INTERNATIONAL JOURNAL OF PUBLIC ADMINISTRATION,
MANAGEMENT AND ECONOMIC DEVELOPMENT

The top management support for e-governement project implementation: Case study of Khadamat's portal in Algeria

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Abstract

The implementation of e-government projects requires support from top management. Our research seeks to examine the quality of top management support in the case of innovative public services, delivered through *Khadamat's* portal, a specialized platform of the Water Resources Ministry in Algeria. Before the qualitative research, we conducted an analytical diagnosis of the platform using the web professional tools "Get-ranking, Dareboost and Semrush". Our initial investigation was necessary to explore the G to C of *Khadamat's* portal, to understand the functionality before organizing interviews with senior executives. The qualitative study shows that there is political will for e-government projects in the Water resources sector , but there are some functional limitations in the progress of *Khadamat's* portal, such as: Lack of interoperability , unsuitable legislation, lack of social networking supports of that e-government service , limited cellphone using of platform , lack of technological expertise related to e-government projects, fear of change under public administration framework, and other marginal factors that explain delays in the effective development of that useful e-government service .

Keywords: *Top management supports, evaluation, e-government projects - Ministry of Water Resources*

1. Introduction

With the increasing importance of digitalization in public administration, e-government projects have become a priority for many governments around the world, including Algeria. The Khadamat's portal, a specialized platform of the Water Resources Ministry in Algeria, was launched on 12/01/2020 to provide citizens with innovative public services and bring the administration closer to them. The portal aims to improve the quality and efficiency of public services by providing information and reactivity, allowing users to effectively follow up on their requests during all stages of processing.

However, the success of e-government projects such as Khadamat's portal depends on the quality of top management support. Top management support is crucial for successful e-

government projects. Without the full commitment of senior government officials, e-government projects may fail to meet their objectives. Top management support helps to ensure adequate resources are allocated and efforts converged towards the achievement of the objectives. It also helps to ensure that the project is adequately funded and that the necessary political and organizational changes are implemented. Additionally, senior leadership can provide guidance on potential risks and ensure that the project is managed in accordance with best practices. Finally, top management support can help to ensure that the project is completed on time and on budget and that it meets the needs of all stakeholders. To ensure effective implementation, a vigilance cell was established on 03/10/2021, whose main task is to make sure that everything is performed according to plans as well as to evaluate activities and suggest improvements. Our research aims to examine the quality of top management support in the case of Khadamat's portal, focusing on the challenges and opportunities of implementing e-government projects in the water resources sector in Algeria.

Despite the growing importance of e-government projects, research on this topic remains limited, particularly in the North African region. This can be attributed to the limited use of digital tools in public administration, which is still in its early stages of development in Algeria. As Ferroukhi (2022) notes that the subject is gaining importance in professional circles, which are facing the challenge of transitioning from traditional systems to modernized ones.

First of all, to address this gap in knowledge, we conducted an analytical diagnosis of the Khadamat's portal using web professional tools such as "Get-ranking, Dareboost, and Semrush." Our initial investigation was necessary to explore the portal's functionality before organizing interviews with senior executives to gain insights into top management support for the project.

In this paper, we present our findings on the quality of top management support for e-government projects in Algeria, based on the case study of Khadamat's portal. We also discuss the challenges and opportunities of implementing e-government projects in the water resources sector and provide recommendations for future research.

2. Literature review

In developing countries, E-government projects evolve in a constraining context, which determines the possibilities of their effective implementation. The regulations and political context, the demographic caracteristics and aspirations of young populations, distinguish developing countries from so - called developed ones.

In the context of African public administration, especially in the African poor countries, internet is available only for top managers and employees do not have access, some of them do not even have a shared computer for their working team. In the age of communication technologies, the civil servant wonders how to face this challenge without the necessary tools. On the other hand, ICT investment is considered to be one of the five necessary pillars for development according to (Piaggesi, 2011) , who also gives importance to other investment pillars : (1) Strong property rights systems (2) Education (3) Innovation (4) Social inclusion . For developing countries, we need to be aware of the available resources or likely to be available and to understand the organizational capacity of underequipped public administration.

Different approaches are used in the study of e-government projects. First, we have the holistic approach which considers the public administration as a combined system of social and technological factors. In the researchers' conception of that approach, the system includes citizens, employees in public sector, groups of people (social groups) , laws and restrictions , social and cultural policies , national identity , ethics and environmental issues (Wimmer & Tambouris , 2002). Other researchers give priority to citizen/consumer, considered as central life-giving element for the e-government projects. That approach focuses on public service delivery and citizen satisfaction (Flak et al, 2009).

