analysis, and Technological Analysis)[1]

3.2.Reverse e-logistics, a valuable and interesting market in e-commerce

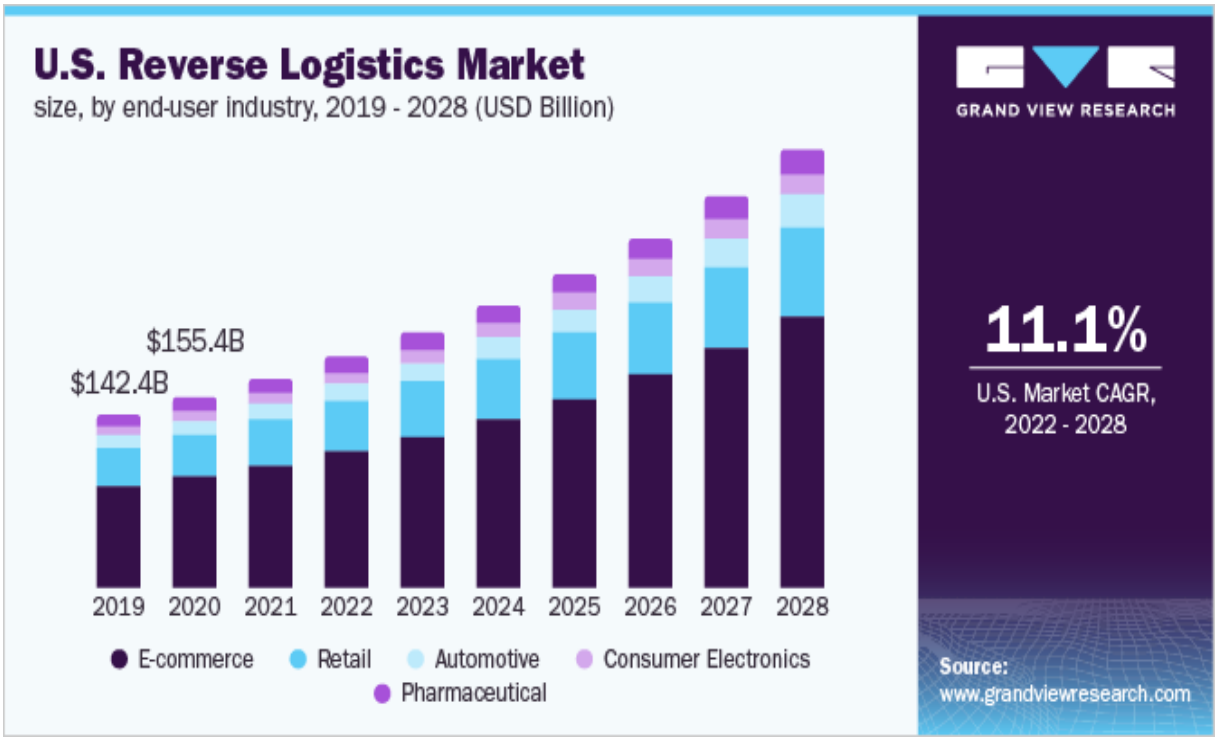
[1] L.B (Shaba nova) and all, "*PEST - Analysis and SWOT - Analysis as the Most Important Tools to Strengthen the Competitive Advantages of Commercial Enterprises",* Mediterranean Journal of social sciences 6(3), May 2015, Russia, PP705-709

Given the sheer volume of online commerce and the need to move goods both upstream and downstream the supply chain, vendors need to build a robust reverse logistics process because it is a strategic advantage for their businesses. Unfortunately, managing reverse logistics takes a lot of time and cost.

From the statistics above and the analysts' predictions, the reverse logistics market is expected to gain market growth in the forecast period of 2022 to 2029. Data Bridge Market Research analyses that the market is growing with a CAGR (Compound annual growth rate) of 5.3% in the forecast period of 2022 to 2029 and is expected to reach USD 954,500.37 million by 2029.

More than 55% of reverse transactions in the logistics market are based on e-businesses; the figure bellow describes the comparison between e-commerce RL and other markets in US.

Figure 18: US Reverse Logistics market



Source: https://www.grandviewresearch.com/industry-analysis/reverse-logistics-market-report

As it's shown, online retailing dominates and will occupy up to 65% of the US RL market, and it's just a little example that must require more attention from the entire world of online exercisers.

With the huge and remarkable development in the world market of reverse logistics, extremely in the online commerce transactions, it's momentous for traders and e-retailers to invest time and money to develop an effective RL system, and play for a profitable business.

Conclusion:

In this chapter, we have looked at the strategies of returns management in e-commerce and how they affect logistics performance.

Gatekeeping is one of those strategies; we have detailed all the necessary information about it: definitions, emplacement, practices, and process. We have also seen some details about other programs: avoidance and Six Sigma.

As we have seen, Performance Indicators represent a not entirely recent concept in e-commerce logistics, but one that is very little used in businesses in general, at the global level, particularly in Algeria, despite their undeniable advantages.

In the next chapter, we will attempt to carry out practical research on gatekeeping practices and their importance on the performance of RL. We will therefore start from the theoretical concepts presented and detailed here in this second chapter and try to apply them to achieve our objective expressed in our introduction.

Chapter 03:

Empirical study: The importance of the gatekeeping in the performance of reverse logistics, Case: Algerian online commerce

Introduction

Shifting our focus from theoretical aspects, we now turn to a practical research tool that will aid in better defining and understanding the core objective of our study.

This chapter begins with an introduction to the "Algerian e-commerce market" as our research field. The subsequent sections delve into fundamental aspects, commencing with an overview of the survey methodology and research design.

We then elaborate on the construction of the survey and the definition of various variables.

Ultimately, we assess whether the hypotheses formulated at the study's outset are confirmed or rejected, and we explore how the findings can contribute to addressing the research problem.

Section 01: Algerian electronic commerce

In reality, e-commerce in Algeria has no history as it is a very young and poor market. Moreover, some e-Commerce experts ignore the existence of e-commerce in Algeria and consider the small number of websites as mushrooms.

Thus, it is not easy to talk about e-commerce in Algeria as long as electronic payment is not well established and the informal market is still growing.

But, if we talk about the history of websites that have been created in Algeria, the first Algerian online marketplaces appeared in 2009 with a few Algerian sites; e-commerce started to take off in 2014 with the arrival of the pan-African Jumia, which remains the most popular online sales site in the country.

1.1.The 2013 e-Algeria strategy

The e-Algeria 2013 strategy is a multi-sectorial plan that advocates a coherent and forceful action plan. The main objectives of this plan are to[1]:

- Enhance the performance of the national economy, enterprises, and the administration.
- Improve education, research, and innovation capacities.
- Develop ICT industry clusters.
- Increase the country's attractiveness and improve citizens' lives by encouraging the emergence and use of ICT.

Indeed, this plan has been developed based on thirteen principal axes which are[2]:

A: Acceleration of the use of ICTs in public administration.

B: Acceleration of the use of ICTs in businesses.

C: Development of mechanisms and incentives for citizens' access to ICT equipment and networks.

D: Impetus for the development of the digital economy.

E: Strengthening of the high-speed and very high-speed telecommunications infrastructure.

F: Development of human skills.

G: Strengthening research and development and innovation;

[1] http://www.algerianembassy.ru/ consulted (14/01/2023 at 12:34 PM)

[2] *FILALI (Sara), « Les Perspectives du commerce électronique en Algérie »*, master thesis, *Mostaganem University*, 2018, PP.01-19

H: Upgrading the national legal framework;

I: Information and communication;

J: Enhancing international cooperation;

K: Evaluation and monitoring mechanisms;

L: Organisational measures;

M: Financial means and planning.

The aim is to develop online services such as e-banking, e-investment, e-procurement, e-business, e-registration, and e-trade.

1.2.The reality of the Algerian e-Commerce market

Algerian society has slowly opened up to the world of NICT, it is currently experiencing a technological boom, the obstacles are now beginning to dissipate and the society begins to adapt to the various aspects of technology.

1.2.1. Types of e-Commerce Sites in Algeria

The small numbers of e-Commerce sites that exist in Algeria are mainly classified as follows[1]:

Marketplaces:

The marketplace is a digital platform through which individuals create their shops and proceed with the sale. It, therefore, acts as an intermediary:

- It receives the order.
- It responds to the request.
- It delivers the product.
- It then remits the money received to the seller in return for a commission.

In Algeria, most of the most famous used sites are marketplaces such as the pioneers and leaders of e-Commerce in Algeria Jumia, Ouedkniss, and Batolis.

These sites bring together merchants who already have a traditional business and who want to increase their sales, or individuals who have a product and want to sell it, and who rent a

[1] AKRETCHE (Sara), *« Le commerce electronique en Algerie, etats des lieux et perspective », Master dissertation,* Mouloude Maamri University Tizi-Ouzou, Algeria, 2020, PP.63-64

small space on the platform; so that they have more visibility and more chance to sell their products.

Merchant sites:

The second category is web merchants who:

- Buy the products at the source;
- Store the products;
- Resell the products.

In this case, the company will create a site to sell its products or services.

The advantage of merchant sites is that they issue an invoice and provide a guarantee and after-sales service.

Social networks:

The third and final category is the sales pages that abound on social networks, including Facebook and Instagram.

These sales pages operate, quite simply, in the informal sector and account for 80% of online sales.

Selling pages on social networks can reach, for some of them, 1,000 orders per day, escaping the economy and the tax system, as they have no legal existence.

1.2.2. Security for E-commerce

Securing transactions across the Internet is essential, even more so when they are completely dematerialized. The good news is that the methods and techniques to secure both the payment card and the online transactions exist and they are fully supported to ensure their confidentiality and integrity.

