Acta logistica - International Scientific Journal about Logistics
Volume: 10 2023 Issue: 3 Pages: 363-374 ISSN 1339-5629

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https://doi.org/10.22306/al.v10i3.402 *Received: 13 Mar. 2023; Revised: 14 May 2023; Accepted: 02 June 2023*

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Keywords: stakeholders, categorization, decision graph, urban logistics.
Abstract: The main challenge for urban logistics is to shift towards a system, working under the guidance of a competent authority working in collaboration with all the stakeholders involved, whether near or far. The ultimate goal of this coordination is to optimize resources and durations while maximizing benefits in a sustainable urban context. The choice of the route to be preferred is to be justified at the level of this article. This is the purpose of this document, which aims to prioritize the most important players in the field of goods transport at the urban level to highlight the areas of action. In this article, we recall several notions by providing several definitions related to the actors of urban logistics, including last-mile delivery and standardized categorizations. We then propose our own classification based on a questionnaire, which provides the necessary data for the development of three decision-making graphs based on the results of our analysis. By highlighting the most important stakeholders in urban logistics, we hope to provide a framework for more efficient and sustainable urban goods transport in the future.

1 Introduction

Due to the growing importance of e-commerce business, with an average growth of 10% per year (Melacini et al., 2018), as well as the current trend of urbanization where 47% of the global world population lives in urban environments (Elmqvist, 2018), new urban logistics concepts are required to guarantee favourable living and working conditions for urban actors. City dwellers are increasingly demanding a sophisticated transport infrastructure and traffic flows.

By 2050, the world population is expected to reach 9.7 billion, with over 66% living in urban areas (Revision of World Urbanization Prospects, 2018). Transportation, security, production, and distribution have been affected by this rapid urbanization and more lasting and recurring events related to climate change; the urban population depends on the efficiency of the logistics system. The efficiency of the logistics system is crucial for the urban population; discussions on these topics primarily focus on specific stakeholders such as residents, governments, carriers, consignees, transportation companies, and others.

Given the complexity of the logistics system, various stakeholders are involved, each with a unique role to play in ensuring the smooth flow of goods from the point of origin to the point of consumption. The involvement of these stakeholders is vital in ensuring the efficient and sustainable functioning of the urban logistics system. By this integration, urban logistics can be optimized to meet the needs of all parties. It enables the development of logistics strategies that are responsive to the changing needs of the population, minimizes the negative impacts of logistics activities on the environment and reduces traffic congestion. It fosters collaboration and coordination among different stakeholders, which is crucial in ensuring the smooth functioning of the logistics system.

Stakeholders can be classified into several categories based on their level of interest and involvement in a project or decision-making process. By categorizing, it becomes easier to identify who needs to be prioritized and which stakeholders require more attention and communication throughout the decision-making process.

2 Methodology

2.1 Literature review

Although there has been a lot of research on sustainability in urban systems, most of it has focused on

the three main axes of environment, society, and economy, with very little attention given to the infrastructural conditions associated with urban freight operations. There have been some interesting ideas, models, and frameworks proposed by various authors in the literature. Taniguchi (2014) provided an overview of city logistics, Olsson et al. (2019) reviewed the literature on last-mile logistics, and Boysen et al. (2020) surveyed last-mile delivery approaches from an operations research perspective. There has been research on consumer choice models for electronic purchases. Gatta et al. (2020) used an agent-based approach with discrete choice to investigate the possible acceptance of e-grocery, while Comi and Nuzzolo (2016) developed models to simulate purchasing decisions based on demographic and socio-economic factors. Van Duin et al. (2016) predicted delivery results based on historical delivery data from a logistics parcel service provider, while Russo and Comi (2020) analyzed end-user choices and found that socioeconomic characteristics and store location affect the quantity.

The literature on urban freight transport has identified five interest groups/stakeholders with different areas of interest in relation to urban delivery, including public bodies, associations and intermediate bodies, representatives from the private sector, residents or visitors, and other stakeholders (supporting units, manufacturers of delivery vehicles, educational institutions, research institutes and consultants, politicians and Members of Parliament, and local and public media of communication). This information was derived from the work of Zuccotti & Konstantinopoulou (2010), Russo & Comi (2010), Lepori et al. (2010), McLeod et al. (2011), and Iwan (2013):

- Public bodies: municipal administration, legislative and municipal executive authorities, authorities of neighbouring cities, regional authorities, and provincial and state authorities;
- Associations and intermediate bodies: chambers of commerce and business associations and organizations;
- Representatives from the private sector: carriers, forwarders, business and service unit owners;
- residents or visitors;
- other stakeholders: supporting units, manufacturers of delivery vehicles, educational institutions, research institutes and consultants, politicians and Members of Parliament and media of communication, local and public.