Government in developing countries face a huge challenge on how E-government projects contribute to the social and economic development, and how E-government projects could empower citizens through better and inclusive ways of communication. Gichoya (2005) argues that *"ICT causes a "paradigm shift" introducing "the age of network intelligence", reinventing businesses, government, society, and individuals".* Gichoya (2005) precises that the ICT added value lies in its ability to assist the government in finding solutions to its problems.

Otherwise, the implementation remains dependent on endogenous and exogenous factors of the projects, the quality of the ecosystems and institutional capacities. The organizational support of top management is a determining factor in the quality of project implementation, without the support of top management and its clear vision, implementation becomes ineffective, and projects can deviate from the strategic objective. Several previous studies (McAfee,2006) and (Welch & Pandey,2005) highlight the importance of organizational factors in successful implementation, such as human resource management and top management support, standardization department, legal and human resource issues , and efficiency in the dissemination of best practices.

3. Methodology

For the present research we adopted qualitative research by mobilizing interpretative case study as the most qualitative research method for information system (Myers, 1997). We combined the digital content analysis and interviews with the executives of the Water ressource Ministry.

Our objective through this methodology is to observe the Khadamet's platform implementation before questioning the top management about their support to khadamat project. Unlike quantitative research, qualitative research is a method for analyzing and understanding phenomena, behaviors, facts, or subjects, that cannot be easly explained by quantitative data. The goal is not to obtain a large amount of data, but to obtain quality lighting for complex research field.

That action research method (Baskerville & Myers, 2004) gives us the possibility to analyze the top management support in the specific context of e-government project in Algeria. Our proposed questions relate to several areas of top management: the dissemination of a clear vision of e-government projects, the importance of priorities, the importance of political will to establish e-government project, dealing with the resistance to the e-government project, the design of e-government projects. The study aims to understand the support of the top management to structures that carriy Khadamate's portal.

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4. Results

The results of our study are presented under two categories, the analysis of the portal by the analytical websites and qualitative analysis. The first analysis gives us the broad understanding of the portal functionalities, facilitating the design of our semi-directive questionnaire, which is the principal research tool for the second step.

4.1 Indicators of Khadamat's portal

Through professional websites, we conducted an analysis of the content of the Khadamate's portal. For that purpose, we used three professional and analysis websites:

4.2 Dareboost

Dareboost allows us to rate the quality of the website, to note our deviations from good practices and to have a simple and easy reporting, and a user-friendly and convenient interface. Dareboost informs us about the performance and quality of online website. For Khadamate's platform, dareboost (Appendix 01) indicates 15 problems, 13 improvements and 62 successes.

4.3 Get-Ranking

Get Ranking (see Appendix 2) allows us to audit the website. By using Get Ranking, you will be able to know your strengths and weaknesses, and you can boost your website or portal . The analysis report ranks your portal or website based on the following elements : page optimization , page backlinks , social media , performance and security . Get Ranking gives us the possibility to see the keywords that attract the most traffic to your site (see Appendix 2.1). Otherwise, there are 22 recommendations (see Appendix 02.2) that the website has extracted to improve the visibility of Khadamate platform.

4.3 Semrush

Semrush provides analytic data, including site traffic, the amount of cost-per-click , keywords , site review, topic research, lead generation, and a special reporting process. We analyzed khadamat'portal through Semrush, which gives several indicators, including the number of citizens' visits to the portal and their interaction , as well as the most searched words in Google , the results are shown in the appendix as follows (Appendix 03).

- The portal contains two main sections:
- The first concerns the requests of citizens regarding both services, drinking water and waste water.
- The second concern the business community ; firm contractors and farmers , under water supply contract with the Ministry of Water Resource .