Payment cards that meet the EMV standard (EuroPay, MasterCard, and Visa) make fraud impossible virtually; while drastically reducing protection and insurance costs.

Since the security of online transactions is concerned, increasingly effective methods are in place to minimize all forms of malicious acts, including the so-called "3D Secure".

In the medium and long term, the trend is towards the gradual disappearance of the physical payment card, which will eventually be transferred to the mobile or an equivalent connected object.

Meanwhile, there are still a few good years of experience, both in Algeria and abroad.[1]

E-commerce is today a vector of growth, productivity, and competitiveness, both for the company, and individuals, as well as for the country itself in its general functioning.

The Algerian authorities must provide support for e-merchants and e-consumers at all levels, which will only be beneficial for businesses and customers on the one hand, but also, above all, for the State itself on the other side.

[1] *FILALI (Sara),* Op.cit, PP.01-19

Section 02: Research and empirical study methodology

In order to study the problematic of our dissertation and to test the research hypotheses, we have used several qualitative and quantitative techniques in our field study.

Before going further into our case study, it is appropriate to first give an overview of the research methodology.

2.1.Presentation of the research methodology

2.1.1. Research design

It is defined as the overall plan for collecting data in order to answer the research question, also the specific data analysis techniques or methods that the researcher intends to use.[1]

A research design is the arrangement of conditions for the collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy and procedure.[2]

It is divided into 3 methods: Qualitative, Quantitative, and mixed method research.

- Qualitative Research Design:

"*It is an iterative process in which improved understanding to the scientific community is achieved by making new significant distinctions resulting from getting closer to the phenomenon studied*."[3] Creswell defines it as: "*a means for exploring and understanding the meaning individuals or Groups ascribe to a social or human problem*."[4]

- Quantitative Research Design:
- It is a means for testing objective theories by examining the relationship among variables, and based on the measurement of quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity.[5]
- Mixed Methods research design:

[1] ZHU (Hua), *Research Methods in Intercultural Communication: A Practical Guide*, United Kingdom, Wiley, January 2016, P159
[2] GUPTA (M) and GUPTA (D), *Research Methodology*, New Delhi: PHI Learning Private Limited, 2011, P.32
[3] ASPERS (P) and CORTE (U), *what is Qualitative in Qualitative Research*, Qualitative Sociology, springer, February 2019, P.139
[4] CRESWELL (J.W), *Research design: Qualitative, quantitative, and mixed methods approaches*, Sage publications, USA, 2017, P03.
[5] KOTHARI (C.R), *research methodology: methods and techniques*, New Age, India, 2004, P03

It is an approach to inquiry that combines or associates both qualitative and quantitative forms.[1] This method was born out of the idea that both qualitative and quantitative designs have weaknesses, thus collecting both of them neutralized the weakness of the other.[2]

To explore the essential question of this paper and test the research hypotheses, we used the mixed methods in our field research, so two combined techniques**:** qualitative and quantitative.

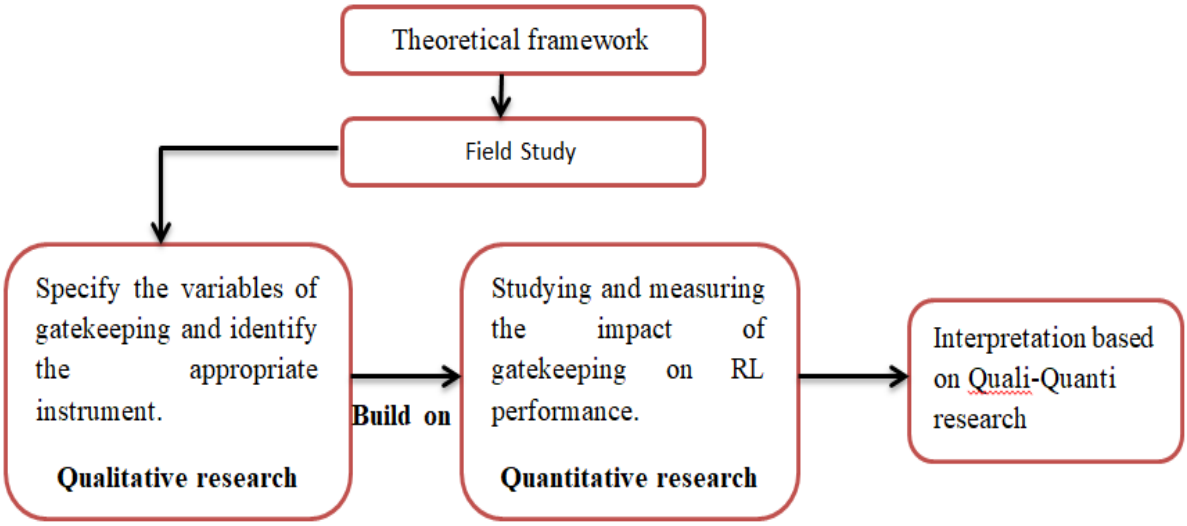
Beginning with the qualitative research stage, we explore the participants' notices. The data is then analysed and the information is used to build our second quantitative phase.

We used the qualitative phase to specify the variables of gatekeeping to include in the quantitative follow-up study, and to identify the appropriate instrument for use in the next phase.

Quantitative research stage is designed to study the different impacts of gatekeeping dimensions on the REL.

This figure shows the path and stages of our field study:

Figure 19: Framework of empirical study



Source: made by student

We would have liked to take inspiration from a reference framework to adopt and choose the criteria to be measured based on which we will study the performance of reverse e-logistics.

[1] CRESWELL (J.W), Op.Cit, P.04.
[2] BOSTLEY (M.A), *Basics of Research Design: A Guide to selecting appropriate research design*, International Journal of Contemporary Applied Researches, May 2019, P84.

We looked for a referential framework specified for e-logistics; we did not find one, as it does not exist, so we took as a guide the SCOR and Gunasekeran models, and we conducted a qualitative study to find out what is the case in the field and to select the most relevant variables in the case of e-commerce. Our qualitative study consisted of a semi-directive interview with two employees from two separate delivery companies to help us choose the most relevant variables for Algerian e-retailers in return logistics.

Then we led a quantitative approach presented in a questionnaire by which we will calculate the different relationships between the practices adopted from the interview and the REL variables.

2.1.2. Techniques of methodological approaches

The following table summarizes the 5 main techniques for collecting data in an empirical study.

Table 9: Techniques for collecting data in an empirical study

Type of study	technique	Advantage in data collection
Qualitative	Observation	Observation is useful for analysing a real phenomenon, such as working conditions, a social conflict, and a political situation or for carrying out a sociological study.
	Interview	The interview makes it possible to collect precise data from an expert on a very technical subject.
	Focus group	The *focus group* is effective when it comes to collecting data to understand a phenomenon affecting a group of people or on a social subject where everyone can give their opinion.
Quantitative	Questionnaire	The questionnaire makes it possible to question a group of citizens, in order to collect various data that can be used statistically to obtain information on a given subject.
	Survey	The survey collects data around a general question. This technique makes it possible to know a general opinion on a given subject.

Source: https://www.scribbr.fr/methodologie/collecte-de-donnees/

To properly structure our case study, we have applied both qualitative and quantitative techniques:

A/ The qualitative method, in our case, will consist of an interview to collect a large number of criteria attached to the gatekeeping strategies.

B/ The quantitative method will consist of a questionnaire survey since it will quantify the impact of each criterion on the performance of reverse logistics.

2.2.Explication of applied techniques

2.2.1. Types of interview and motives for choice

There are 3 principal types of interviews:

- The non-directive interview: "*This type of interview is based on the unconditional positive attention of the investigator. The subject can say everything, and each element of his speech has a certain value because it refers directly or indirectly to analytical elements of the object of research. The non-directive interview also implies an empathy study of the investigator, that is to say, the acceptance of the frame of reference of the subject, in terms of emotion or meaning, as if, the investigator was in the place of the interviewed subject".* [1]
- Directive interview: "*is a fixed design interview whose context is prepared before it is administered. It aims to ask all respondents the same questions in the same order. The interviewees usually get a limited range of answers; that is why the interview is also known as a structured interview. The questions used in the structured interview are closed-ended, pre-coded, or fixed-choice questions*." [2]
- The semi-directive interview: "*This is a type of interview, unlike the non-directive interview, which allows the interviewee to express himself freely without a specific theme. The semi-directive interview aims to direct the respondent through a pre-established interview guide. Thus, the interviewee will have to address subjects that the interviewer will have predefined. The main goal of the interviewee will be to get*

[1] ROCHE (D), *Réaliser une étude de marché avec succès*, The Organisation, Paris, 2009, PP 40.42

[2] King, "*Qualitative methods in organizational research: A practical guide*", The Qualitative Research Interview, 1994, PP.253.

all the themes listed in the interview guide to be covered and to obtain a maximum number of actions in this or that way." [1]

We opted for a semi-directive interview technique for the following reasons

- Participant answers can guide future research questions and help us develop a more robust knowledge base for quantitative research.
- Collected data is comparable, reliable, and has the flexibility to ask follow-up questions.
- A more open nature leads to a more detailed and rich presentation. If necessary, partici pants in a semi-structured interview may be asked to clarify, elaborate, or restate their answers.
- This technique is particularly suitable for studies with a single central question to address so that it can be tackled in-depth, which corresponds perfectly to our case
- This technique is also more accessible for us as students, as it allows us to generate a sufficient amount of information in a short period (between one hour and three hours) and at a low cost.