2.2 Last-mile delivery

Definition of "City"

Although the literature has shown increasing interest in city logistics related to last-mile delivery in the e-commerce market, most publications tend to focus on specific issues, such as the analysis of e-trade's impact on last-mile delivery (Allen et al., 2018) or end-user choices (Russo and Comi, 2020).

A city is a problematic and decentralized object that encompasses a multitude of socio-technical processes and networks, as well as hybrid groups and alternative typologies (Farías and Bender, 2010; Gutzmer, 2015). Modern cities are complex systems whose vigilance depends on the efficient working of municipal administration and management units, which encircle all essential areas. Cities are, among subjects, places of work, housing, recreation, shopping, and culture. Cities should allow the implementation and infrastructures of living requirements for residents and other users (internal or external visitors for each probable purpose), providing them with necessary living conditions, not necessarily ideal ones.

Sustainable last-mile

In the E-commerce market, Last-mile delivery is one of the many areas of urban freight transport (UFT) and can be defined as "a set of activities and processes involved in the delivery process from the last point of transit to the last delivery point in the supply chain (Yuen et al., 2018)".

The sustainability of urban transport has been discussed in the literature by Taniguchi et al. (2016), who proposed using big data and decision support systems for urban logistics. Customer value in last-mile delivery was discussed by Vakulenko et al. (2018), and the concept of crowdsourcing logistics was explored by Castillo et al. (2018). Location-routing problems with simultaneous home delivery and customer pick-up were discussed by Zhou et al. (2016), while Perboli et al. (2018) proposed a dual framework for simulation optimisation to evaluate environmental and operational settings for freight transportation. In spite of the several measures taken in cities, these are often unsuccessful. One of the main reasons for this situation is the lack of cooperation between the stakeholders (Gatta & Marcucci, 2016). In particular, stakeholders are sometimes excluded from the decision-making process that directly affects them (Macharis & Kin, 2017).

Among these needs, the requirements for efficacious mobility and accessibility to a large number of consumer goods and resources are of particular importance (Witkowski & Kiba-Janiak, 2014; Macharis et al., 2012). Achieving sustainability is a real challenge because it is only possible through the sociotechnical passage by introducing technological innovations in a complex social system (Geels et al., 2017; Canitez, 2019). Some researchers have developed an approach to designing and evaluating last-mile deliveries from the perspective of various stakeholders (Harrington et al., 2016).

To address local transport problems and ensure sustainable-efficient urban mobility, stakeholders in urban freight transport must work together collaboratively to develop sustainable plans. Unfortunately, city authorities currently lack tools to facilitate such integration.

2.3 Stakeholders' classification

Stakeholders' definition

Urban innovation is a prime example of the involvement of multiple stakeholders in the development and implementation of complex innovations (e.g., Murdoch, 2000; Nilssen, 2018); Identifying specific barriers to innovation is crucial as it can help mitigate stakeholder opposition and resistance to change (Yu et al., 2019).

the urban environment is characterized by multimodal networks, disparate transport modes and conflicting interests of stakeholders, making last-mile deliveries a complicated system with many actors involving a wide range of entities in simultaneous interaction and related activities like operating and planning. In line with the complexity associated with city logistics, simulation is a widely accepted and commonly used solution that provides tools, approaches, frameworks and models in order to organize distribution activities and support decision-making processes (Crainic et al., 2018). Prior to commencing analysis, it is important to define the term "stakeholders". It refers to parties who are affected by a decision made without necessarily participating in the decision-making process. While some stakeholders are directly involved in urban transportation, such as component suppliers, manufacturers, carriers, retailers, and consumers, many others are not, such as city authorities, residents, and tourists/visitors (De Oliveira et al., 2016).

Classification of stakeholders

Effective management of urban logistics requires identifying and prioritizing the stakeholders involved in the process. There is a lack of research on stakeholders' classification in urban logistics. Without this, it becomes difficult to understand the complex network of interactions between them, their interests, and their influence on the decision-making process. This can lead to mismanagement of resources and result in inefficient and unsustainable urban logistics. There is a need to develop a comprehensive framework for the classification of stakeholders in urban logistics, which can provide a systematic and structured approach to understanding the relationships between stakeholders and their impact on the urban logistics system. Such a framework can help identify key stakeholders, determine their roles, and prioritize their needs, leading to better decision-making, improved collaboration, and more sustainable urban logistics.