Table 1: Number of service requests

Period of the service requests	number of service requests	The type of service provided
12/07/2020 to05/18/2022	209	Study office accreditation

03/10/2021 to05/18-2020	65	ADE potable water
05/13/2021 to05/18/2022	29	Waste water ONA
12/07/2020 to05/18/2022	94	Well Drilling License
03/10/2021 to05/18-2020	357	+ rating mineral water
02/16/2021 to05/18/2022	37	Qualification

Source: Ministry of Water Resources and Water Security

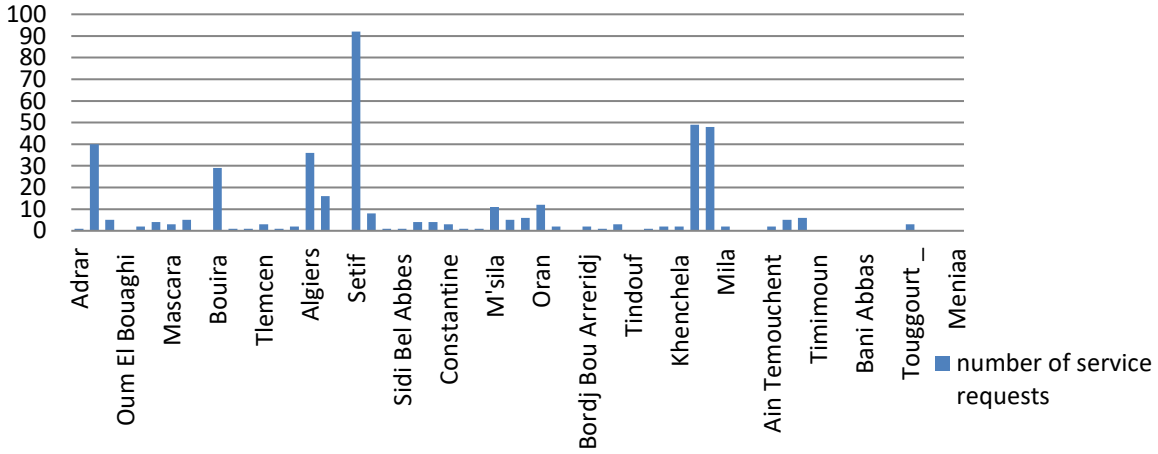

Figure 1: The number of service requests per administrative district – Wilaya-
Source: By ourselves from data of Ministry of water resources

The figure above shows us the number of citizens'requests through Khadamat's platform. The statistics show a disparity between administrative districts wilayas, some wilayas record more uses than others, this could be the result of successful local communication.

5. Qualitative analysis

In order to describe the implementation and support of top management for Khadamate's portal project, we have conducted six interviews, from 16/05/2022 to 19/05/2022, our interviews were scheduled in the offices of the Ministry . The gathered qualitative information comes from six senior executives, all of them have relevant experience in the water resources sector. They had to deal with aspects related to the development of Khadamate's portal and can describe their contribution in terms of supporting the structure in charge of Khadamate's portal.

The interviewers revealed the specific public administration framework, formal and centralized system, which could hinder the implementation of innovative projects such as Khadamate's portal. Central directors and senior civil servants evolve in a formal framework, but subject to informal political influences. Generally, they work to support the various e-government projects, carried out by the decentralized structures of the ministry. The interviewees provided us with ample information on the main difficulties in terms of the support processes. The main information is summarized in five essential lessons:

E-governement projects require the mobilization of fine skills, human specific assets, mastering computing and technical content of project, and having a deep knowledge of public service delivery. In Algeria, different ministries are trying to create units in charge of these projects ,but find great difficulties in ensuring the interoperability of digital solutions, which need a unique public agency for policy coherence. It would be desirable to monitor e-government project implementation by a unique public agency with the institutional and human capacities, and which can be supported by a specialized working group at the ministry level. In addition, the main constraint for support is the lack of technical and managerial skills, adapted to the project needs at the local level. That situation confirms the difficulty of decentralization option in the project implementation.

Top management support for Khadamate's portal remains ineffective facing technical infrastructure problems, lack of connectivity and bad quality of networking are serious constraints,about which the senior management of the ministry can do nothing. This kind of problem is the responsibility of Telecommunication ministry, most often, do not intervene in synchronization with Water Resources ministry. In addition, the Ministry of Water Resources constantly calls upon the Ministry of Telecommunications to ensure rapid and appropriate solutions, in the difficult context of a vast country.

The top management intervenes to support the actions of communication and awareness of the stakeholders, particularly civil servants in central and decentralized administrations, that might consider Khadamate's portal as a competing solution, which could lead to downsizing. To this end, the ministry maintains a sustained dialogue with the trade unions and tries to explain the multiple opportunities for the development of digital solutions such as Khadamate's portal.