2.2.2. Questionnaire survey

To generate knowledge for our study, we also opted for a quantitative approach using an administered questionnaire, which allowed us to interview individuals by defining a response mode beforehand through a chain of questions. This is a very effective tool for gathering information as it can handle large samples and establish statistical relationships or numerical comparisons.

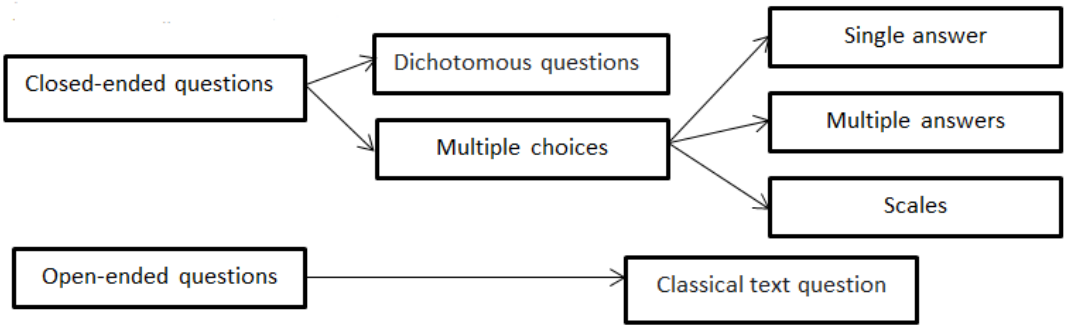
The questionnaire is defined as: "*A direct technique of scientific investigation used with individuals that allows them to be questioned in a directive manner and to take a quantitative sample to find mathematical relationships and to make numerical comparisons*." [2]

- Types of questions:

There are two models (closed and open) divided into several types, which we describe below. Thus, for each type of question used in this questionnaire, it depends on the information you want to collect.

[1] COURATIER (C) and MIQUEL (C), «*Les études qualitatives : théorie, applications, méthodologie, pratique* », The Harmattan, French, 2008, P.173.
[2] OUACHRINE (H) and CHABANI (S), *«Guide de méthodologie de la recherche en science sociales*», Taleb impression, Algies, 2nd Edition, 2013, P.77.

Figure 20: Types of questions



Source : Adapted from : DAHAK (A) and KARA (R), *Le mémoire de master : du choix du sujet à la soutenance*, EL-AMEL edition, Algies, 2015, P.99.

Our questionnaire contains 21 questions divided into three sections:

- The entry section.
- The survey and information section.
- And the survey respondent's datasheet.

Questions vary between closed-ended questions in which we integrate: multiple choices with one single answer and more than one response authorized, and also many scales of evaluations.

2.3.The empirical study methodology

2.3.1. Research objective

Returns are an inherent element in the business model of e-commerce due to the customer's inability to test and evaluate products, services, or new suppliers before placing an order.

Most organizations still see returns as a nuisance[1], especially commercial returns.

We observe that consumer returns within the e-commerce business are traditionally managed without any knowledge about the state of or the reasons behind incoming returns, that's why this paper aimed to identify and describe the different reasons for returns, and to study the importance of implementing return management strategies, especially gatekeeping, on the reverse logistics performance.

[1] *Academy of Management Perspectives*, United States, Academy of Management, 2006, P60.

Our study allows us to give qualitative and quantitative support to our research work, and to provide e-retailers with an example of strategies that can be used to improve the returns management process.

Thus, the exploitation of the results will allow us to detect the different gatekeeping applications evaluated by the sample of users, and to make some proposals to improve their impact on the performance of RL

2.3.2. The procedure of the study

2.3.2.1.Presentation of the interview

Aim of the interview: This interview aims to draw up as extensive a list as possible of gatekeeping applications. This list will later be used to form a questionnaire to find out the impact on the performance of reverse logistics.

The sampling :

- Number of participants: *"In qualitative research there are no published guidelines or tests of adequacy for estimating the sample size required to reach saturation equivalent to those formulas used in quantitative research"*[1]
  The signal of saturation, in qualitative research, seems to be determined by investigator proclamation and by evaluating the adequacy and the comprehensiveness of the results.[2]

Charles berg, a professor at the University of Luxembourg says that:

> *"One interview could be enough. The Grounded Theory concept of saturation could help solve the problem. Keep in mind that it has no reason to fix the number of interviews from the very beginning. At the start of analysis with the first interview, it can be decided if there is a need for more interviews (or not) if analysis goes on."*

Roland Berberich a professor in Edinburgh Napier University, also, affirms that:

> *"'it depends', qualitative enquiry is a process that may well end after one interview, require more interviews and even interviews with people that you did not initially*

[1] MORSE (J.M), *the significance of saturation*, Qualitative Health Research, 5, 2, 1995, P.147-149.
[2] Idem.

perceive 'useful'. The question should be asked is whether the research question is answered to a degree of satisfaction. Personally I prefer a few interviews, also to allow for reflection on my side and that of interviewees. It also adds credibility, a problem all qualitative researches are facing."[1]

In our case, and to better manage our interview, we have limited ourselves to two respondents.

- Selection of participants: The people we interviewed were chosen on the basis that they would be able to provide clear, relevant, and useful answers to our questions (see Interview Guide in the Annex 02), and in order to give value to our research work.
- Number: 2 Interveners.
- Gender: Ladies.
- Profession:

▪ Project Manager at ZR express Delivery Company

▪ Operations Manager at ADSIL Delivery Company

Developing the qualitative interview guide:

It helps to steer the conduct of the session and allows the different questions of the debate to be articulated in an organized manner while respecting the time allotted, it can be adapted within each interview and as the study progresses if necessary. [2]

The interview guide consists of the following parts: a Background, a Qualitative interview introduction, a list of topics, and a debriefing (See Annex 02)

List of required tools for the conduct of the interview: Paper and pen, phone to record the interview, and labels with questions to facilitate dialogue and note-taking

2.3.2.2.Presentation of the questionnaire

Purpose of the survey: Identify the importance and measure the impact of gatekeeping applications in reverse logistics

[1] https://www.researchgate.net/post/How-many-interviews-are-enough-in-qualitative-research-case-study-studies

[2] HACHEMI (Nadia), *L'apport des modèles d'évaluation multi-attributs dans la compréhension de la décision d'achat du consommateur*, magister thesis, EHEC, 2015, P151.

Population studied**:** the population we aim to study is made up of Algerian e-traders and people who have an experience in online sales; regardless of social class, profession or any other criteria.

Sampling method: For reasons of accessibility and cost, we opted for a simple information-gathering method, namely the non-probabilistic (empirical) method with a convenience sample, based on common sense rules and not on statistical rules.

Convenience sampling is the most commonly used and easiest sampling method. It has the following advantages: [1] Collecting data quickly, easy to research, low cost, easily available sample, and fewer rules to follow

Sample size: When conducting quantitative surveys of large populations, it is neither possible nor necessary to interview the entire population of interest. It is sufficient to calculate a sample size that is representative of the entire parent population. [2]

In our study, the sample was drawn using the convenience method by sharing the questionnaire on several social networks while asking respondents to distribute it to their own network.

A usable sample of 100 E-traders was drawn in a period from 10/05/2023 to 19/05/2023. (Annex 03)

The online survey: "The online survey is a method of collecting and processing questionnaire data directly accessible on the Internet. This type of survey can deal with different areas such as the study of customer satisfaction, consumer habits and behaviour, or the study of the opinions and views of a representative sample of the population, concerning a particular area."[3]

The organization of the interview and the questionnaire is very important, as the mode of administration and the samples size, but the substance of the guide and the questionnaire

[1] BENABDALLAH (i) and HAMDI (s*), « l'impact de l'e-publicité sur l'engagement de la communauté virtuelle envers la marque»*, Master thesis, HSMD, Kolea, 2022, PP78-79.

[2] HALLIL AMALLOU (Waffa), *« les mutations du comportement du consommateur dans les sociétés numériques : contribution de la connectivité du consommateur a la qualité relationnelle »*, EHEC Algies, thesis, 2019

[3] https://jobphoning.com/enquete-de-satisfaction/enquete-en-ligne (consulted on 19/05/2023 at 12:45)

remain equally important. We will therefore devote the next section to the presentation and analysis of the results of the interview and questionnaire.

Section 03: processing and analysis of survey results

To start our study on a correct and solid basis, we interviewed experienced professionals in the field of e-commerce logistics, and we discussed all the topics listed in our interview guide during the meeting.

We then administered a questionnaire to help us measure the impact and verify the hypotheses put forward at the beginning of the research.

3.1.The presentation and the analysis of the interview results

3.1.1. The focus of the interview

For the purpose of understanding and observing the studied phenomenon and verifying if the pre-established hypotheses are pertinent with the case, we've developed a semi directive interview guide to allow the respondents to express their opinions freely. (Annex 01)

The introduction of the guide helps us to introduce the purpose of the study, and to obtain general information about the topics.

Other questions aim to know the gatekeeping approach, and its tools used to minimize the losses of RL, so their effectiveness and importance on the REL performance.

The main topics are:

Topic 1: talks about the main causes of returns in e-commerce (Q1 and Q2)

Topic 2: Talks about the gatekeeping strategy (Q3 and Q4)

Topic 3: Goes around the performance factors that gatekeeping can impact on (Q5 and Q6)

3.1.2. Verbatim analysis

Topic 01: Recognize the main causes of returns in e-commerce:

Q01: "According to your experience in the management of logistics operations, what are the main causes of returns in online retail outlets?"

