

# Actors' Strategy in Urban Project using MACTOR Tool: Case of Setif Tramway, Algeria

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## Abstract

Any urban project causes a multi-actor management system, meaning its complexity, leading to a success or a failure. The meetings with different actors according to their purposes, has made it possible to reveal a number of strategic issues, on which the actors have convergent or divergent objectives. From this, and through this article, we will try to emphasize actors' role in the Setif tramway project, while identifying the different ones involved in the study, development and exploitation of this project. Based on the "MACTOR" managerial tool, devoted to the analysis of actor strategies, manipulating data from surveys. The latter was carried out with concerned actors, based on a good knowledge of their different objectives and the means that can be mobilized to reach the strategic issues. This will make it possible to determine actors' influences and dependencies, demonstrated by their relationships of forces, and on the other hand, their convergences and differences of interests, by studying their implications and mobilizations on the different objectives of the project. Results shows: the logic of intervention of the different actors, the interaction between them through their influences and dependencies, and identify actors' convergences and divergences, represented in their mobilization on the objectives of the project.

**Key words:** actors' strategy, involvement / mobilization, MACTOR, Setif tramway, urban project.

## INTRODUCTION

The construction of the Setif tramway was a development process, involving a system, represented by three categories of actors (public, private and civil society). This project is an initiative of the Ministry of Transport; this project manager is responsible for the planning and implementation of this infrastructure. It called upon the Enterprise Metro of Algiers (EMA), which was initially entrusted to the province of Setif under the supervision of the governor, and its Transport Directorate (DTW), responsible for the remote management of the project, monitoring and coordination between the various departments concerned. These two latter actors subsequently chaired a steering committee for the follow-up of the project, including a representative of the wilaya, the municipality and each directorate concerned (transport, urban planning, public works, etc.).

These different actors from the public sector, acted within a sphere of public action, to predict the future, regulate, and produce public infrastructure and services (Mezoued, 2015).

The sphere of private actors includes foreign companies involved in the study and implementation of the project. Adding to this a category sometimes public, sometimes private such as: SETRAM and CITAL.

A third category, "civil society", is made up of citizens and their associations, who have always been mobilized to have a collective project that responds to their concerns.

The different actors of the project were shared on the different phases of the project (study, implementation and exploitation), with different forms of configuration; they have been included either upstream directly or indirectly through another actor, or downstream joining the process through conflict. (Mezoued, 2015)

Two configurations were found for the Setif tramway (Figure 01):

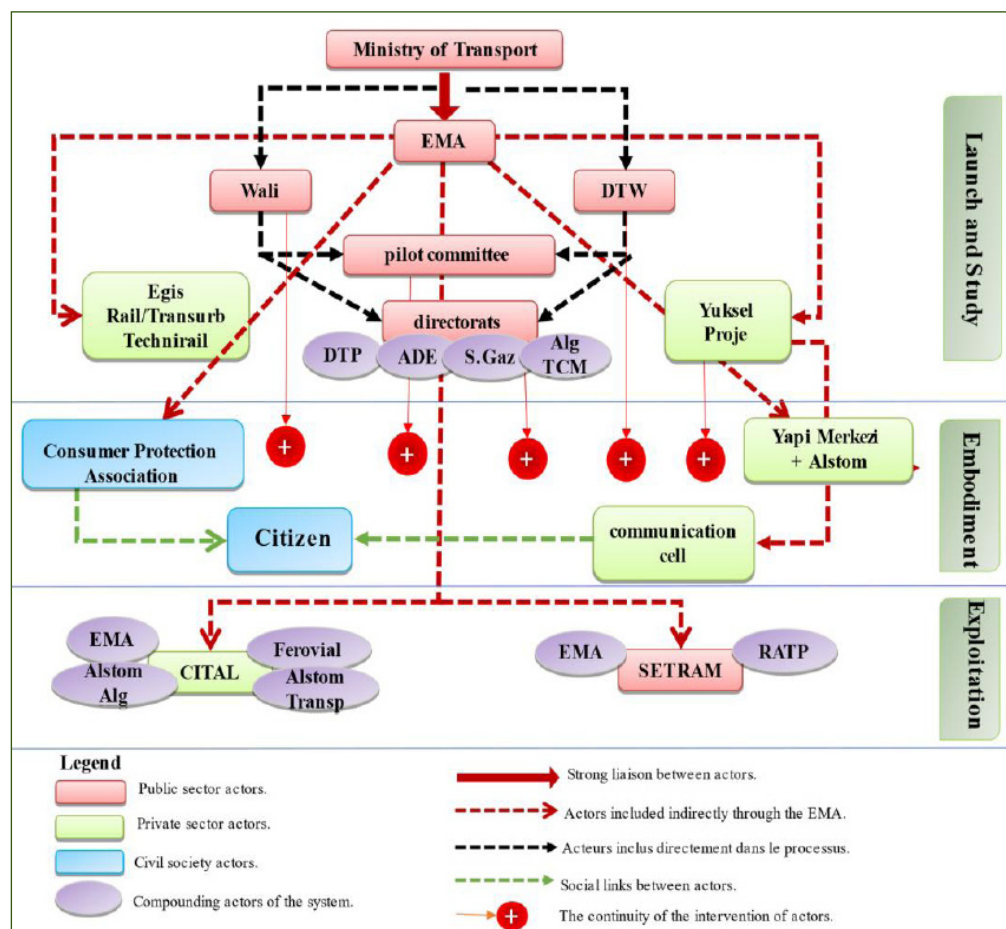
- The first configuration: Players those are automatically included in the project's organizational process.

In particular, public-sector actors are directly involved in the maturation and study of the project, namely: the Ministry of Transport, EMA, the governor and DTW, or indirectly through a supervisory body, namely the various directorates

concerned and the steering committee. In addition, the private sector players involved in an order from the EMA, namely the «Egis Rail-transurb Technirail» group and the «Yuksel Proje» design office. Then, we find the actors involved in the realization, mainly the EMA, which oversees and manages the project manager “Yuksel”, and the manufacturers “Yapi and Alstom”. At the end SETRAM and CITAL, are involved in the last phase, that of operation and maintenance always including the EMA.

- The second configuration: the actors who joined the organizational process of the project late.

These are actors joining the process during the implementation phase, and who were excluded from the upstream phase of the project, considered as passive actors. This configuration represents civil society, namely: the citizens, the cell of communication (which comes to convince the citizens), the association of consumer protection.