The top management remains aware of the inevitable consequences of the digital divide, a public service must be accessible to all citizens. Unfortunately, several citizens are not able to use khadamate's portal, this requires adapted and targeted communication for people in difficulty. In addition, the platform is not operational on cellphones. The interviewees recognize the limits of the ministry to provide this kind of support, which should be delivered in collaboration with the local authorities. A significant delay is recorded and aggravated, especially by the advent of COVID 19 crisis.

Support for Social Networking strategy: The support of the ministry should be more consistent in the promotion of Khadamate's portal, through an omnichannel communication strategy, mobilizing several media and particularly social networking. Khadamate's portal remains unknown for the stakeholders, the advertising support was not enough to value a very useful intermediation platform. The top management remains aware of the limits of public action in terms of promoting the platform, which could also be explained by doubts about its ability to react with the crowd.

6. Conclusion

In conclusion, our research examined the quality of top management support in the case of innovative public services delivered through Khadamat's portal, a specialized platform of the Water Resources Ministry in Algeria. Our study shows that while there is political will for e-government projects in the water resources sector, there are several functional limitations that have slowed the progress of Khadamat's portal. These include the lack of interoperability, unsuitable legislation, lack of social networking support for the e-government service, limited cellphone usage of the platform, lack of technological expertise

related to e-government projects, fear of change under the public administration framework, and other marginal factors that explain delays in the effective development of this useful e-government service. Unfortunately, the top management did not have a significant intervention facing these functional limitations.

The lack of leadership in e-government project implementation can have a significant impact on the successful implementation of the project. Without leadership, it is indeed difficult to coordinate the different institutional actors and stakeholders involved in the project, leading to delays and cost overruns. Additionally, without a clear leader to provide direction and oversight, the project may not reach its full potential or have the desired impact. A lack of leadership can also lead to a lack of accountability, which can lead to a lack of commitment from stakeholders, resulting in a lack of progress implementation on the project.

Our findings suggest that top management support is crucial for the success of e-government projects. Without adequate support, functional limitations and other challenges can hinder the progress of these projects. We recommend that the Water Resources Ministry and other government agencies prioritize top management support when implementing e-government projects. This includes ensuring not only adequate funding but also providing specific human assets for decision-making system at the top management level.

Our research can be extended by addressing related topics such as: (1) What is the role of top management in developing sustainable long-term e-government projects ? (2) how can top management develop effective strategies for successful implementation of e-government projects ? (3) What is the impact of top management on the adoption of e-government by citizens? (4) What is the role of top management in developing governance structures for e-government projects? (5) What is the impact of top management on the scalability and sustainability of e-government projects?

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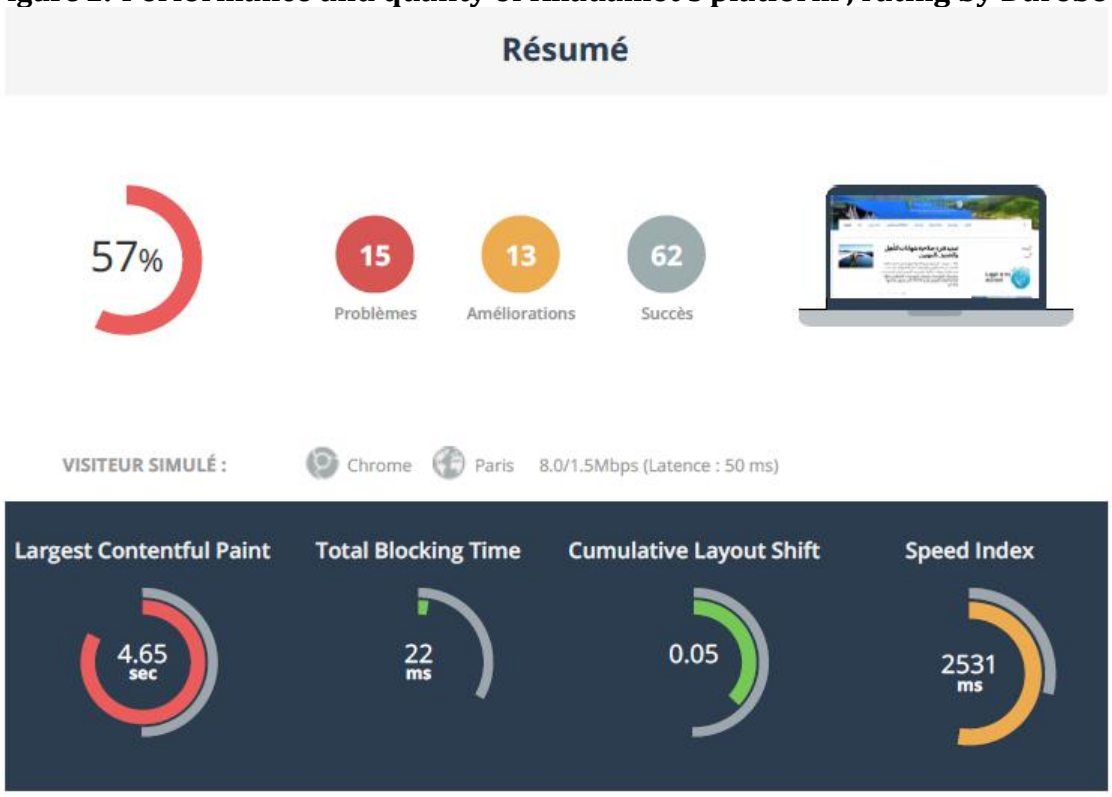
Appendix