R1: "The main causes of returns can be attributed to several factors. One of the primary causes is inaccurate product descriptions or images on the website. Product quality and defects are also common reasons for returns. Additionally, issues related to shipping and delivery can contribute to returns"

R2: “Some returns can be attributed to customers who may not be serious or change their minds; these cases in Algeria represent an important proportion”

Interpretation: According to the experience of respondents, the most repetitive causes of returns are: Inaccurate products, not serious clients, defective product, customer does not respond, delivery delays, customers change their minds.

Q02:“Who are the primaries responsible for returns?”

R1: “The responsible of returns is not just one part, it depends on the origin of reverse flows, on the quality of management of vendors and if the delivery company is doing well with orders”

R2: “The primary responsibility for returns typically lies with the customers; however it’s important to note that online outlets also share some responsibility in ensuring a smooth and satisfactory shopping experience.”

Interpretation: Based on interviewees points of view; the responsible of returns is not just one part; customers must make informed purchasing decisions and be familiar with return policies. Online outlets also have shared responsibility by providing accurate information, maintaining product quality, and offering responsive customer service, they actively work to minimize returns and create a positive shopping experience.

Topic 02: Gatekeeping strategy:

Q01: “What are the possible applications of the Gatekeeping strategy in e-commerce?”

R1: “Firstly, this strategy involves setting up certain mechanisms or criteria to filter and regulate returns access, some of its practices: setting up return policies to manage product returns and exchanges, implementing information systems that control access to certain data or functionalities of different customers, and it can be applied to confirm orders by implementing verification processes such us order confirmation emails, phone verification. I can add something more important which is the workers experience that can help to make a good management system”

R2: “In order to limit the number of returns, e-traders must processes a deep understanding of their customers need and preferences, they must control data and information such as customer profiles, purchase history, and even old returns. We offer, as a 3PL, a special data

base to our clients (Green-List) to help them build trust and loyalty in their e-commerce environment."

Interpretation: According to our respondents, the most common practices of gatekeeping used in Algerian e-commerce are: Order confirmation; by ensuring the accuracy of order details, reducing errors and returns, and augmenting the earnestly of the customer, data bases and IS which indicate all necessary information about clients, and clear and transparent return policies to provide a fair and consistent return process and costs. They add also a critical point which is the experience of workers or e-traders in general that can impact the management system and build a trust between vendors-consumers.

Q02: "Does this strategy reduce returns"

R1: "Absolutely, it has a positive impact on reducing the number of returns in e-commerce; it can discourage frivolous or unnecessary returns and encourage customers to think twice before initiating a return"

R2: "Yes, and it can also reduce costs; e-merchants who have a sense of organization and responsibility are always satisfied by integrating the practices of this strategy. After the experimentation of our Green-List data base, the general return rate decreased by about 15 per cent"

Interpretation: Online retailers see returns as a cost need to be minimizing. Gatekeeping is a very useful strategy for reducing returns, decreasing costs, and guarantee a good level of client satisfaction at once.

Topic 03: The performance factors that gatekeeping can impact on:

Q01: *"How can returns impact the performance of businesses?"*

R1: "It is necessary to inform that e-costumers in Algeria refuse to pay returns fees, so 3PL oblige the vendors to pay them. With a big number of returns; e-retailers will not be able to achieve a beneficial profit, and it impact widely their performance, we can talk also about exchanges that have relation with inventory and new orders."

R2: "Processing returns requires dedicated resources, including staff, time, and costs. They can also affect inventory management by adding complexity to inventory tracking and inaccuracies in stock levels."

Interpretation: The costs and losses resulting from returns can eat into profits and impact the overall financial performance of the business.

Q02: *"To which degree do the gatekeeping practices impact the performance of reverse logistics in online businesses?"*

R1: "It can vary depending on several factors including the specific implementation of these applications and the unique characteristics of each online retailer"

R2: "Reverse E-Logistics performance consists in return rate, exchange rate, and inventory management. I can recapitulate my answer that it's important for online businesses to implement and refine their gatekeeping strategies so they can maximize the positive impact and enhance their profits"

Interpretation: Gatekeeping practices in e-trade can have a significant impact on the performance of REL. When effectively implemented, they can reduce return rates, streamline return processes, provide a good management of inventories and protect the financial performance of businesses.

3.1.3. Interpretation of the results

The interview allowed us to broaden our understanding of the practices related to the gatekeeping, its different uses as well as the impacts that are considered essential in the performance of RL. The following table summarizes the recap of our interview.

Table 10: Questions and answers of the interview

Points	Compendiums
Return reasons	Return reasons in online retailing consist on product defects, sizing issues, and customer dissatisfaction or in case that he changes his mind, not serious customer and delivery delays.
Returns responsibility	Typically lies with the customers who initiate the return process. However, retailers also play a role in facilitating and managing returns.

Applications of gatekeeping	Implementing stricter return policies by requiring pre-approval for returns and conditions to accept the reverse flow (Return or exchange), setting up a system of control and verification, and order confirmation. Experience of workers is also one of gatekeeping practices.
Returns can impact business performance	By increasing costs associated with processing returns, restocking inventory, and potential loss of revenue.
The gatekeeping maximize the performance of reverse e-logistics	By implementing an efficient return processes, accurate tracking and inventory management, and data analysis to identify trends and address recurring issues.

Source: Our own conception

In sum, the interview led us to list a number of six common reasons of returns, 3 essential practices of gatekeeping, namely: Return policies, Risk Blacklist and Green-list, Conditions of accepting an exchange order.

This list is necessary for the continuation of our field study, as it will serve as a basis for the implementation of the questionnaire method developed in the following part, through which we will identify the importance of implementing a gatekeeping strategy on the performance of Algerian e-retailers reverse logistics processes.

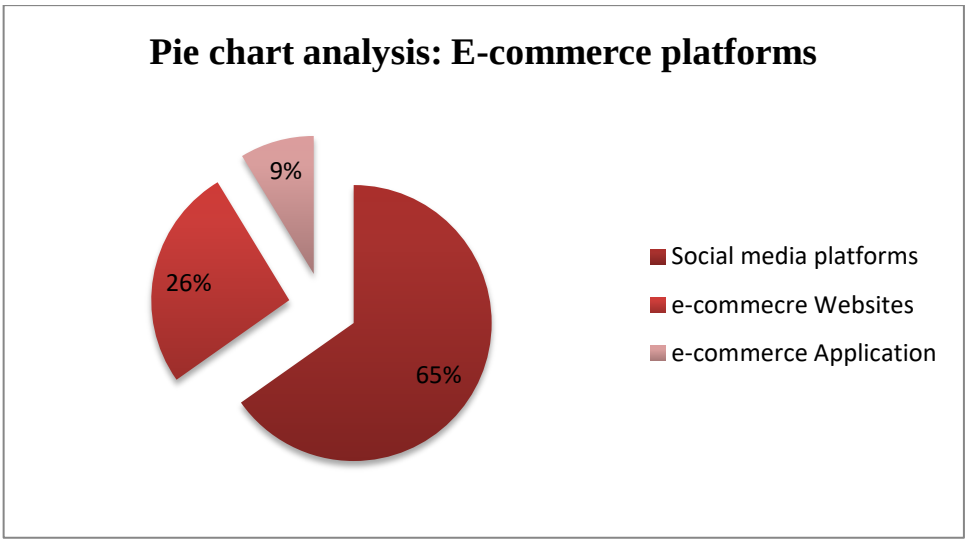
3.2.The presentation and the analysis of the questionnaire survey results

3.2.1. Sample structure

This title focuses on a descriptive analysis of the general variables in our sample.

Q01: Which platform do you use for your online business?

Figure 21: Pie chart analysis: E-commerce platforms across social media, websites, and mobile apps



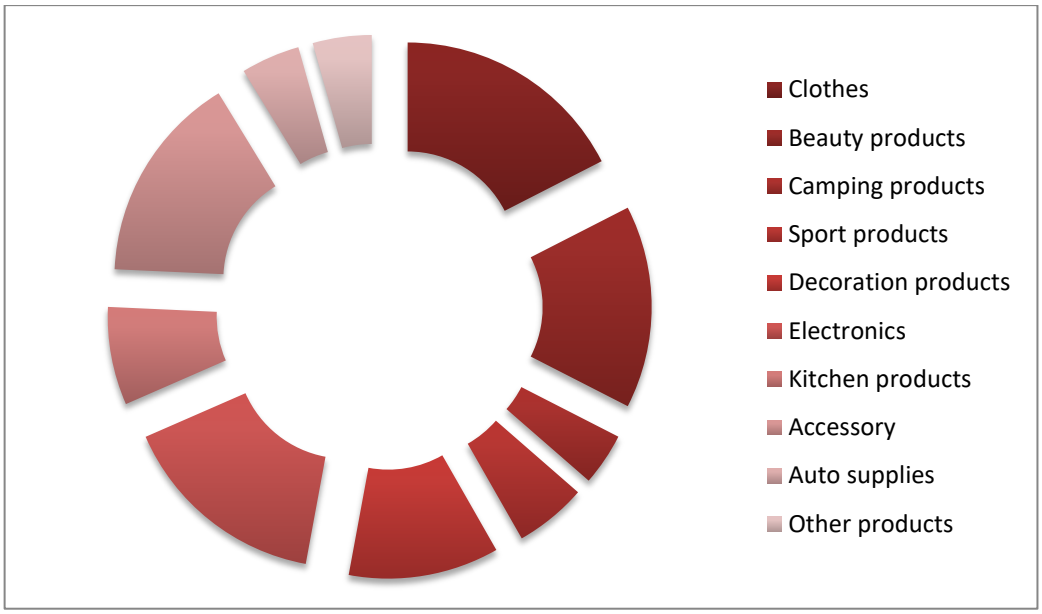
Source: Our survey data, "Results obtained using SPSS software".