Current situation and stakeholders' classification

The City logistics situation is an intricate structure where many actors with diverse (and usually contradictory) objectives and various types of delivery operations coexist alongside different and restrictive regulations governing access to city centers. It is seen from three viewpoints, which are represented by different stakeholders: from the demand side, supply and their physical surroundings controlled by governmental authorities (Bandeira et al., 2018). Urban distribution confronts many hardships due to infrastructure congestion, external costs or conflicting interests between stakeholders' goals. UFT includes private companies (producers, carriers, retailers), final consumers working or living in urban areas, and public authorities (Karakikes and Nathanail, 2019). Taniguchi (2014) identifies three primary stakeholders involved in last-mile city logistics, namely freight transporters, municipal authorities, and the city's residents. According to Stathopoulos et al. (2012), stakeholders are viewed as entities with a vested interest in decisions concerning urban transportation matters within the broader understanding of the concept of urban logistics, Vakulenko et al. (2018). Though, the stakeholders can be divided into two groups as described in table 1:

Table 1 Public and private classification of stakeholders

Public	Private
Public transport operators – Authorities Residents City users – Traffic participants	Freight carriers - Senders Other private companies

Justification of the causes of stakeholders' conflicts

The successful implementation of urban innovations requires overcoming stakeholder opposition, as it can result in lasting actors' commitment and endorsement of goals (Williams et al., 2019; Hertel et al., 2019), which, in turn, increases their willingness to adopt urban innovations. It is important to reduce stakeholders' resistance by means of a structured innovation process. That can be reduced through a structured innovation process, as individual and organizational interactions in the ecosystem can create additional sources of resistance (Emani, 2018).

The diverse needs and interests of the aforementioned groups primarily stem from their divergent goals, which influence their operations and give rise to various conflicts (Rubini & Lucia, 2018; Russo & Comi, 2010).

- Public authorities aim to minimize the negative impact of transportation, creating an appealing city for residents and tourists.
- Private companies seek to deliver goods efficiently and cost-effectively, meeting the demands of end customers within shorter delivery times.
- City residents prioritize safety and unrestricted mobility within the urban environment.

Generally, the aim of this paper is to propose a plan for resolving conflicts of interest by prioritizing stakeholders in order to know who among them holds more power, efficiency and ability to act. This will help from a point of view firstly to understand who should act first and in what field he can intervene secondly.

3 Result and discussion

Before starting our analytical study, we start by giving the definitions of essential stakeholders as shown in table 2:

Table 2 Definition of stakeholders

Actors	Definitions	Interests
Sender	An organization, operating under its own name, responsible for the transportation of goods on behalf of a client, either through direct transportation or by subcontracting the task.	Customer satisfaction Business satisfaction Reduction of costs &delays
Logistic provider	A company that offers assistance in managing the movement and storage of logistics operations.	Dispatching of deliveries Consolidation of freightwith the samedestination
Reversed logisticsoperator	An operator responsible for overseeing the retrieval, collection, repair, destruction, and assignments of products.	Customer satisfaction Quick and efficient pickup
Warehouseman	An operator tasked with the management of goods, including storage, rotation, movement, and organization.	Optimal stock level Good stock rotation
Local authority	Group of people with the authority to govern a state or a country. We will use the government instead of local authorities, because in Morocco power is held by this actor.	Ensuring a good qualityof life for citizens Ensuring the safety of people Ensure the protection of the environment Maintenance of infrastructure
Cargo carrier	A company that is entrusted with the transportation of freight (goods) from one place to another, following a specific transportation scheme based on the characteristics of the infrastructure.	Safety of transported goods Fast delivery to the customer Cost reduction
Industrial	Production of goods.	Fast delivery to the customer Reduced transport costs Condensed deadlines
Driver	An intermediary between customers and manufacturers who facilitates the transportation process by coordinating the delivery vehicle.	Safety of goods and people transported
Resident	An individual who resides within a specific urban area.	Living in an unpolluted environment security
Regulator	An agent responsible for ensuring efficient management of the transportation of goods, vehicles, and passengers.	Travel optimization Reduction of energy consumed
Dealer	An administrative body that provides approvals for transportation.	Safety of goods andpeople
Planner	Resource and needs match manager, transport and production planner.	Route optimization
Operations officer	Intermediate between the driver and the consumer utilizing allavailable human and material resources.	Good progress of transport operations
Customer	The recipient of the product, who may or may not be theultimate consumer.	Reduced acquisitionprices
Consumer	The final consumer who will utilize the product.	Advantageous rates

3.1 Attributes-based classification

After reviewing the opinions of various authors on the stakeholders of urban logistics, methods of analysis, specification, and categorization, it is necessary to examine the stakeholders as actors who regulate the entire chain by influencing one another. The expectations of stakeholders, both public and private institutions, and the innovative objectives of urban transport are constantly in confluence, and their interactions must be considered.