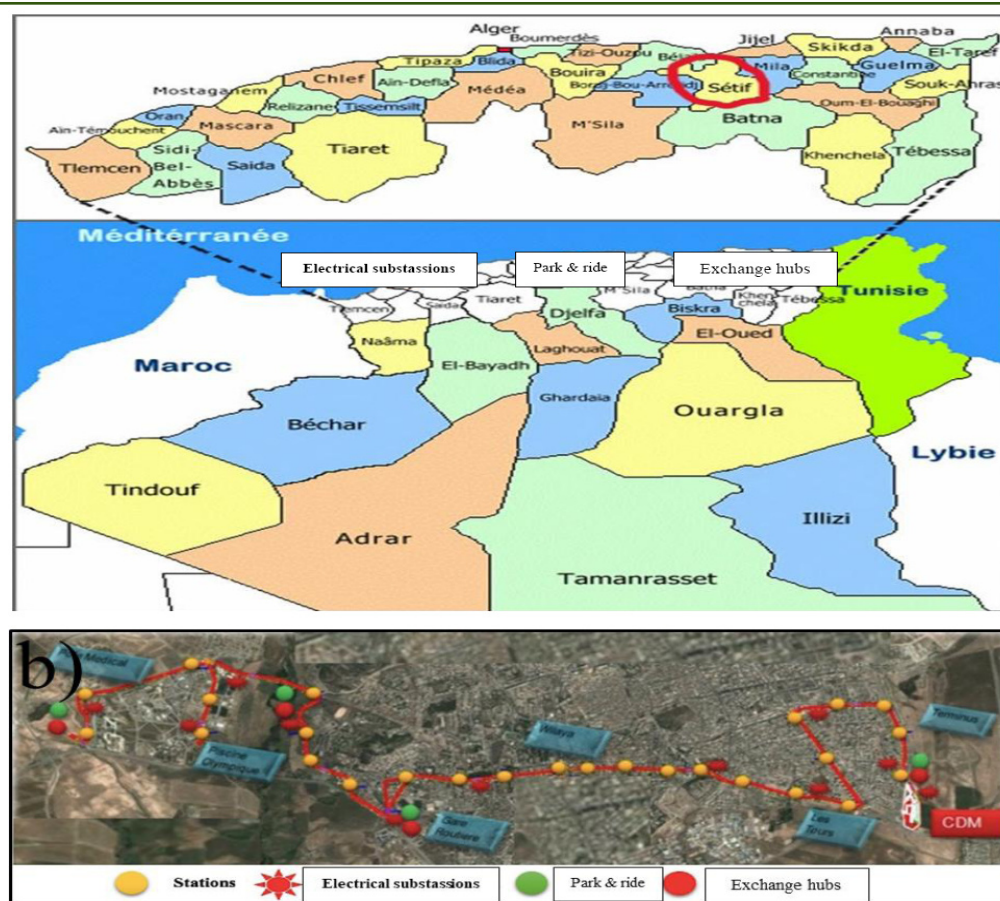


**Figure 1.** Diagram of Actor's involvement in the organizational process of Setif tramway. **Source:** Author, 2020

## STUDY CASE

Setif is one of Algerian's metro poles with more than 1489979 inhabitants installed at more than 1000 meters of altitude. The commune is located 100 km south is located 100 km south of the Mediterranean (figure 02.a). The tramway of Setif with its first line commissioned on May 8, 2018, wants to change the image of the city especially in terms of traffic and mobility. A line of 15.2 km, from the city of 300 dwellings, maintenance center in the East, to the university center 2 (El Bez) in the West, crossing several points in the city center (Ain Fouara, bus station, stadium 8 May 1945, etc.), with 26 train sets manufactured in Annaba of type "Citadis 402", with 20.3km/h speed and a peak capacity of 5,000 passengers/hr. (Sanoussaoui, 2018)

The first line of Setif tramway (figure 02.b), consists of 26 stations, 11 electrical substations, 40 hubs, 6 relay parks, 4 exchanges, and a viaduct and a maintenance center (CDM), consisting of 5 buildings occupying a total area of more than 8 hectares designed and sized to ensure the long-term operation of the tramway lines of the agglomeration of Setif as well as the maintenance of rolling stock. (Yuksel Proje, 2013) (Table 1)



**Figure 2.** a) Location of Setif province b) General characteristics of the first tram line in Setif. **Source :** a) <http://www.carte-algerie.com> visited 01/02/2022. b)(Yuksel Proje, 2013)

**Table 1.** General data on the first line of the Setif tram. **Source:** Author, 2019. from the database of EMA «Entreprise Métrod'Alger»

Contracting Authority	Ministry Of Transport
Delegated contracting authority	Entreprise Métrod'Alger (EMA)
prime contractor	YUKSEL PROJE
Contractor	YAPI MERKAZI + ALSTOM
Operating company	SETRAM Setif
Length	15,2 km
Stations number	26
Park & ride number	06
Exchange Hub Number	04

## METHODOLOGY

The choice of the methodological approach in which our research is based on the survey method is the most suitable qualitative approach in our case and will ultimately support the MACTOR method.

### Field Survey

The survey method will be initiated in different ways depending on the subject of our research, and the appropriate technique for data collection: from a comprehensive survey based on the glimpse, an explanatory survey is a survey which brings people closer through the questionnaire.

## The Interviews Through

Semi-directional interviews targeting the project managers: the project managers and their assistants, the project manager YUKSEL PROJ and the director of the communication cell, as well as the managers of the directorates concerned; Directorate of Transport of the wilaya Setif (DTWS), Enterprise of urbane transport at Setif (ETUS), and the Directorate of Public Works (DTP).

## Questionnaire

With a random sample of 100 people from different social categories (students, traders, employees, etc.), on their information, their involvement and their participation in the different phases of the Setif tramway project.

A first questionnaire was carried out by us, in the form of interviews, accounts kept of the involvement of citizens in the upstream phase (phase of maturation and study) of the project.

A second questionnaire was carried out by the communication unit during the implementation phase of the Setif tramway project, focusing on the knowledge of the citizens of the project, as well as their satisfaction, and their expectations regarding the future effects of the project.

These interviews will allow us to identify the objectives and visions of the different actors of the project, as well as to understand their intervention logic in the different phases of the design.

## Analysis using the Mactor Tool (Actors Method, Objectives, Power Ratio)

The qualitative analysis results obtained by the surveys will be used for quantitative (statistical) analysis using the MACTOR software. Two input matrices representing the basic elements of this MACTOR method have been developed. A first matrix (Actor/actor), in order to evaluate the balance of power between them, and a second matrix (Actor/objective) in order to position each actor in relation to the defined objectives. These two matrices allow to detect the convergences and divergences of the visions, and the objectives of the different stakeholders, in the project.

## RESULTS AND DISCUSSION

### Identification of Actors, Issues and Project Objectives

From the interviews carried out, and the study of the various documents attached to the study of the Setif tramway project, a list of fourteen (14) actors appeared (Table 2). These actors play a central and important role in the development and exploitation of the project and on the future of mobility development and urban dynamics in the city of Setif.