Observations: This pie chart illustrates the distribution of e-commerce platforms among online traders. It reveals that social media platforms are the most prevalent choice, constituting 65% of the total, following by websites with 26% and mobile applications with just 9%. It underscores the importance for businesses to strategically consider and utilize these platforms to effectively reach and engage with their target customers in the ever-evolving digital marketplace.

Q02: What kind of products do you commercialize?

Comment: The following exploded doughnut chart provides a clear visual breakdown of the different product types and their relative proportions, offering insights into the distribution and diversity of the products.

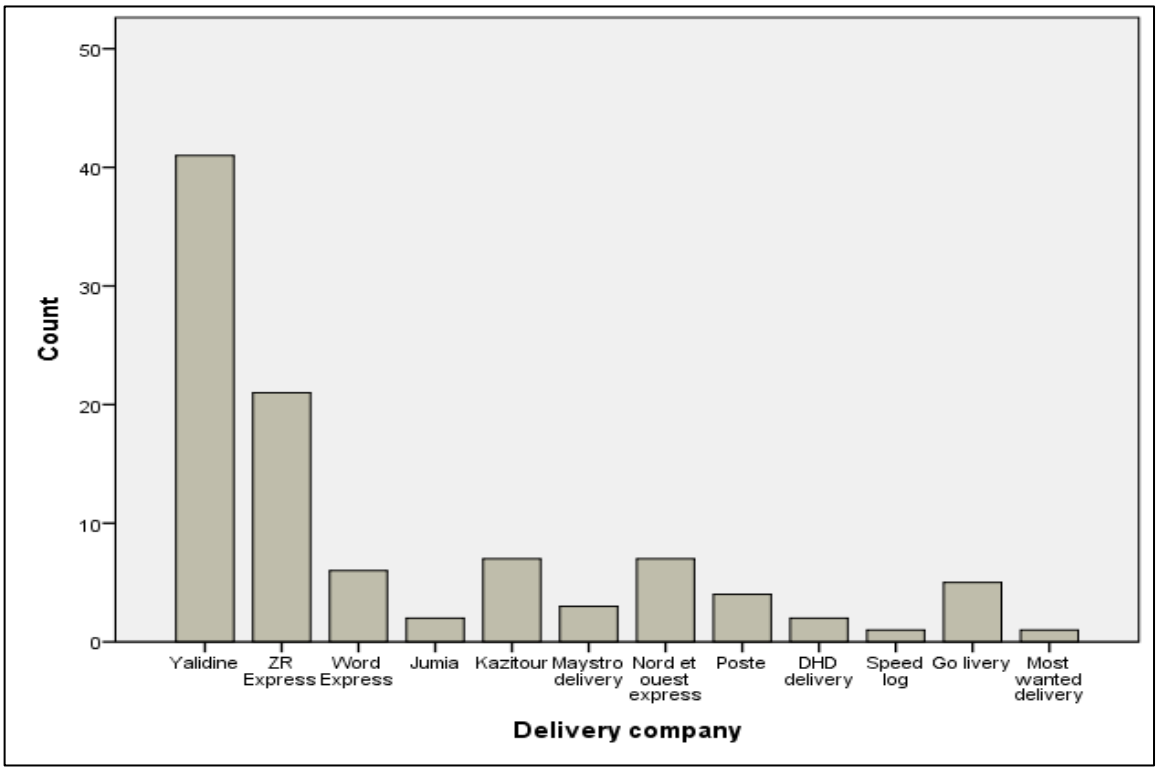
Figure 22: A closer look at product types and categories



Source: Our survey data, "Results obtained using SPSS software"

Q03: With which logistics service provider do you collaborate?

Figure 23: E-traders' collaborative networks with logistics providers

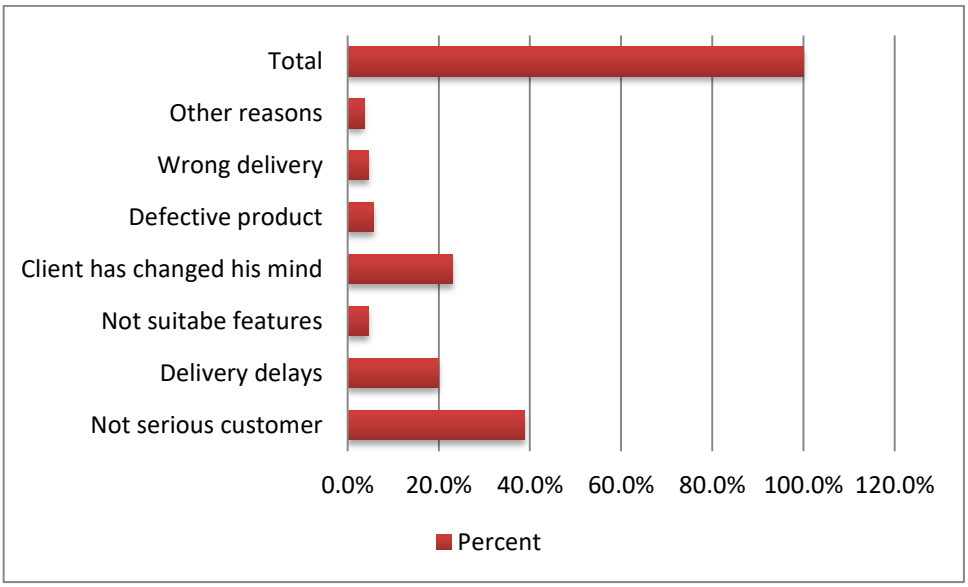


Source: Our survey data, "Results obtained using SPSS software"

Comment: The bar chart visually highlights the diverse network of logistics providers with whom e-traders collaborate.

Q04: What are the reasons of returns that you face the most?

Figure 24: Analysing return reasons: percentages faced by E-traders

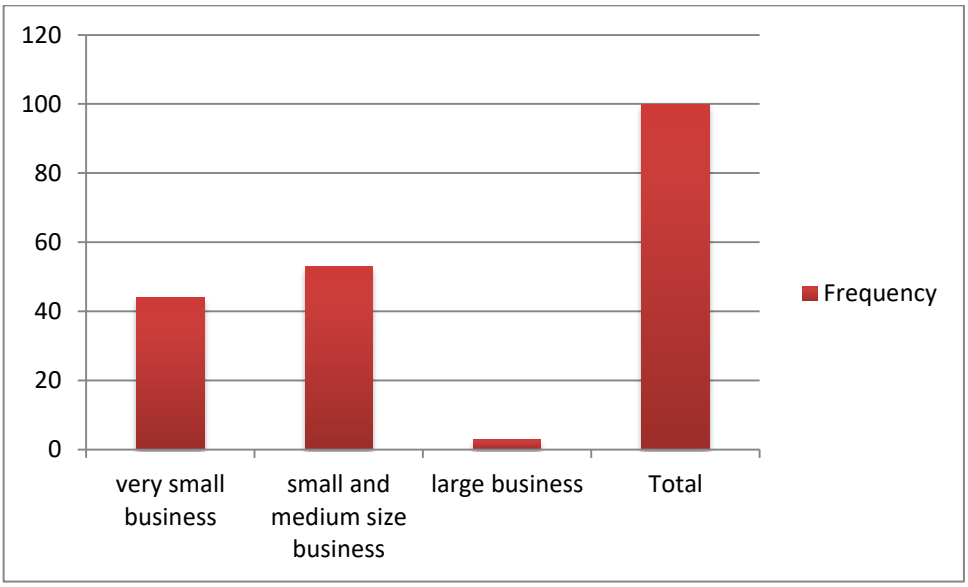


Source: Our own conception

Comment: The stacked bar chart provides comprehensive analysis of the different reasons for product returns encountered by e-traders. It visually depicts the distribution of return reasons and their corresponding percentages.

Q19: What is the size of your business?

Figure 25: Size distribution of e-commerce businesses



Source: Our own conception, using SPSS and MS Excel

Comment: The histogram effectively illustrates the distribution of e-commerce business sizes, highlighting the prevalence of very small and small-to-medium-sized enterprises within the sample. It indicates a smaller proportion of e-commerce enterprises operating at a larger scale with potentially higher revenue and market reach.

3.2.2. Bivariate analysis

Based on our theoretical research and the information drawn out of the interview, we have choose 3 dimensions of the gatekeeping which are: Confirming orders, using IS and data bases to gate keep undesirable returns; in our case risk blacklist and green list, and also return policies as a factor of accepting or refusing the inverse flows.

We'll begin with Chi-square analysis to prove dependence between Return Rate and both of: Usage of green list and risk blacklist.

Table 11: Chi-square test between the Return rate and the usage of Risk blacklist / Green-list

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28.732[a]	2	.000
Likelihood Ratio	32.234	2	.000
Linear-by-Linear Association	26.843	1	.000
N of Valid Cases	100		

Source: Results obtained using SPSS software

According to the chi-square test (sig = 0.000), we can deduce the existence of a significant relationship between the use of the risk black-list / green list and the rate of return.

Table 12: Return rate * Orders confirmation Cross tabulation: Chi-square test

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	31.882[a]	2	.000
Likelihood Ratio	33.672	2	.000
Linear-by-Linear Association	31.488	1	.000
N of Valid Cases	100		

Source: Results obtained using SPSS software

The significance value (sig) is equal to 0.000; it indicates that there is a highly significant relationship and a strong association between order confirmation and the return rate.

To gain better understanding of these relationships, and to examine more the associations, it's important to perform a multiple regression so we can affirm the quality of relationship.

3.3.Multiple regressions

During this part we will perform tests to verify our assumptions.