It is important to identify and characterize their distinct features. The more a characteristic is present, the more significant role an actor plays in urban logistics. We will define a set of characteristics that will be associated with each stakeholder, which we will refer to as "attributes." These attributes may or may not be applicable to a given actor. Table 3 contains all the attributes and their legal lexicon's definitions:

Table 3 Attributes' definitions

Number	Attributes	Definitions
1	Opposition	It is the total refusal of one structure towards another or any manifestation of volition through which a person intends to stop the execution of a legal or judicialprocess. It can be presented by a physical or moral entity.
2	Acceptance	It is the fact that a person declaring that he subscribes to the undertaking offer which is proposed to him: it constitutes the apparent mark of consent. Acceptancecan be express or implied.
3	Power	It designates the legal capacity to do one thing, to act for another for which one has received a mandate. It refers to the forms of authority within a state, such asthe three powers: legislative, executive, and judicial. The public powers are the constituted authorities
4	Infrastructure	Set of works constituting the foundation and the installation on the ground of a construction or of a set of installations (for example roads, railroads, airports).
5	Public liability	It is incurred either because of the non-performance of a contract, or because of a voluntary act or not, involving for the person who is at fault or who is legally presumed at fault, the obligation to repair the damage. that has been suffered by one or more others.
6	Means of transport	In urban distribution, it is the intra-city public transport that is specific to a cityor an urban environment, adapted to this environment. These must be of good quality and must meet some requirements.
7	Commitment	It is the act by which a public body creates or establishes against it an obligation which will result in a charge.
8	Conduct and behaviour	Characterizes all the reactions adopted by a person, in his environment and in the face of given situations. Here, the behavior acts on the distribution frequency.
9	Training and awareness	It is a program through which a group of people learning to work in the field of urban logistics is introduced to the risks, strategies and policies of its proper functioning.
10	Competence	In civil procedure, it is called « jurisdiction » which refers to the ability recognized by the rules of law for a court to hear a dispute. This can also mean the in-depth knowledge in a branch or field.
11	Moral responsibility	Moral responsibility is the need for a person to answer for his intentions and actions before his conscience. Obligation made to a person to answer for his actsbecause of the role, the loads which he must assume and to support all the consequences thereof.
12	Triggering	Induce by means of a mechanism the setting in motion of a mechanism or a process. Usually, the entity with more power is able to do so.
13	Leverage	It is an influence that refers to the fact that a physical or moral person uses their power and authority with the aim of abusing their influence, real or supposed, so that they can make a favourable decision.

The stakeholders-attribute matrix is actually a first selection of the most important actors of the urban logistics community. This sorting is necessary to reduce the number of parts to be processed. Once done, we will apply in a second step another differentiation of the remaining actors in order to prioritize stakeholders. In other words, once we get a long list of stakeholders, we need to categorize them. Some of them may have the power to block one decision or advance another. Some may be more or less interested in the contribution or consequences of the project.

It is in this sense that the Power-Interest matrix comes into play with the intention of segregating/prioritizing the stakeholders. By drawing up this grid (Table 4). It becomes simple and efficient to identify the most important stakeholders based on their power and interest in the urban context.

Table 4 Attributes' table

	ATTRIBUTES												
Stakeholders	**A1**	**A2**	**A3**	**A4**	**A5**	**A6**	**A7**	**A8**	**A9**	**A10**	**A11**	**A12**	**A13**
Sender	1	1	0	0	1	1	1	1	1	0	1	0	0
Logistic provider	0	0	0	0	1	1	0	1	1	1	1	0	0
Reversed logistics operator	0	0	0	0	1	1	0	1	1	1	1	0	0
Warehouseman	0	0	0	0	1	0	0	1	0	1	1	0	0
Government	1	1	1	1	1	0	1	0	1	1	1	0	1
Cargo Carrier	0	0	0	0	1	1	1	1	0	0	1	0	0
Industrial	0	0	0	0	1	1	1	1	1	1	1	0	0
Driver	1	1	0	0	1	0	1	1	0	0	1	0	0
Resident	1	1	0	1	1	0	0	1	0	0	1	1	0
Regulator	0	0	1	0	1	0	1	1	0	1	1	1	0
Dealer	1	1	0	0	1	0	1	0	0	0	1	0	0

3.2 Application of the Power - Interest grid on the selected actors

From the first selection of stakeholders -based on attributes- we have identified the most important. We note that for each appreciation, we associate a value interval with two steps and a half, as shown in Table 5:

Table 5 Appreciations' values

Values	Interest's appreciations	Power's appreciations
[0 - 2.5]	Not interested at all	No power
[2.5 - 5]	Little interested	Little power
[5 - 7.5]	Interested	Moderate power
[7.5 - 10]	Highly interested	Too much power

In order to present this matrix, we draw a summary table of the actors kept according to the number of points (attributes). We defined a margin of appreciation which allows to quantify the values of the powers and interest according to table 6. Below is a summary of these actors (Figure 1):