**Table 2.** Actors profiles of Setif tramway project. **Source:** Author, 2020. Using MACTOR software.

N°	Actor Full Title	Short Name	Description
1	Ministry of transport	MT	Project manager, initiator of the project in charge of planning and implementing Setif tramway
2	Setif Gouverneur	WALI	The first representative of Setif province, responsible for the follow-up, decision and advancement of the project through its political portage
3	Transport Directorate	DTW	Representative of the Ministry of Transport at the level of province
4	(Entreprise Métrod' Alger)	EMA	Public company responsible for managing metro and tram projects across the country
5	Pilot committee	CP	Assistant of pilotage and monitoring of the project, has the mission to accompany the project and to guarantee the removal of all obstacles, consisting of a representative of the municipalities of the province (APW) and the municipality (APC) as well as a representative of each directorate concerned by the project.



6	Directorates	DRTS	The different directorates of the province concerned by the tramway: *the public works directorate (DTP) for the realization of the works of art, * the hydraulics directorate for the displacement of the pipes, * Algeria telecom for telecommunications and electricity to move cables, etc.
7	Group "Egis rail/Transurb technical rail"	GRP	A Franco-Belgian group responsible for the feasibility study of the Setif tramway.
8	Yuksel Proje	YUKSEL	A Turkish design office responsible for the detailed preliminary design study, as well as the monitoring and realization of construction of the Setif tram.
9	Contractor "YapiMerkezi/Alstom"	CONST	Design offices in charge of the Setif tramway realization.
10	Citizen	CIT	Inhabitants, traders and future users of the Setif tram.
11	communication cell	CC	A cell subordinated to the YukselProje, responsible for disseminating all information to the public.
12	Consumer Protection Association	APQPC	An association responsible for conveying citizens' concerns to those responsible for the project.
13	Operating company	SETRAM	Company responsible for commissioning the Setif tramway.
14	CITAL	CITAL	Algerian industrial transport company in charge of project maintenance and trainsets.

A total of twelve (12) objectives have been identified (Table 3), which have been the subject of a formalization of the actors' fairly precise expressions, and which have been grouped into four major "Issues" families, inscribed in the long term

**Table 3.** Objectives/Challenges of the Setif tramway project. **Source:** Author ,2020. Using MACTOR software.

	Descriptions	Titles	Challenges
1	Meeting displacement needs.	needs	<b>Mobility</b>
2	Improving the transport service.	Comfort	
3	Creating car alternative.	modal shift	
4	Linking different transport modes. (complementarity)	Intramodality	
5	Reorganize the traffic plan.	Circulation	
6	Relieve congestion in the city-center and connect traffic generating poles.	Traffic	
7	Modernizing the image of the city of Setif.	Attractivity	<b>Modernization</b>
8	Develop competitiveness and economic investment.	Competitivity	
9	environmental protection.	Environmental	<b>Durability</b>
10	Achieving cohesion and social equity through citizen participation.	Social	
11	Renovate, restructure, renew and redevelop the urban space.	Urban improvement	<b>Urban Development</b>
12	Creating coherence between mobility and urban planning.	Coherence	

### Actor/Actor and Actor/Objectives Relationship

#### Direct Influence Matrix (MID)

This matrix describes the direct influences between actors (figure 03), while measuring the ability of each actor to influence each other.

Through these indicators, we can see that the direct influence of one actor on the other differs according to their logic, their possibility in terms of regulation, and in relation to their legitimacy, according to their role, and especially their hierarchy. (Fabrice, 1993), (Mouhoubi, 2017).

- 0 When actor "i" has little or no influence on actor "j".
- 1 When actor "i" may question the operational process of managing actor "j"
- 2When actor "i" may question the success of actor "j" projects.
- 3When actor "i" may question the performance of actor "j"s" missions.
- 4When actor "i" may question the existence of actor "j"

MID	MT	WALI	DTW	EMA	CP	DRTS	GRP	YUKSEL	CONST	CIT	CC	APQPC	SETRAM	CITAL
MT	0	2	3	4	0	0	3	3	3	1	0	0	3	0
WALI	1	0	2	1	4	3	3	3	3	2	1	4	2	0
DTW	1	2	0	1	2	2	3	3	3	1	0	0	2	0
EMA	1	2	1	0	2	2	4	4	4	2	3	3	4	4
CP	0	2	0	1	0	3	0	3	3	0	0	0	0	0
DRTS	0	1	2	1	0	0	1	1	0	0	0	0	0	0
GRP	0	0	0	1	0	0	0	1	0	0	0	0	0	0
YUKSEL	0	0	0	1	1	0	0	0	3	1	3	0	0	0
CONST	0	0	0	1	1	0	0	1	0	0	4	0	0	0
CIT	2	2	1	1	0	0	0	0	1	0	3	3	2	0
CC	0	0	0	1	0	0	0	1	0	1	0	0	0	0
APQPC	0	2	0	1	0	0	0	0	0	1	0	0	0	0
SETRAM	0	2	1	1	0	0	0	0	0	1	0	0	0	1
CITAL	0	0	0	1	0	0	0	0	0	0	0	0	1	0

**Figure 3.** Actors Direct Influence Matrices (MID) **Source:** Author ,2020. Using MACTOR software.

### **The Minister of Transport**

By its force of law and its political position, determines the existence of the delegated contracting authority (EMA), through which it may subsequently question the performance of the tasks of the project manager responsible for the study, the implementation and operation of the Setram tramway project (SETRAM). It determines the tasks of the transport directorate and influences the success of the project, and the operational process of the citizens vis-à-vis the decisions taken.

### **The Governor (Province Governor)**

As the first representative of Setif province, he has a political portage that allows him to question the operational process of the Minister of Transport and the EMA.

The governor has determined a steering committee (existence) for the monitoring of the realization, with which it has been able to judge subsequently the accomplishment of the tasks of the project management, and the different directions concerned by the Setif tramway.

To ensure the success of the project, the governor has partnered with DTW and SETRAM. He insisted on involving citizens in the project while facilitating the operational process of the communication unit (authorizations), and soliciting the consumer protection association of Setif (APQPC).

### **The Direction Des Transports De Setif (DTW)**

As a representative of the Ministry of Transport at the wilaya level, it had the prerogatives to influence the operational process of the Minister of Transport and the EMA, as well as that of the citizens. It influences the project process in relation to the governor; the steering committee and the different directorates (coordination) to fulfill its role.

### **The Algiers Metro Company (EMA)**

As authorizing officer of the project, it influences the operational process of the Minister of Transport, the DTW, as well as the project process in relation to the governor; the steering committee, the various directorates and the citizens,

while taking into consideration the concerns of the various stakeholders in the project. It appointed the project manager during all phases of the project, and launched the various calls for tenders, in addition it determined the missions of the various bodies to support the project.

### Project Management

The group responsible for the feasibility study influences only the operational process of EMA and YUKSEL. The latter appointed the tasks of the manufacturer in charge of the project implementation, which influenced the operational process of the steering committee through its schedule validated by YUKSEL, under the supervision of the EMA.