3.3.1. Reliability and validity tests of used scales – Alpha Cronbach

Cronbach's Alpha measures the internal consistency or reliability of a scale or questionnaire.

The Cronbach's alpha coefficient is the correlation between the responses in a questionnaire. It can take values between 0 and 1, the higher the average correlation between items, the greater the internal consistency of a test.[1]

Reliability Statistics	
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items
.713	.716

Source: Results obtained using SPSS software

A value of 0.713 suggests that there is moderate to good internal consistency.

3.3.2. Test of significance – ANOVA

The one way analysis of variance (ANOVA) is used to determine whether there are any statistically significant differences between the means of 2 or more independent groups.[2] In our case we used this treatment to verify if the use of the black-list and green list clearly has an effect on the return rate or not.

ANOVA

[1] https://datatab.fr/tutorial/cronbachs-alpha (03/06/2023)

[2] Toi Clayton-Soh, *Data Analysis and Application – one way ANOVA*, Capella University, December 2016, PP.01-13

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.850	1	8.850	36.457	.000
Within Groups	23.790	98	.243		
Total	32.640	99			

Source: Results obtained using SPSS software

The smaller the p-value, the stronger the evidence against the null hypothesis, here, the means are very different (F=36.457, sig=0.000). The null hypothesis is rejected; the use of the black-list and green list clearly has an effect on the return rate.

So there are significant differences between at least some of the group means.

After confirming the internal consistency of the study variables, we will now delve into testing the research hypotheses to shed light on our research problem.

3.3.3. Examining the relationship: Application of simple regression to test the first hypothesis

H01: The return rate is significantly affected by the implemented return policy.

. Analysis of the correlation between the returns policy and the returns rate:

Linear correlation is a widely used statistic because it summarises the importance of the relationship between two measured variables. Pearson's correlation coefficient is a measure of association, making it possible to establish whether two variables measured on the same set of observations vary similarly. [1]

In this sense, the correlation coefficient categories are classified as follows: [2]

- 0.00 to 0.25 Very small correlation
- 0.26 to 0.49 Low correlation
- 0.50 to 0.69 Moderate correlation
- 0.70 to 0.89 High correlation

[1] MANU(C) and FANNY (P), *"Analyse de données avec SPSS*", Pearson education, 2009, France, P.134

[2] BENABDALLAH (I) and HAMDI (S), Op.Cit, P.101

- Very high correlation from 0.90 to 1.00

It is noted that: X = Independent variable, Y = Dependant variable

Table 13: Examining the relationship between return rate and return policies: a correlation analysis

Correlations			
		Return policies	Return rate
return policies	Pearson Correlation	1	.429**
	Sig. (2-tailed)		.000
	N	100	100
Return rate	Pearson Correlation	.429**	1
	Sig. (2-tailed)	.000	
	N	100	100
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Results obtained using SPSS software

The correlation table reveals a significant positive correlation between the return rate and return policy, as evidenced by Pearson correlation coefficient of 0.429. This indicates that there is an almost moderate positive relationship between the return rate and the effectiveness of the implemented return policy.

It's important to note that correlation does not imply causation. Therefore, while this correlation suggests a relationship between two variables, further analysis and consideration of other factors are necessary to establish a causal link or fully understand the underlying dynamics at play. For this reason, we are next looking closely at this linear link to see how to predict these two variables from each other.

. Simple regression analysis between return policy and return rate:

We applied a simple regression model represented by the following equation:

$Y = \alpha + \beta X + \varepsilon$

▪ ε: The term of error is estimated to be 0

▪ β and α : estimated parameters

Table 14: Exploring the relationship between return policy and return rate

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.429[a]	.184	.176	.521
a. Predictors: (Constant), Return policy				

Source: Results obtained using SPSS software

The coefficient of determination (R-squared) is 0.184, indicating that approximately 18.4% of the variance of the dependent variable (return rate) can be explained by the independent variable(Return policy) included in the model, this explains the existence of other factors or variables not included in the model that contribute to the remaining 81.6% of the variance.

Further analysis, the inclusion of other variables, and possible refinement of the model may be necessary to obtain a more complete understanding of the relationship under study.

Table 15: The coefficients of the first regression model

Coefficients [a]					
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.944	.118		8.028	.000
	Return Policy	.320	.068	.429	4.706	.000
a. Dependent Variable: Return rate						

Source: Results obtained using SPSS software

From the table, we can then infer that the equation for the regression model can be written as follows: $Y_{\text{return rate}} = 0.944 + 0.320\ X1_{\text{return policy}}$

Conclusion:

The findings of the two tests carried out on, the correlation analysis as well as the regression model, we noticed that the return policy has a positive and significant impact on the return rate, we will, therefore, conclude that:

Hypothesis 01 is confirmed

In the same way, we will continue to analyse the remaining hypotheses.

3.3.4. Examining the relationship: Application of simple regression to test the second hypothesis

H02: The order confirmation can significantly affect the return rate.

Table 16: Examining the relationship between return rate and order confirmation: a correlation analysis

		Confirmation orders	Return rate
confirmation orders	Pearson Correlation	1	.564**
	Sig. (2-tailed)		.000
	N	100	100
Return rate	Pearson Correlation	.564**	1
	Sig. (2-tailed)	.000	
	N	100	100
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Our own conception, using SPSS

Pearson coefficient indicates that there is a significant (sig = 0.000 < 0.05) positive (0.564) correlation between return rate and order confirmation, a more reliable order conformation may contribute to a lower return rate.

The next table will allow us to understand how changes in the order confirmation variable can impact the return rate.

Table 17: Simple Regression Analysis: Exploring the impact of Order confirmation on Return rate

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	.564	.318	.311	.477

Source: Our own conception, using SPSS

The coefficient of determination R square value of 0.318 suggests that approximately 31.8% of the variance in the return rate can be explained by the order confirmation variable included in the model. This indicates a moderate level of explanatory power.

Table 18: The coefficients of the second regression model

Coefficients					
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
2	(Constant)	.463	.152		3.039	.003
	Order confirmation	.821	.121	.564	6.761	.000

Source: Our own conception, using SPSS

The P-value of 0.000 associated with the order confirmation variable indicates that it is highly statistically significant. Based on the information provided in the table, we can deduce that the equation for the second regression model can be expressed as follows: Y = 0.821X2 + 0.463

This implies that there is strong evidence to reject the null hypothesis that there is no relationship between order confirmation and the return rate. There for we conclude that:

Hypothesis 02 is confirmed

3.3.5. Examining the relationship: Application of simple regression to test the third hypothesis

H03: The usage of the IS systems and data bases such us Risk-blacklists and Green list reduce the return rate.

The following table is to determine the strength and direction of the association between return rate and usage of Risk-Blacklist and Green List solutions.

Table 19: Examining the relationship between return rate and the usage of Risk-Blacklist / Green list solutions: a correlation analysis

Correlations			
		Return rate	Usage of the blacklist or the green list solutions
Return rate	Pearson Correlation	1	0.521
	Sig. (2-tailed)		.000
	N	100	100
Usage of the blacklist or the green list solutions	Pearson Correlation	0.521	1
	Sig. (2-tailed)	.000	
	N	100	100

Source: Our own conception, using SPSS

The correlation coefficient suggests that: As the usage of IS and the implementation of Risk blacklist data base increase, there is a noticeable tendency for the return rate to decrease. (We noted that we inverse the question of the return rate that's why we get a positive correlation).

This indicates that e-traders that adopt IS and employ Risk blacklist / Green list solutions more extensively tend to experience a reduction in the rate of returns.

Table 20: Simple Regression Analysis: Exploring the impact of Risk Blacklist and green list usage on the Return rate

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
3	.521	.271	.264	.493

Source: Our own conception, using SPSS

The model summary table displays the results of a regression analysis examining the relationship between the usage of Risk Blacklist and the return rate. The R-value of 0.521

indicates the strength of the linear relationship between the predictor variable (use of Risk Blacklist) and the outcome variable (return rate).

The R-squared value of 0.271 in the regression model suggests that implementing the Risk Blacklist explains approximately 27.1% of the variation in the return rate.

Table 21: The coefficients of the third regression model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3	(Constant)	.513	.161		3.183	.002
	Usage of the blacklist / the green list solutions	.598	.099	.521	6.038	.000

Source: Our own conception, using SPSS

The P-value of 0.000 associated with the usage of the blacklist / green list variable indicates that it is highly statistically significant.

Based on the information provided in the table, we can deduce that the equation for the third regression model can be expressed as follows: Y = 0.598X2 + 0.513

The results of the two tests carried out, the correlation analysis and the regression model, reveal that:

Hypothesis 03 is confirmed

After confirming all the secondary hypotheses, we can infer that the main hypothesis has been validated.

To further investigate the relationship, we constructed a multiple regression model that incorporated all the previous examined variables. The resulting analysis produced the following outcomes:

Table 22: Multiple regression analysis of variables impacting the return rate

Model Summary			
Model	R	Adjusted R	Std. Error of the

		Square	Estimate
4	.678	.443	.428

Source: Our own conception, using SPSS

The regression analysis conducted on the variables concerning the main hypothesis yielded the following results:

The correlation coefficient R= 0.678 indicates a moderate to strong positive relationship between the predictor variables and the return rate.

The coefficient of determination R-squared is equal to 0.443, which implies that approximately 44.3% of the variability in the return rate can be explained by the predictor variables included in the regression model. This indicates a moderate level of predictability and suggests that the selected variables collectively contribute to a substantial portion of the variance observed in the dependent variable.

It's important to note that the interpretation of R-squared should be done cautiously, as the remaining unexplained variability may be influenced by other factors not included in the model.