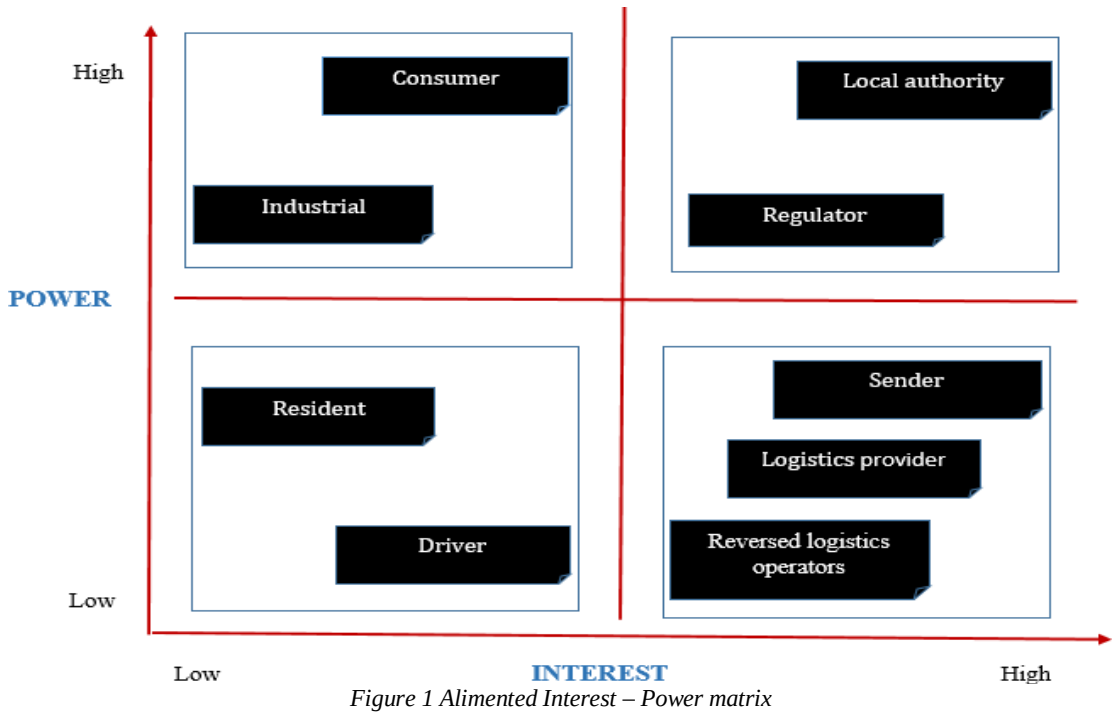

Figure 1 Alimented Interest – Power matrix

Table 6 Retained stakeholders

Stakeholders	N° Points/Attributes	Margin of interest	Margin of power
Government	10	[7.5 - 10]	[7.5 - 10]
Consumer	8	[2.5 - 5]	[7.5 - 10]
Sender	8	[7.5 - 10]	[0 - 2.5]
Industrial	7	[5 - 7.5]	[5 - 7.5]
Resident	7	[0 - 2.5]	[2.5 - 5]
Regulator	7	[0 - 2.5]	[5 - 7.5]
Logistic Provider	6	[5 - 7.5]	[0 - 2.5]
Reverse Logistics Operator	6	[5 - 7.5]	[0 - 2.5]
Driver	6	[2.5 - 5]	[0 - 2.5]

3.3 Decision-making based on 3 elements Interest, Power & Efficiency

In the following section we will justify the values attributed to the interests and powers of the stakeholders. We are going to propose a questionnaire to collect tangible digital data.

The methodology used is composed of 5 distinct phases:

Phase 1 Reorganization of stakeholders

In the preceding analysis, we categorized stakeholders based on their importance without considering their roles in the value chain. For our next analysis, we will divide stakeholders into two groups based on whether they operate within the value chain or play a facilitating role. Figure 2 displays this distribution.

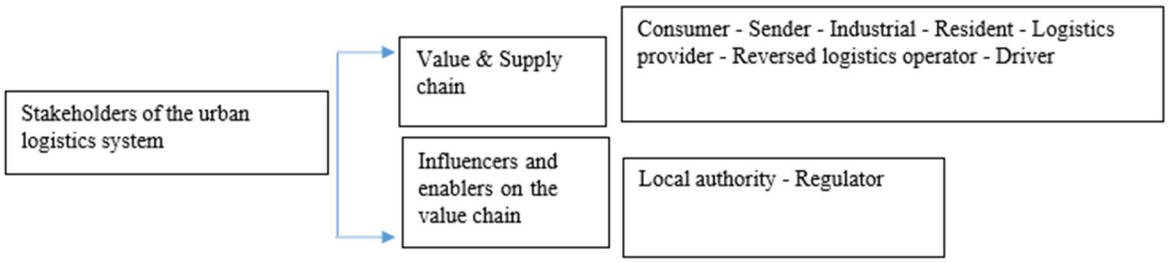

Figure 2 Positioning urban logistics stakeholders in the supply chain

Phase 2 Data gathering

To obtain more realistic data, we created a questionnaire and sent it to various urban logistics entities. Out of 27 recipients, 20 individuals who operate in this field completed the questionnaire. Unfortunately, we were unable to distribute the questionnaire to government entities, which we refer to as public authorities in our analysis. The questionnaire consisted of rating each stakeholder group's power and interest on a scale of 0-3:

0: No power / no interest
1: Low power / low interest
2: Average power / average interest
3: Strong power / strong interest

Question 1: What influence can this group have on the development of urban logistics?