### Citizens

In their turn, they played a very important role especially in the realization phase, and more or less in the exploitation phase. Indeed, they have influenced:

- The success of the project in relation to the Minister of Transport, the province governor and SETRAM (attendance and behavior change)
- The operating process of the EMA (the situation of the merchants) and the manufacturer (progress of the site)
- Carrying out the tasks of the communication unit and the association.

### Matrix of Assessed Positions Actors/Objectives (MAO)

This matrix (figure 04) describes, for each actor, both his valence on each of the objectives (favorable, opposed, neutral or indifferent) and his hierarchy of objectives (Bernoux P., Bion, Cohen, & Meunier-Chabert, 2001), (BEREZOWASKA. AZZAG, 2012).

0	The goal is small
1	The objective calls into question the operative processes (management, etc. ...) of the actor/ is essential to its operative processes
2	The objective calls into question the success of the actor's projects/ is essential to his projects
3	The objective calls into question the fulfilment of the actor's missions/ is essential to its missions
4	The objective calls into question the actor in his existence; is indispensable to his existence

2MAO	Besoins	Confort	Report	Modalité	Circulatio	Traffic	Attract	Compétitiv	Coherence	Environnem	Social	AM.Urb
MT	4	4	4	4	2	2	2	2	2	2	2	2
WALI	2	2	2	2	1	2	4	4	2	2	4	2
DTW	4	2	3	2	4	2	2	2	3	2	2	2
EMA	4	4	3	3	2	3	2	2	2	2	3	2
CP	0	0	0	0	0	0	0	0	0	0	0	0
DRTS	0	0	0	0	0	-2	2	0	3	0	0	3
GRP	3	3	1	1	0	1	0	0	1	1	1	0
YKSEL	3	1	1	3	0	1	1	0	1	1	3	1
CONST	0	0	0	0	0	0	0	0	0	0	0	0
CIT	0	0	0	0	0	-2	0	0	0	0	4	2
CC	0	0	0	0	0	0	0	0	0	0	3	0
APQPC	0	0	0	0	0	0	0	0	0	0	3	1
SETRAM	2	2	2	2	0	0	2	2	0	0	2	0
CITAL	0	3	0	0	0	0	0	0	0	0	0	0

**Figure 4.** Matrix of assessed actors' positions on project objectives (MAO). **Source:** Author, 2020. Using MACTOR software.

Meeting travel needs and improving transportation service, while ensuring modal shift and increased intermodality, were the strategic and fundamental objectives on which the decision to set up a tramway in Setif was led by the Minister of Transport. These objectives were taken over by the DTW and the EMA in their missions through the devoted budget and the specifications issued to the project manager who must follow him in his operational process.

The project manager has taken “the linking of traffic generating poles and the alleviation of congestion in the heart of the city of Setif” as major objectives for the success of the project (against which the citizens and the departments concerned have expressed their disagreement), while respecting the environment (environmental impact assessment) in order to carry out its missions.

These objectives prove to be a road map for success on a large scale, while ensuring social cohesion. The latter represented the overriding interest of the majority of actors.

Improving the living environment of citizens through the tramway project means improving their mobility as users, and thus improving their urban spaces as inhabitants, through urban improvement operations related to the integration of the tramway.

## From Involvement to Mobilizing Actors on Project Objectives

### Positioning of the Actors in Relation to the Identified Objectives

The manipulation of the actors/objectives input matrix (MAO) by the MACTOR software made it possible to determine the simple positioning of the actors on the objectives determined through the 1MAO matrix (figure 05), which indicates on one side the number of actors ‘concerned by each objective, and on the other hand the number of objectives for which each of the actors is for, against or indiffent (Schmidt, 1999).

IMAO	Besoins	Confort	Report	Modellé	Circulatio	Traffic	Attract	Compétitiv	Coherence	Environnem	Social	AMU/b	Somme absolue
MT	1	1	1	1	1	1	1	1	1	1	1	1	12
WALI	1	1	1	1	1	1	1	1	1	1	1	1	12
DTW	1	1	1	1	1	1	1	1	1	1	1	1	12
EMA	1	1	1	1	1	1	1	1	1	1	1	1	12
CP	0	0	0	0	0	0	0	0	0	0	0	0	0
DRTS	0	0	0	0	0	-1	1	0	1	0	0	1	4
GRP	1	1	1	1	0	1	0	0	1	1	1	0	8
YKSEL	1	1	1	1	0	1	1	0	1	1	1	1	10
CONST	0	0	0	0	0	0	0	0	0	0	0	0	0
CIT	0	0	0	0	0	-1	0	0	0	0	1	1	3
CC	0	0	0	0	0	0	0	0	0	0	1	0	1
APQPC	0	0	0	0	0	0	0	0	0	0	1	1	2
SETRAM	1	1	1	1	0	0	1	1	0	0	1	0	7
CITAL	0	1	0	0	0	0	0	0	0	0	0	0	1
Nombre d'accords	7	8	7	7	4	6	7	5	7	6	10	8	
Nombre de désaccords	0	0	0	0	0	-2	0	0	0	0	0	0	
Nombre de positions	7	8	7	7	4	8	7	5	7	6	10	8	

**Figure 5.** Simple position of the actors on the objectives of the Setif tramway project. Source: Author ,2020. Using MACTOR software.

Through this matrix we can see that 86% of the actors (12/14) are directly concerned by the various objectives, with a positioning that varies from 1 to 12, including the Minister of Transport, the governor, the DTW and the EMA, are positioned on all fields.

### Actors' Involvement Through Project Objectives

This matrix (figure 06) completes the actors' simple position matrix (1MAO). It indicates the “valued” position of each actor on each of the objectives, and makes it possible to show the “involvement” of each actor on the objectives, which takes into account the importance that the actor attaches to each objective (Schmidt, 1999).

The 2MAO matrix specifies the level of involvement on each objective. From these, three categories of actors concerned were deduced:

- actors most involved

They are affected by all the objectives (12/12), whose level of involvement is greater than 25 (Gansanore, Sodore, & Ouédraogo, 2020), such as the Minister of Transport and EMA (32), the DTW (30) and the governor (29).

The high intensity of involvement of these actors essentially defines the means of action at their disposal: decisions, arbitration, political steering, financing, consensus building and resource mobilization. These actors are at the heart of the project, to some extent they are able to make themselves heard.



- actors least involved

Their level of involvement is the lowest (below 10). This is in descending order of involvement: the citizens (8), the association (4), CITAL and the communication cell (3). These actors are associated with one or two objectives with very limited actions: opposition by force (demonstrations), proposals, maintenance, etc.

Players directly involved in the game (implicated):

They are concerned for at least (7/14) objectives, whose level of involvement is between 10 and 25, Yuksel (16), SETRAM (14), Grouping (12), and Directorates (10).