Overall, these findings suggest that the predictor variables have a meaningful association with the main hypothesis. However, to fully comprehend the complex relationships involved, further analysis and consideration of other relevant factors are recommended.

In an attempt to enhance the model's explanatory power, we incorporated additional external variables, excluding those related to the gatekeeping strategy (Experience and size of the business), into the regression analysis. The results of this extended model are displayed in the subsequent model summary table:

Table 23: Multiple regression analysis including external variables: exploring enhanced model explanatory power

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
5	0.771	.594	.573	.375

Source: Our own conception, using SPSS

The regression analysis yielded the following results:

Y return rate = 0.697**X1** Order confirm + 0.032**X2** return policy + 0.462**X3** Usage of blacklist – 0.183

The correlation coefficient R = 0.771 indicates a strong positive relationship between the predictor variables (the three dimensions of the gatekeeping strategy in addition to the experience and the business side) and the outcome variable (Return rate), suggesting a substantial association between the variables included in the regression model.

The coefficient of determination (R-squared) is 0.594, meaning that approximately 59.4% of the variability in the outcome variable can be explained by the predictor variables included in the fifth regression model. It indicates a relatively high level of predictability and suggests that the selected variables collectively contribute significantly to the observed variance in the outcome.

It is important to note that while R-squared provides insights into the proportion of variability explained by the model, there may still be unaccounted factors contributing to the remaining variability.

3.3.6. Examining the relationship: Chi-square and Pearson correlation to test the secondary hypothesis

The delay on the return process indicates the inefficiencies in some of gatekeeping parts, such as processing time and returnable items identification. The mastery of the inventory management involves managing stock levels.

H04: The delays in a return correlate with the inventory management

To test this hypothesis we will measure the correlating coefficient between the delays in returning orders and the different parts of the inventory management.

The following table is to determine the strength and direction of the association:

Table 24: Correlation analysis of return delays and inventory management: a cross table examination

Correlations			
Generate new delivery delays	Impact the Customer satisfaction	Penalize the chain of command	Return delay

Generate new delivery delays	1 88	-.109 .311 88	.007 .949 88	.103 .339 88
Impact the Customer satisfaction	-.109 .311 88	1 88	-.587** .000 88	-.165 .124 88
Penalize the chain of command	.007 .949 88	-.587** .000 88	1 88	.395** .000 88
Return delay	.103 .339 88	-.165 .124 88	.395** .000 88	1 100

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Our own conception, using SPSS

The correlation coefficient between return delays and penalization of the chain of command is 0.395. This indicates a moderate positive relationship between these two variables. It suggests that as return delays increase, there is a tendency for the chain of command to be penalized to a certain extent. In other words, when there are delays in processing returns, there is a higher likelihood of repercussions or penalties being imposed on the individuals responsible for managing the resale stocks.

Furthermore, the correlation coefficient between penalization and client satisfaction is -0.587. This reveals a strong negative relationship between these variables. It implies that as the level of penalization in the chain of command increases, client satisfaction tends to decrease significantly. In simpler terms, when there is a higher degree of penalization, it is associated with lower levels of satisfaction among clients.

Both of these correlations are statistically significant, as indicated by the sig value of 0.000. This suggests that the observed relationships are highly unlikely to occur by chance alone. These findings highlight the importance of efficient inventory management processes and prompt resolution of return issues to prevent negative consequences for the chain of command and maintain high levels of client satisfaction

Based on the results provided, we can infer that there is a correlation between return delays and the penalization of the chain of command, as well as a correlation between penalization and client satisfaction. However, correlation does not necessarily imply causation.

Hypothesis 04 is confirmed

While the correlations suggest a relationship between return delays and inventory management, it does not definitively establish a causal link. Other factors or variables can influence both return delays and inventory management independently

Conclusion:

In this chapter, we have utilized various techniques to enhance our understanding of the significance of gatekeeping in reverse e-logistics (REL) performance variables. Firstly, through our interview, we identified parameters such as returns policy, order confirmation, and the utilization of information systems (IS) as the Risk Blacklist and green list, which emerged as the primary gatekeeping practices in Algerian e-commerce.

Subsequently, by administering a questionnaire and conducting regressions and correlations between these practices and REL performance variables, we delved deeper into addressing our research problem. This allowed us to gain insights into the critical factors that e-merchants must master within the logistics chain.

Through this research, we have revealed that an effective returns policy, accurate order confirmation, and the utilization of information systems as risk management tools are key components for successful gatekeeping in e-commerce in Algeria. These findings shed light on the areas that e-merchants must prioritize and master to enhance their logistic chain operations.

General conclusion:

Where there's a beginning, there's an end, and we have come to the very end of our research designed to study the importance of gatekeeping on REL performance.

The first part of the literature gave us an insight into reverse logistics and its place in the enterprise with the emergence of e-commerce.

Before tackling reverse e-logistics, we talked about traditional reverse logistics; then we tackled the concept of returns management where we first defined the different strategies that help to master this sensitive function; among these strategies gatekeeping, which is the origin point of our theme, and finally added the performance variables in reverse logistics.

Our study focused on comprehensively understanding the reverse logistics of e-commerce and its implications, as well as identifying the primary reasons for product returns in the Algerian market.

Additionally, we examined the impact of various dimensions of the gatekeeping strategy implemented by Algerian e-retailers on the variables related to reverse e-logistics, we take for our case: Return rate and Inventory management.

At the end of our study, we drew a number of interesting conclusions that are well worth reiterating. By synthesizing these findings, we can provide valuable insights and practical recommendations for enhancing the efficiency and effectiveness of e-commerce operations in Algeria.

Indeed, the results of this survey enabled us to respond to our fundamental research problem, entitled: ***"To what extent does the implementation of gatekeeping improve reverse logistics in the Algerian distance selling setting?"***

According to our findings, it results that the gatekeeping, especially the implementation of return policies, Information Systems such as Risk-blacklist and Green list, and order confirmation can significantly improve the reverse logistics performance for the e-traders that participated in our survey. On the basis of the results obtained, allows us to understand more specifically how this improvement is made possible, we have confirmed all the hypotheses initially put forward.

Fist, our first hypothesis ***H01: The return rate is significantly affected by the implemented return policy*** is confirmed. Relating to the correlation test and then the simple regression, the

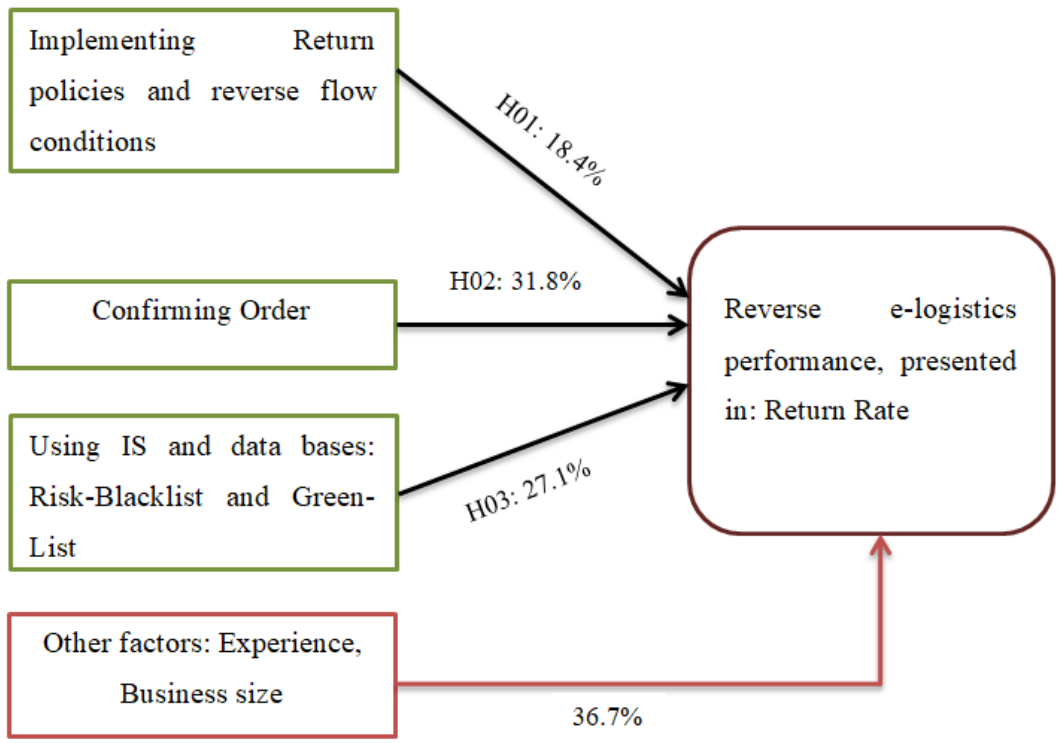
findings provide compelling evidence to support this hypothesis, we observed that a customer-friendly return policy, which offers flexible return options, clear instructions, and minimal barriers, tends to result a lower return rate.\overall, by carefully considering and refining their return policies, businesses can effectively manage returns.

Then, the second hypothesis ***H02*** stated that: ***The order confirmation can significantly affect the return rate.*** Our analysis indicates that the manner in which order confirmations are handled plays a crucial role in shaping customer's likelihood of returning products.

Our third hypothesis ***H03*** postulated that: ***The usage of the information systems and data bases such us Risk-blacklists and Green list reduce the return rate.*** We examined it by a simple regression and a correlation test, according to these analysis revealed that the implementation of a data bases which identify customers with high return rates or fraudulent behaviour; significantly reduce the return rate, we confirm this hypothesis.