Question 2: How important is each stakeholder group to urban logistics systems?

These same questions were applied to 4 separate themes, as shown in Table 7:

Table 7 Definition of themes used for the analysis

Theme	Definition
Positive societal development	The level of investment in the population so that the latter sees its full positive potential emerge.
Environment's respect	Is based on an attitude respectful of the future of man on planet Earth and of the limited resources in the long term.
Use of SMART means	Use of modes of transport that incorporate new information and telecommunications technologies.
Safety of goods and people	Being able to keep people and transported goods safe during any distribution journey.

Phase 3 Data aggregation

The classification is based on the determination of the powers and interests scores of each stakeholder. The score profiles determine the classification of the clusters of stakeholder groups. Scores are calculated using data collected through a questionnaire detailed in the 2nd phase. After grouping the data, we aggregated the inputs by theme. To do this, we calculated the minimum value, the maximum value as well as the weighted average of each

theme grouping. Note that we work with the weighted mean values for the rest of the analysis. This means that for each actor, we retain the minimum value assigned, the maximum value and we calculate the weighted average.

After obtaining the tables of results for the 2 entries Interest and power for the 4 themes, we must now group them into an overall table. In order to group the data into a single function, we weighted the 4 themes, according to the AHP method, we ranked the order of priority of themes.

We can denote the desired function as follows (1), (2):

$$aXi + bYi + cZi + dTi; \quad (1)$$

$$a + b + c + d = 1; \quad (2)$$

i∈ ⟦1; 9⟧

X, Y, and Z are the average values for each stakeholder expressed by interest and power for all 4 themes. For example, we calculate the mean average of the government's interest and power, applied to the 4 themes mentioned above.

Figure 3 shows the classification of themes resulting from the AHP analysis. The result was the following:

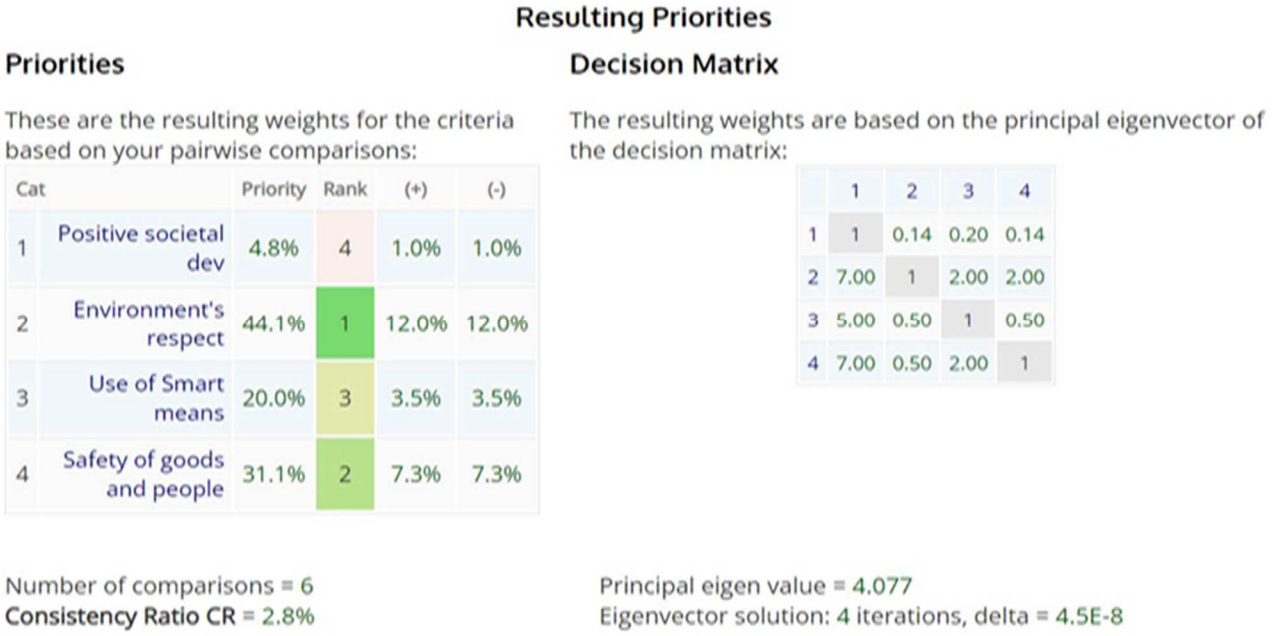

Figure 3 Results of the ranking according to the AHP method

To ensure that the percentages are balanced and accurately reflect the results of the analysis, two post-ranking conditions were imposed using the Analytic Hierarchy Process (AHP):

- No percentage must be less than 10% to be quantified properly in the grouping function.
- Every percentage must be a multiple of 10.