2MAO	Resolus	Confort	Report	Modalité	Circulatio	Trafic	Attract	Compétitiv	Coherence	Environnem	Social	AM.Lrb	Somme absolue
MT	4	4	4	4	2	2	2	2	2	2	2	2	32
WALI	2	2	2	2	1	2	4	4	2	2	4	2	29
DTW	4	2	3	2	4	2	2	2	3	2	2	2	30
EMA	4	4	3	3	2	3	2	2	2	2	3	2	32
CP	0	0	0	0	0	0	0	0	0	0	0	0	0
DRTS	0	0	0	0	0	-2	2	0	3	0	0	3	10
GRP	3	3	1	1	0	1	0	0	1	1	1	0	12
YKSEL	3	1	1	3	0	1	1	0	1	1	3	1	16
CONST	0	0	0	0	0	0	0	0	0	0	0	0	0
CIT	0	0	0	0	0	-2	0	0	0	0	4	2	8
CC	0	0	0	0	0	0	0	0	0	0	3	0	3
APQPC	0	0	0	0	0	0	0	0	0	0	3	1	4
SETRAM	2	2	2	2	0	0	2	2	0	0	2	0	14
CITAL	0	3	0	0	0	0	0	0	0	0	0	0	3
Nombre d'accords	22	21	16	17	9	11	15	12	14	10	27	15	
Nombre de désaccords	0	0	0	0	0	-4	0	0	0	0	0	0	
Nombre de positions	22	21	16	17	9	15	15	12	14	10	27	15	

**Figure 6.** Valuated positions of the actors on the objectives of the Setif tramway project. **Source:** Author ,2020. Using MACTOR software.

### Actors Mobilization on the project objectives

The simple consideration of the level of involvement of actors in the achievement of objectives using the matrix (2MAO) is not sufficient to highlight the center of gravity of the actors' game, and to determine the most mobilizing objectives (Bouzaiane & Mouelhi, 2008). To do this, it is necessary to take into account the balance of power (Ri) between actors, in order to identify their respective degree of mobilization on all objectives (3MAO) (figure07). This makes it possible to estimate the real or concrete interest of the actors' commitment to the objectives. The degree of mobilization of each actor in the process of achieving the objectives is determined by making the product between the balance of power and the level of involvement (Bernoux P, Bion, Cohen, & Meunier-Charbet, 2001)

3MAO	Resolus	Confort	Report	Modalité	Circulatio	Trafic	Attract	Compétitiv	Coherence	Environnem	Social	AM.Lrb	Mobilisation
MT	11,6	11,6	11,6	11,6	5,8	5,8	5,8	5,8	5,8	5,8	5,8	5,8	92,6
WALI	3,9	3,9	3,9	3,9	2,0	3,9	7,9	7,9	3,9	3,9	7,9	3,9	57,2
DTW	7,2	3,6	5,4	3,6	7,2	3,6	3,6	3,6	5,4	3,6	3,6	3,6	54,0
EMA	8,4	8,4	6,3	6,3	4,2	6,3	4,2	4,2	4,2	4,2	6,3	4,2	67,3
CP	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
DRTS	0,0	0,0	0,0	0,0	0,0	-1,5	1,5	0,0	2,2	0,0	0,0	2,2	7,3
GRP	0,4	0,4	0,1	0,1	0,0	0,1	0,0	0,0	0,1	0,1	0,1	0,0	1,6
YKSEL	1,0	0,3	0,3	1,0	0,0	0,3	0,3	0,0	0,3	0,3	1,0	0,3	5,2
CONST	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
CIT	0,0	0,0	0,0	0,0	0,0	-2,6	0,0	0,0	0,0	0,0	5,2	2,6	10,4
CC	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,5	0,0	0,5
APQPC	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	1,7	0,6	2,3
SETRAM	1,4	1,4	1,4	1,4	0,0	0,0	1,4	1,4	0,0	0,0	1,4	0,0	9,5
CITAL	0,0	0,6	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,6
Nombre d'accords	33,9	30,2	29,0	27,9	19,2	20,1	24,6	22,8	22,0	18,0	33,4	23,2	
Nombre de désaccords	0,0	0,0	0,0	0,0	0,0	-4,0	0,0	0,0	0,0	0,0	0,0	0,0	
Degré de mobilisation	33,9	30,2	29,0	27,9	19,2	24,1	24,6	22,8	22,0	18,0	33,4	23,2	

**Figure 7.** valuated weighted position of actors on the objectives of the Setif tramway project. **Source:** Author, 2020. Using MACTOR software.

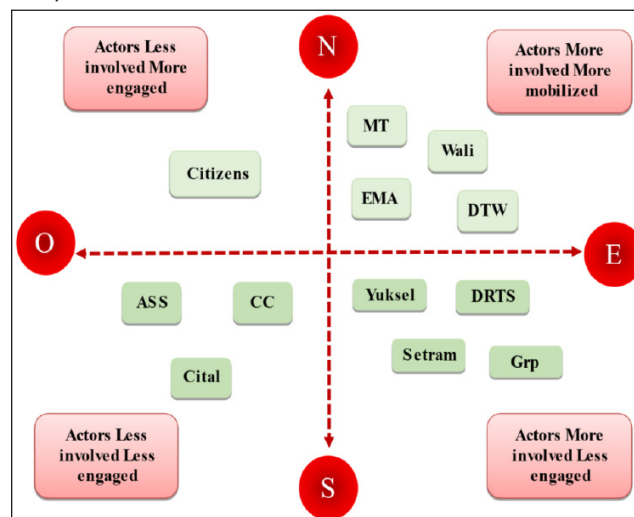
### Most Mobilized Actors

Are the actors quite strongly involved, and who have the highest balance of power. They are, in fact, more concerned and engaged, given the stakes and objectives chosen for the construction of this project (Bouzaiane & Mouelhi, 2008). These are the Minister of Transport (92.9), EMA (61.1), The governor (59.2) and DTW (54.4). (Figure 08)

### Actors Least Involved

The other actors have a very low mobilization indicator (less than 10), this is due to their low level of involvement, and their balance of power. Apart from the citizens, their mobilization is more or less weak (=10.4) due to their very low involvement in the objectives (they are in a favorable position only for the social objective, and for urban improvement, and in an unfavorable position for the objective of reducing congestion in the city center), when their power ratio is above the average ( $R_i$  citizens=1.3).

The pooling of the levels of involvement and mobilization of the actors allowed us to establish a typology of the actors, represented in the plan implication/mobilization.