This figure illustrates the bottom line of the research results:

Figure 26: Impact of gatekeeping dimensions on the performance of reverse e-logistics presented in: Return rate

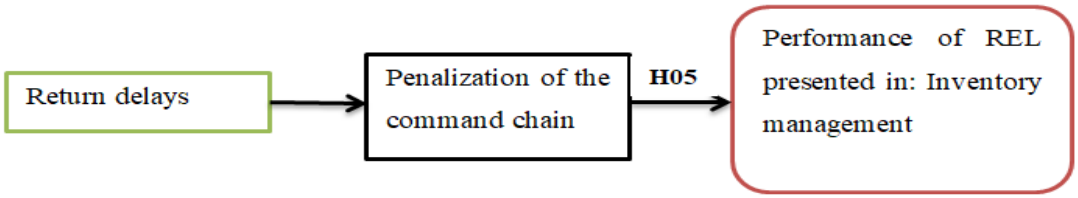


Source: developed by ourselves

The survey indicates that there is a direct impact of gatekeeping usage on the performance of reverse e-logistics, specifically in terms of the return rate. The findings suggest that the way gatekeeping strategies are employed, along with other external factors such as experience, significantly influence the effectiveness of reverse e-logistics in managing and reducing return rates. These results highlight the importance of implementing appropriate gatekeeping practices and considering external factors to optimize reverse e-logistics performance and mitigate return rates.

In other hand, the relationship between return delays and gatekeeping in reverse e-logistics is significant. Return delays occur when there is a delay in the handling of returned items, identifying returnable goods, or the processing time.

Figure 27: The relationship between effectiveness of the gatekeeping presented in: Return delays and the performance of inventory management



Source: developed by ourselves

The process of carrying out this research and the results obtained has enabled us to make some modest recommendations that could add a managerial contribution to the field of reverse e-logistics:

- Developing a comprehensive gatekeeping framework specific to reverse logistics in e-commerce should outline the key components, processes, and responsibilities involved in effective gatekeeping, including order verification, return authorization, condition assessment, and disposition-making.
- Implementing a strict returns policy is one of the steps that should not be neglected or underestimated in terms of its impact on optimizing reverse logistics flows for Algerian e-retailers.

- Responding to the challenges of reverse logistics in e-commerce and ensuring perfect management of returns will have a major impact on the performance of the entire company.
- New innovative solutions play a critical role in today's e-businesses, and the technology adoption becomes a factor that must be highlighted in the entity strategy plan to improve efficiency and reduce errors.
- With the emergence of the e-trade and the specificities of reverse e-logistics performance, experts must implement a unique referential framework that guide to distinguish between to traditional flows and to give the required importance to REL.
- Examine the importance of collaboration between companies and their logistics partners in gatekeeping, share information ensure the coordination and the smooth in the management of returns.
- Because of the significant impact of the experience factor on reverse flows, organize a training programs for employees and e-traders to enhance their understanding of gatekeeping principals maximize the accuracy and efficiency.
- Studying the potential relationship between the different parts of return management, as the impact of inventory management on the return rate.

Like all research works, this study has some limitations; the first one of this master's dissertation is the underdeveloped state of electronic commerce in Algeria, which directly impacts the quality of implementation of return management strategies. The e-commerce market in Algeria is still in its early stages of growth and lacks the robust infrastructure and established practices seen in more mature e-commerce markets. As a result, there may be limited availability of advanced technologies, standardized processes, and industry-specific expertise for effective return management.

Moreover, the limited adoption of online shopping and relatively low e-commerce penetration in Algeria may result in a lower volume of returns compared to more mature e-commerce markets. This can limit the availability of data and the ability to conduct comprehensive statistical analyses or derive generalizable conclusions. The limited sample size and diversity of returns could impact the depth and breadth of insights gained from the study.

Additionally; the unavailability of comprehensive and localized references can potentially impact the depth of analysis and comparison with international best practices.

The way the online questionnaire is administered is also a limitation of this study as we have no way of controlling the environment in which the respondent is responding to the questionnaire at this time and whether they have fully understood the different questions, especially as the types of our questions.

The lack of a specific reference to the reverse logistics of e-commerce and the lack of measurement scales to apply to the "gatekeeping" variable are among the difficulties.

To improve on the results of this modest study, we propose for future research the possibility of re-studying it with a larger sample to conduct more in-depth analyses. Addressing the other strategies of return management will be a very interesting subject to enriching the studies bibliography of e-logistics in general and REL in particular.

It would be instrumental for online businesses to conduct a study on the key performance indicators of the reverse e-commerce logistics.

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Appendices

Annex 01: Report snapshot of the Global Reverse Logistics Market

Parameters	Description
Market	Global Reverse Logistics Market
Study period	2019-2029
Base year (for reverse logistics market size estimates)	2022
Study scope	- Revenue Analysis (Historical & Forecast) for all segments and geography. - Market Share Analysis - Drivers, Restraints and Opportunity Analysis - Market Opportunity Map - PEST Analysis.* - Porter's Five Forces Analysis - Company's SWOT Analysis - Competitors Product Heat Map Analysis
Market segmentation	- Return Type: (Recalls, Commercial Returns, Repairable Returns, End-of-use Returns and End-of-life Returns.) - End User (E-commerce, Automotive, Pharmaceutical, Consumer Electronic and Others.)

Geographical coverage	- North America - Europe - Asia Pacific - Middle East and Africa - Latin America
Company coverage	- C.H. Robinson - DB Schenker - Delcart - Deliveryontime Logistics Pvt. Ltd. - FedEx Corporation - Kintetsu World Express - Reverse Logistics Compan - The Deutsche Post AG - United Parcel Service, - YUSEN LOGISTICS CO, LTD - Others

Source : https://www.reanin.com/report-store/logistics/logistics-process-equipment-and-technology/reverse-logistics/global-reverse-logistics-market

Annex 01: "Semi-Directive interview guide"

Introduction:

Research title: The importance of the gatekeeping in the performance of e-commerce reverses logistics.

Objective of the interview: The questions asked during this interview are intended to gather as much information as possible. We are particularly interested in answering the question of whether gatekeeping has an impact on the performance of reverse logistics, in order to evaluate this impact later, and also to find out about the best-known applications of gatekeeping in the Algerian retail sector.

Presentation of the interviewer: Graduating student at ESGEN KOLEA, specializing in E-business, preparing a master thesis.

Conditions of the interview:

- Date:
- Hour:
- Material: Paper and pen, highlighter and a sound recording device
- Duration: 30 – 45 min

Information of interviewee:

First and last names:

- Mme Manel (A)
- Miss Rehal Feriel

Sex: Females

Profession:

- Project Manager at ZR express Delivery Company
- Operations Manager at ADSIL Delivery Company

List of themes and questions:

Theme 01: Recognize the main causes of returns in e-commerce:

"According to your experience in the management of logistics operations, what are the main causes of returns in online retail outlets?"

“Who are the primaries responsible for returns?”

Theme 02: Knowing the view of the participants in the gatekeeping strategy:

“What are the possible applications of the Gatekeeping strategy in e-commerce?”

“Does this strategy reduce returns?”

Theme 03: Indicates the performance factors that gatekeeping can impact on:

“How can returns impact the performance of businesses?”

“To which degree do these practices impact the performance of reverse logistics in online businesses?”

Acknowledgement: For the interviewees who gave up their time to answer the call.

Annex 03: Questionnaire

In the context of a scientific study for a dissertation on returns in e-commerce and reverse logistics management, I would be grateful if you could take 3 minutes to fill in this questionnaire.

All data collected will be anonymous and will under no circumstances be used for commercial purposes.

This study could be of great benefit to e-commerce retailers in managing their returns.

Section 01: General information

Q01: Which platform do you use for your online business?

- Social media

- Website

- Mobile application

Q02: What kind of products do you sell?

- Clothing - Care and beauty - Camping and hiking - Sport

- Decorating - Electronics - Cooking - Accessories

- Car supplies - Others

Q03: Which logistics service provider (Delivery Company) do you collaborate with?

……

Q04: How often do you receive returns on the products you sell?

- Always - Often - Rarely - Never

Q05: What are the reasons for returns that you face the most?

- Non-serious customer - Late delivery - Unsuitable product characteristics

- Customer has changed their mind - Defective product - Delivery error - Other

Measurement questions

Q06: To what extent does your returns policy impact the exchange rate?

1/ Minimal impact to 5/ Remarkable impact

Q07: To what extent do you think the conditions under which return requests are accepted are important in minimising the return rate?

- Extremely important - Very important - Important - Not very important

- Not at all important

Q08: Do you confirm orders before delivery?

- Yes, we always do - Sometimes - No, never

Q09: If so, what effect will it have on the rate of a risky/doubtful customer?

- Minimising the rate - Increase the rate - No effect

Q10: Do you use the 'Green-List' or 'Risk-Blacklist' solutions?

- Yes

- No

Q11: To what level do you agree that they influence the cost of return?

- I totally agree - I agree - Neither agrees nor disagrees - No agreement

- Strongly disagree

Q12: For one month, indicate your overall return rate:

- 0% - 20% - 20% - 40% - 40% - 60% - More than 60% of returns

Q13: Does the late arrival of a return have an impact on the stock of available products?

- Yes, it does. – No - Probably

Q14: If so, how does the delay influence stock management?

- Penalising the order chain - Impact on customer satisfaction - Generate delivery delays

Additional information and proposals

Q15: In your opinion, what strategies can be put in place to minimize returns and boost the performance of e-commerce?

Q16: Do you agree that returns management is a critical element in e-commerce?

- Totally agree - Neither agrees nor disagrees - Do not agree

Q17: How long have you been in the online business?

……..

Q18: What is the size of your business?

- Micro-business (small project) - Small and medium-sized business - Large business

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