Appendix 01

Figure 2: Performance and quality of Khadamet's platform , rating by Dareboost



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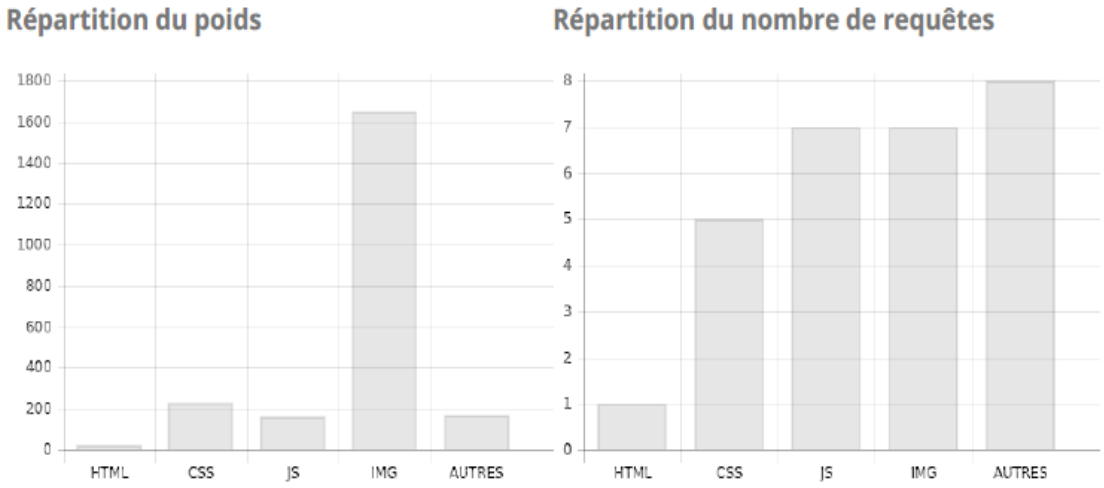

Figure 3: The results of auditing the website services (Get Ranking)

Figure 4: Keywords of the platform

Mot-clé	Pays	Position	Total des recherches	Trafic estimé
khadamat mre gov dz	FR	1	1,900	577
رخصة حفر بئر بالجزائر	AR	1	50	15
شروط حفر بئر	AR	1	40	12
طلب رخصة حفر بئر في الجزائر	AR	1	30	9
demande d'autorisation de forage de puits en algerie	FR	2	50	8
شروط حفر بئر ارتوازي	AR	1	20	6
طريقة استخراج رخصة حفر بئر	AR	2	20	3
حفر بئر	AR	10	260	2
modele de demande de branchement d'eau potable algerie	FR	7	110	2
lettre de demande de branchement d'eau potable algerie pdf	FR	4	40	2

Source: Results from 'Get Ranking'

Table 2: The recommendations to develop and improve Khadamet platform

N°	Recommendations
01	Add "ALT TEXT " to all images
02	Install the Robots.txt file
03	Work on search Engine optimization (SEO) for a good page indexing
04	Provide meta description tag
05	Use tags more effectively
06	Add a tag for the title (ideally between 10 to 70 characters) of high importance
07	Use keywords with important HTML tags
08	Enrich the page text content
09	Adding a title tag (ideally between 10 to 70 characters) is of high importance.
10	Provide a meta description tag.
11	Determine URLs of links to be more readable by citizens and search engines
12	Implement some statistic tools
13	Check the font size and increase it on different bookings
14	Add coding scheme
15	Please add face book tags ,Open GRAPH
16	Install and configure Face book Pixel
17	Delete inline styles
18	Create Instagram profile link