**Figure 8.** Implication /mobilization of the actors in relation to the objectives of the Setif tramway.

**Source:** Author, 2020.

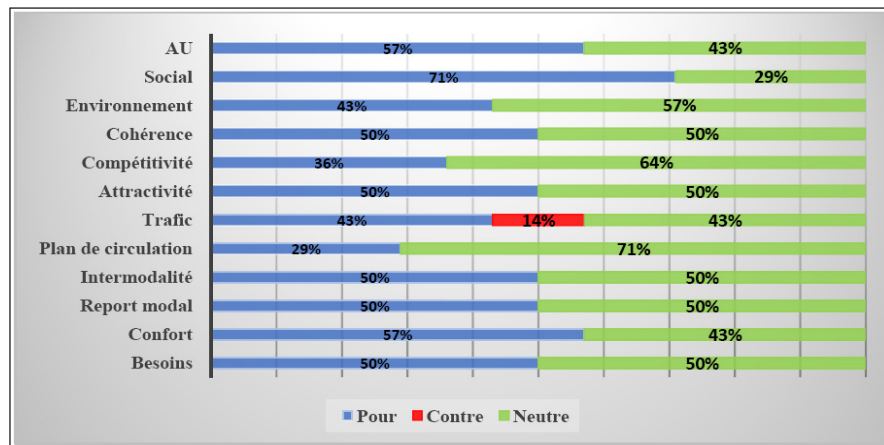
### Consensus on Project Objectives

With regard to the evaluation of the number of positions of actors on the various objectives of the Setif tramway project (1MAO matrix), eleven (11/12) objectives out of the twelve (12) selected receive only agreements. 84% of the actors are for or in a neutral (favorable) position in relation to all the objectives. Only one opposition can be observed at the level of the sixth objective (reduction of congestion in the city center), comes from the two actors, representing 25% of the actors concerned (2/8):

- Citizens who express their disagreement with the passage of the tramway through the city center for economic and social reasons, demonstrate especially during the construction phase.
- The directorates (DTP, Sonelgaz, etc.) are against, given the scope of the operations that affect more than 90% of the road networks of Setif city.

Starting from the principle that an objective indicates a consensus if more than 75% of the actors are in favor of its achievement. Conversely, if more than 75% of actors are opposed to a target, then it is subject to dissension" (Godet, 1997), all targets are consensual, of which (11/12) targets are the subject of unequivocal consensus with 100% agreement. As a result, the objectives of the Setif tramway project constitute a "base of collective interest" (Bassaler, 2004). The consensus of the objectives of the project, is determined from the 2MAO matrix, allowing to influence the intensity of the "pros" and "cons", especially those who receive the same number of agreements in the simple positioning of the actors on the objectives (1MAO matrix) (figure 09):

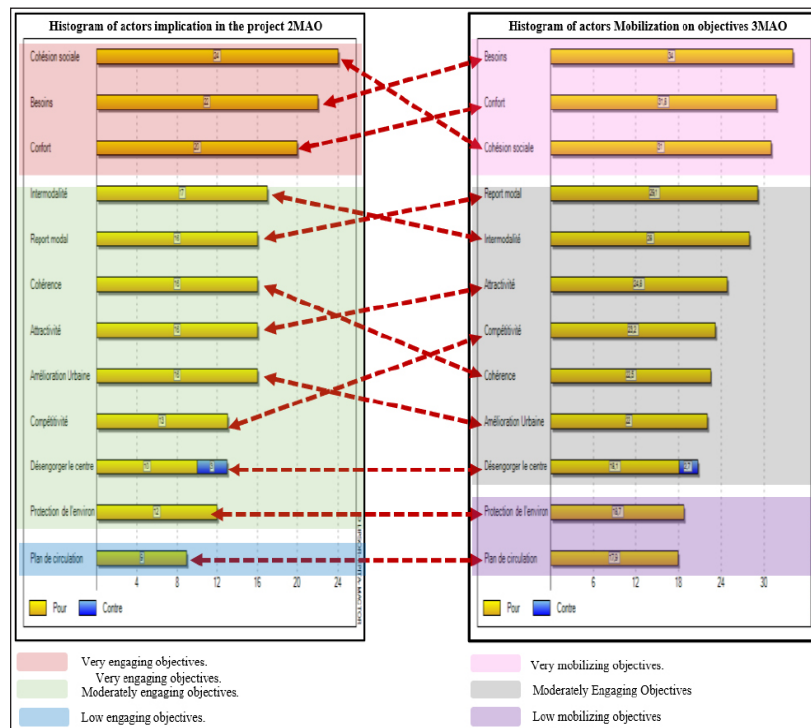
- The objectives: Comfort, AU, Traffic, with (08) agreements.
- The objectives: Need, Report, Intermodality, Attractiveness, Coherence, with (07) agreements.



**Figure 9.** Agreements and disagreements rates regarding the objectives of the Setif tramway. **Source:** Author ,2020.

### The Most Engaging and Mobilizing Objectives for Actors

The examination of the “valued” positioning (2MAO) and the “valued and weighted” positioning (3MAO) of the actors on the objectives of the Setif tramway project, specifically taking into account the indicators of involvement and mobilization, it has enabled to identify the objectives that involve, and those that most strongly mobilize the actors.



**Figure 10.** Comparative diagram betweenactors' implication and mobilizationin Setif tramway. **Source:** Author ,2020. Using MACTOR software.

By comparing the ranking of the objectives involving and mobilizing, we find that taking into account the balance of power (Ri) does not fundamentally change the ranking of objectives (The “Needs” objective ranks first instead of the “social” objective, the “Modal Report” objective from the 5th to the 4th position, etc.). The only change that seems significant is the downgrading of the “Environmental Protection” objective from a medium-level target with a low level of interest.

Through this comparison, three (3) groups of objectives emerged:

The main objectives (which are at the heart of the game, and which represent the key factors around which the dynamics and management of the Setif tramway project are organized) involve and strongly mobilize the actors:

- The “Need” objective (Obj.01) that addresses travel deficits.
- The “Comfort” objective (Obj.02) to improve the urban transport service in the city of Setif.
- The “Social” objective (Obj.11) of achieving social cohesion.

Second-tier objectives, involving and moderately mobilizing: actors whose center of the game can only be completed through these objectives:

- The “Mobility” challenge through the “Intermodality” objective (Obj.04), creating complementarity between the different modes of transport.
- The “Modernization” challenge to make the city of Setif more attractive (Obj.07) and more competitive (Obj.08).
- The urban issue «Urban development», ensuring coherence between mobility and urban planning (Obj.09), urban improvement (Obj.12) and a reduction of congestion in the city center (Obj.06).

Objectives of third rank, which involve and mobilize actors weakly.

- Speaking of the DTW goal of “Reorganizing the Traffic Plan” (Obj.05), and the goal of “Environmental Protection” for (Yuksel) (Obj.10).

### Convergence between Actors of the Setif Tramway Project

The more convergences there are, the closer the actors are, and the more similar their mobilizations are (Jaziri & Bousaffa, 2007). The similarity of the positions of the actors to the majority of the objectives adopted has shown the important relationships of proximity that exist between them, through the number of potential alliances between actors (matrix 1CCA) (figure 11), their intensities integrate by each actor their hierarchy of objectives (preferences), and their power ratio. High polarity is translated by a degree of convergence (96.3%).