Therefore, the percentage table is slightly modified and is considered as follows (Table 8).

Table 8 Used Importance of Themes in Percentage

Theme	Percent Importance %
Positive societal development	a =10%
Environment's respect	b =40%
Use of SMART means	c =20%
Safety of goods and people	d =30%

Phase 4 Adding a third input

The goal of our work is to create decision graphs that will give us a priority ranking of stakeholders. So, to complete the Interest-Power matrix, we add a third variable, namely, efficiency. It is important to think of a third variable as long as it will make the analysis broader and more focused. Efficiency is a judgment that quantifies the level of achievement of the objectives linked to the function exercised by each player in urban logistics. The treatment of efficiency data corresponds to that used for the other two entries. The stakeholders are positioned on the decision-making function according to the 2 distinct coordinates in 3 different graphs (interest, efficiency), (power, interest), and (efficiency, power).

Phase 5 Decision graphs

The decision graph was plotted based on the results of the stages mentioned above. On a 2D surface, we draw our 2 respective inputs, which are the interest, the power, and the efficiency of each of the stakeholders, according to Table 9:

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Table 9 Table of coordinates

Stakeholders	Retained Value – Interest	Retained Value - Power	Retained Value - Efficiency
Government	2.71	2.55	2.85
Consumer	1.98	1.44	1.23
Sender	1.20	1.41	2.37
Industrial	1.88	1.92	2.57
Resident	1.91	1.07	1.06
Regulator	1.35	1.48	2.11
Logistic provider	1.45	1.26	2.51
Reversed logistics operator	1.45	1.24	2.36
Driver	1.79	2.01	2.00

For the 3 graphs we add a horizontal line $y = mean$ as shown in figure 4, figure 5 and figure 6. This latter presents the minimal value, above which the values may correspond to an important stakeholder.