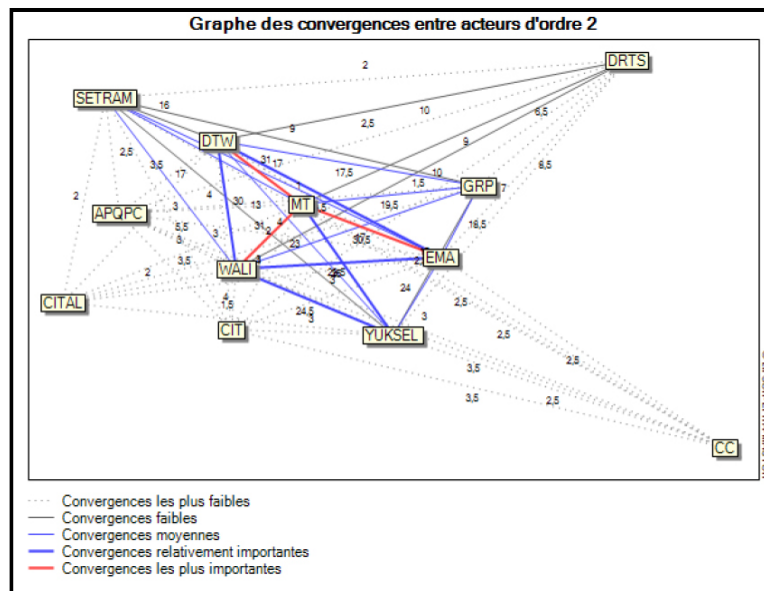
A great convergence of interests and objectives is between the four (04) actors of the first rank, the most involved and the most mobilized: ministry of transport, The governor, EMA and DTW, which could be a guarantee of success for the project and the achievement of its objectives.

ICAA	MT	WALI	DTW	EMA	CP	DRTS	GRP	YKSEL	CONST	CIT	CC	APQPC	SETRAM	CITAL
MT	0	12	12	12	0	3	8	10	0	2	1	2	7	1
WALI	12	0	12	12	0	3	8	10	0	2	1	2	7	1
DTW	12	12	0	12	0	3	8	10	0	2	1	2	7	1
EMA	12	12	12	0	0	3	8	10	0	2	1	2	7	1
CP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DRTS	3	3	3	3	0	0	1	3	0	2	0	1	1	0
GRP	8	8	8	8	0	1	0	8	0	1	1	1	5	1
YKSEL	10	10	10	10	0	3	8	0	0	2	1	2	6	1
CONST	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CIT	2	2	2	2	0	2	1	2	0	0	1	2	1	0
CC	1	1	1	1	0	0	1	1	0	1	0	1	1	0
APQPC	2	2	2	2	0	1	1	2	0	2	1	0	1	0
SETRAM	7	7	7	7	0	1	5	6	0	1	1	1	0	1
CITAL	1	1	1	1	0	0	1	1	0	0	0	0	1	0
Number of convergences	70	70	70	70	0	20	50	63	0	17	9	16	44	7

**Figure 11.** Simple convergence of objectives between the actors of the Setif tramway project. Source: Author ,2020. Using MACTOR software.

As a result, these actors are the coordinators of all the processes that lead to decision-making, of which the Minister of Transport is the most convergent and rational actor. It's important alliances with its delegates, give them to converge in a relatively important way, working in complementarity, and addressing this initiative to the project leader (YUKSEL) Following a roadmap adopting all the objectives in its operating process, give an important part to each objective in the detailed preliminary design study, creating a relatively important convergence scene with the various stakeholders.

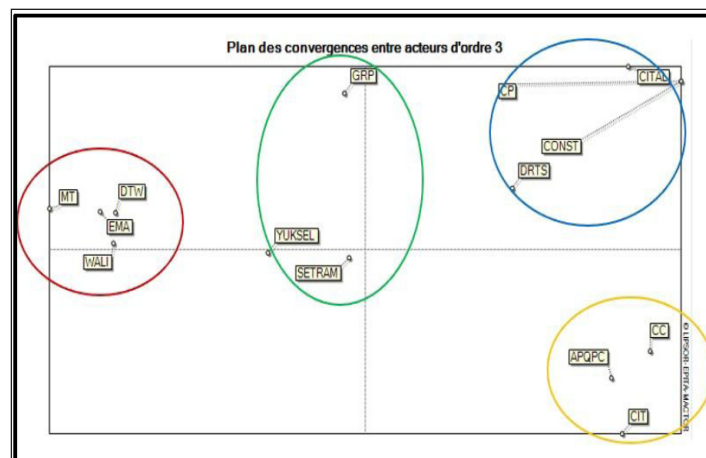




**Figure 12.** Graph of Convergence between the actors of the Setif tramway project. Order 2. Source: Author ,2020. Using MACTOR software.

(Figure 13) Shows the weak relationship of convergences, which are recorded among the directions and citizens. This configuration indicates on the one hand the limited task of the different directions involved in the project, explaining their local interests, and on the other hand the weak involvement of citizens in the decision-making process (maturation phase), which is reflected in different opinions about the passage of the tram through the city center of Setif.

The analysis of the plan of convergences of the actors on the objectives of the project of tramway of Setif, has made it possible to make an overlap between each group of actors taking into account the convergence of the associated objectives of each relative to the others.

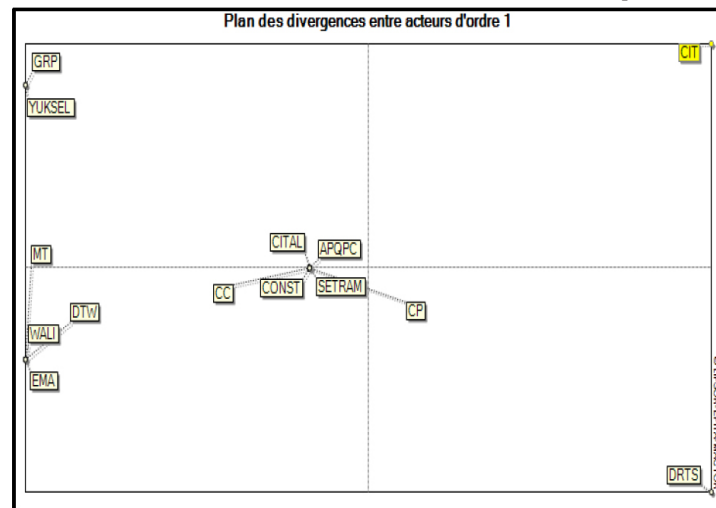


**Figure 13.** Convergence map between the actors of the Setif tramway project. Order 3 Source: Author ,2020. Using MACTOR software.

- A group interested in the tramway as an urban project and not just a transport project (MT, EMA, governor, DTW).
- A group that is interested in the project as a social project (Citizens, Communication Cell and Consumer Protection Association).
- A group of actors interested in this infrastructure as a product that must contain all the requirements requested (YUKSEL, SETRAM and the grouping).
- A group requested for specific missions and objectives, without taking into account whether or not this project will succeed (Cital, management, steering committee and manufacturer).

## Divergences between Actors

The objectives of the Setif tramway are a basis of collective interest. The importance of the convergences detected between the actors (96.3%) prevails over the intensity of the divergences estimated at 3.7% (figure 14). The plan of simple divergences between actors, elaborated at the base of the 1DDA matrix, identifying the opposite positioning between actors, shows the distance of the two actors: citizens and directions compared to the other speakers.



**Figure 14.** Divergence Map between the actors of the Setif tramway project. Order 1. Source: Author ,2020. Using MACTOR software.

The valued divergences of objectives between actors have made it possible to highlight the potential conflicts around the actors involved according to their intensity (Figure 15), including:

- Directorates and citizens represent the most diverse actors, with an intensity of 11.5.
- The actors mobilizing the objectives of the project (project owners), have a relatively low intensity of divergence, EMA (5) and (4) for the Minister of Transport, The governor and DTW.
- The project managers: YUKSEL and Groupement, have a low intensity of divergence (3).

2DAA	MT	WALI	DTW	EMA	CP	DRTS	GRP	YUKSEL	CONST	CIT	CC	APQPC	SETRAM	CITAL
MT	0,0	0,0	0,0	0,0	0,0	2,0	0,0	0,0	0,0	2,0	0,0	0,0	0,0	0,0
WALI	0,0	0,0	0,0	0,0	0,0	2,0	0,0	0,0	0,0	2,0	0,0	0,0	0,0	0,0
DTW	0,0	0,0	0,0	0,0	0,0	2,0	0,0	0,0	0,0	2,0	0,0	0,0	0,0	0,0
EMA	0,0	0,0	0,0	0,0	0,0	2,5	0,0	0,0	0,0	2,5	0,0	0,0	0,0	0,0
CP	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
DRTS	2,0	2,0	2,0	2,5	0,0	0,0	1,5	1,5	0,0	0,0	0,0	0,0	0,0	0,0
GRP	0,0	0,0	0,0	0,0	0,0	1,5	0,0	0,0	0,0	1,5	0,0	0,0	0,0	0,0
YUKSEL	0,0	0,0	0,0	0,0	0,0	1,5	0,0	0,0	0,0	1,5	0,0	0,0	0,0	0,0
CONST	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
CIT	2,0	2,0	2,0	2,5	0,0	0,0	1,5	1,5	0,0	0,0	0,0	0,0	0,0	0,0
CC	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
APQPC	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
SETRAM	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
CITAL	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Number of divergences	4,0	4,0	4,0	5,0	0,0	11,5	3,0	3,0	0,0	11,5	0,0	0,0	0,0	0,0
Degree of divergence (%)	3,7													

**Figure 15.** Valuated divergence of objectives between the actors of the Setif tramway project. Order2

**Source:** Author; 2020. Using MACTOR software.

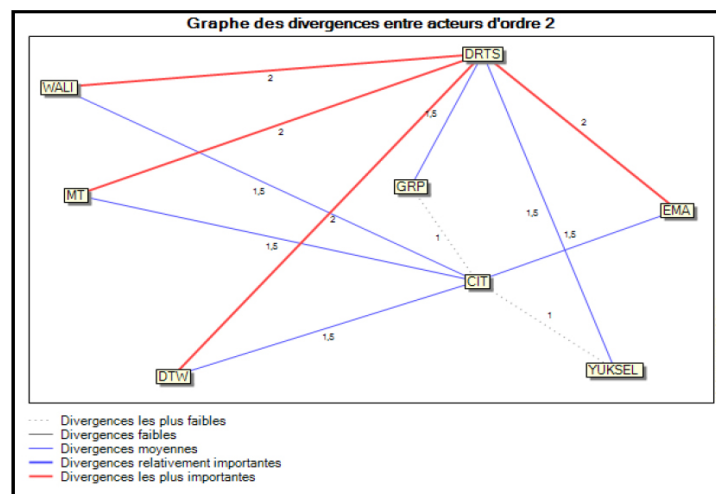
The potential conflicts between the actors of the Setif tramway project, emerge around a single objective, related to the decongestion of the city center, and the connection of the two poles generating traffic in the city of Setif. The opposition expressed by the two actors was not in relation to the value of the objective itself, but rather the way in which it is achieved, it was in relation to the very layout of the line and its passage through the city center.

For the directions, the deviation of the networks necessary for the insertion of the platform is quite complicated, this in relation to the nature of the networks, as well as the narrowness of the ways.

As for the citizens, the passage of the tram has destroyed the heart of the city of Setif, which will not only lose its historical identity, but also its urban dynamics.

Among other things, connecting the two traffic generating poles does not present a solution to meet the needs of travel given the availability of private and public buses, while the other more remote poles suffer from the lack of transport, and therefore the highest priority.

The graph of the divergence of objectives between the actors makes it possible to detect and represent the conflictual relations that exist between the actors of the Setif tramway project (figure 16).



**Figure 16.** Divergence graph between the actors of the Setif tramway project. Ordre 2. **Source:** Author ,2020. Using MACTOR software.

The Directorates by their strong involvement, and the limited means of action and their opposition to the sixth objective, have the most important differences with the EMA, the Minister of Transport, DTW and the governor, and others relatively important with YUKSEL and grouping.

Citizens' opposition to the sixth objective attributed to it relatively important differences with the EMA, the Minister of Transport, the DTW and the governor, and others weaker with YUKSEL and the Groupement, given their weak implications for the various objectives, this despite the means they have to make themselves heard.

In general, the differences between actors in relation to the objectives of the Setif tramway project are invisible and negligible in comparison to the strong convergence expressed by a zero ambivalence between actors.

## CONCLUSION

The analysis of the game of actor in the Setif tramway project, which was presented at the level of this research, by the MACTOR software, has made it possible to understand the logic of intervention of the different actors, to identify the interaction between them through their influences and dependencies, and to identify potential alliances and conflicts (convergences and divergences), represented in their mobilization on the objectives of the project.

➤ In terms of interaction between the actors of the Setif tramway project.

The influences and dependencies between the actors of the Setif tramway project have expressed certain instability in the game of actors, this is sometimes due to lack of knowledge and ignorance of the roles of certain actors, or the strong influence dictated by other actors without being influenced.

➤ In terms of convergence and divergence between the actors in relation to the objectives of the Setif tramway project.

The similarity of the positions of the actors of the Setif tramway project in relation to the majority of the objectives adopted, showed the important relationship of proximity that exists between the actors through the number of potential alliances between them, where we can see that:

- Great convergence of interest and objectives, among the actors involved in the front line (political actors), including those responsible for the project: the Minister of Transport (MT), governor, EMA and DTW.
- Relatively large divergences, which are recorded among the leaders and citizens. Mainly due to the limited task of the different directions involved in the project, explaining their local interests, thus the low involvement of citizens.

However, stakeholders are associated with the project each with a specific action plan (involvement) and their own interests (engagement) without being in conflict with others. Everyone acts according to his own vision, and his own field, interested in the project of different logics: either as an urban project, or as a social project, or as a rolling stock and a simple means of transportation.

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