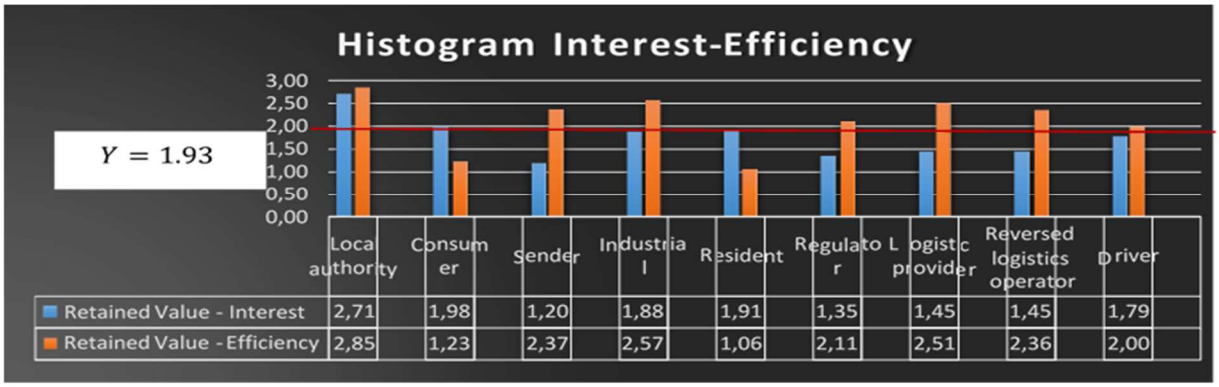

Figure 4 Interest-Efficiency Histogram

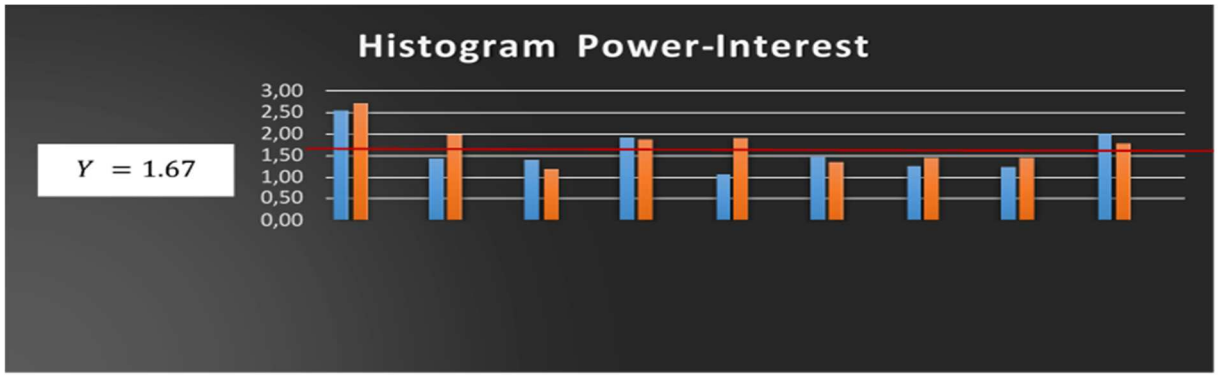

Figure 5 Power-Interest Histogram

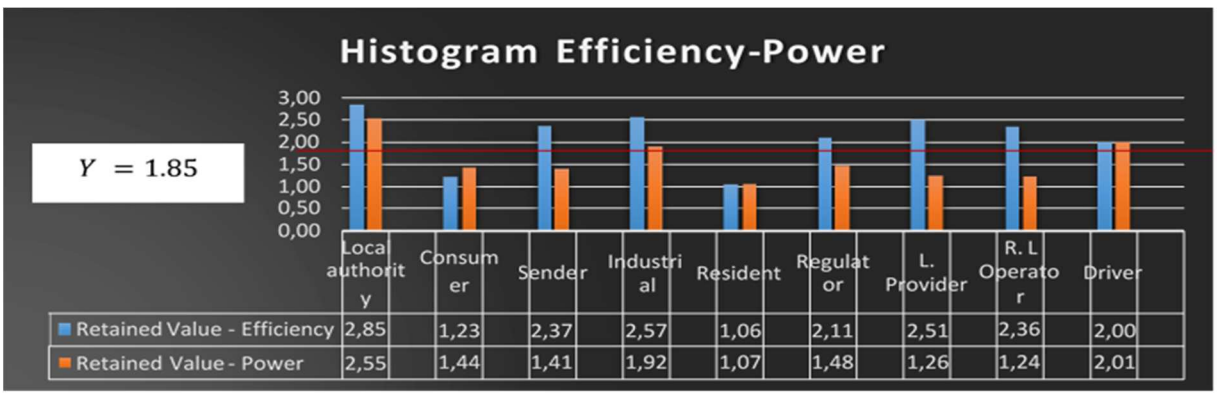

Figure 6 Efficiency-Power Histogram

What is significant for us is the values of powers, interests and efficiency, which exceed the fixed average. We will keep all stakeholders that exceed this threshold for both entries per graph. It is enough for both values to cross the line $Y = Mean$, for it to be considered as an important actor (Mean value which changes according to the order of the histograms).

The basic idea was to compare the results of the graphs, except that in our case the same stakeholders are highlighted. The 3 histograms show that the most important stakeholders are: Government, Industrials or Manufacturers, and Drivers.

3.4 Discussion of results

The previous analysis has shown that drivers, industrials and the authorities represented at this level by the government are the 3 actors on which we must act in the first place in order to better manage urban logistics. The proposed solutions must concern these latter in the first place, once these actors have been treated and concluded to do their tasks correctly, we can move on to the next one.

This judgment seems logical and appropriate to us, since, in Morocco, the government decides on the state of the cities and the logistics. It is an enabler who not only makes decisions on all terms but who has the right to establish a basis of methods and results while controlling the process. The importance of manufacturing and industrial companies stems from the fact that production regulates the entire system of distribution of goods, whether in terms of quantities, frequencies of shipments or transfers, the positioning of intermediate stocks or even reconciliation stock with customers.

4 Conclusions

In recent years, the importance of stakeholders in urban logistics management has become increasingly recognized, and there is a growing need to better understand the roles and interactions of these actors in the delivery chain.

In this paper, we undertook a comprehensive study of stakeholders in urban logistics management. We began by defining the concept of stakeholders and categorized them based on their level of involvement in decision-making since it is a necessary first step in developing effective strategies for urban logistics management. After gathering and comparing the opinions of the authors, we delved deeper into the study by determining the attributes of each actor to better understand their role and positions Our study went beyond a simple categorization of stakeholders and utilized a graphic study based on a questionnaire to categorize and classify the stakeholders. This approach allowed us to identify and prioritize key stakeholders and better understand their impact on the logistics system.

From this study, we can conclude that prioritizing certain actors is necessary when presenting an action plan for urban logistics management. The study revealed two important realities:

The first reality: the consumer, although not integrated into decision-making, is the pioneer of the entire delivery chain and their behaviour should be taken into account.

The second reality: the government, industrialists, and drivers are the three main actors in this chain, with the government being the most important as they directly manipulate urban transport due to their environmental and urban obligations.

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Review process
Single-blind peer review process.