Source: Get Ranking

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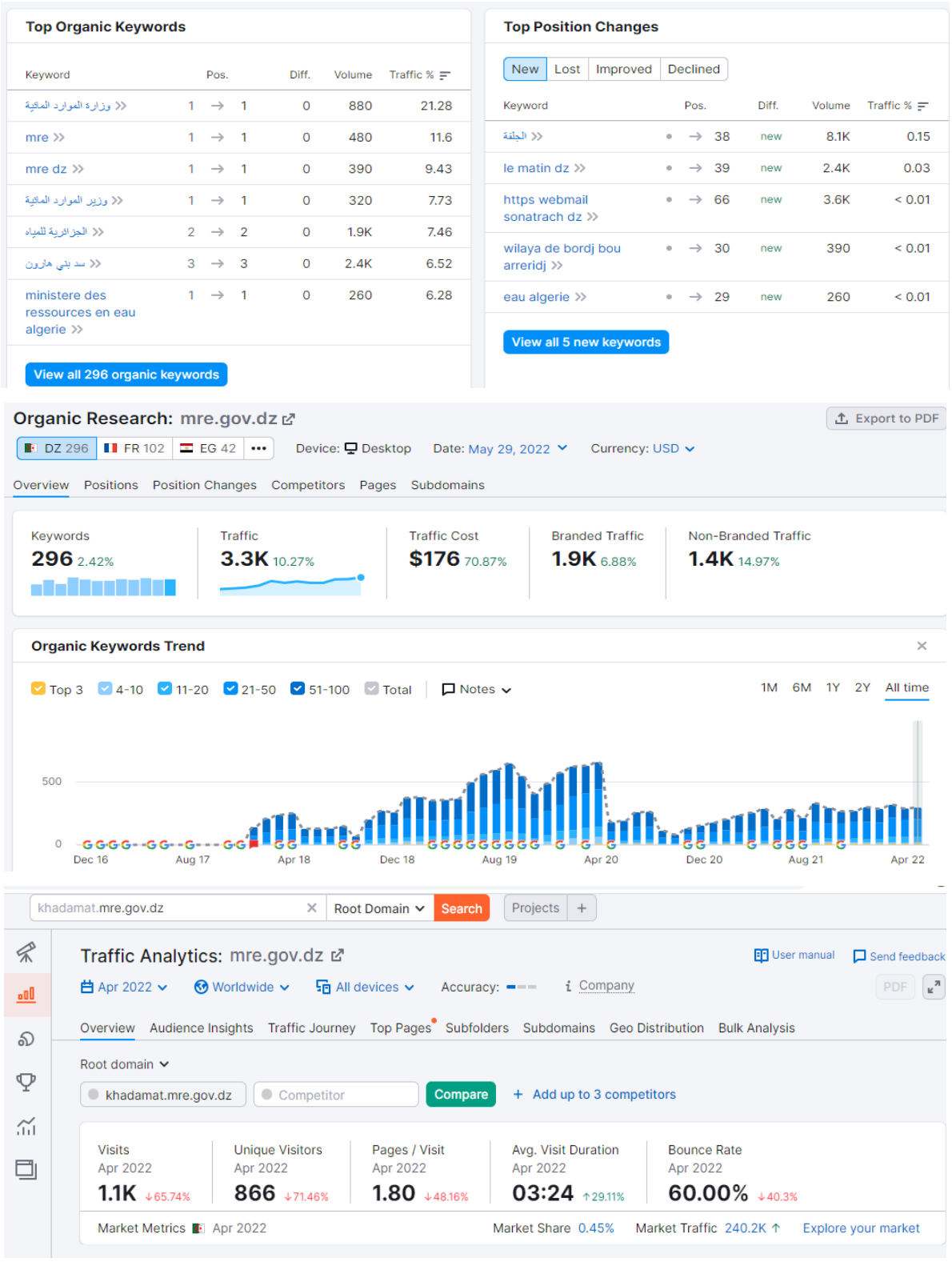
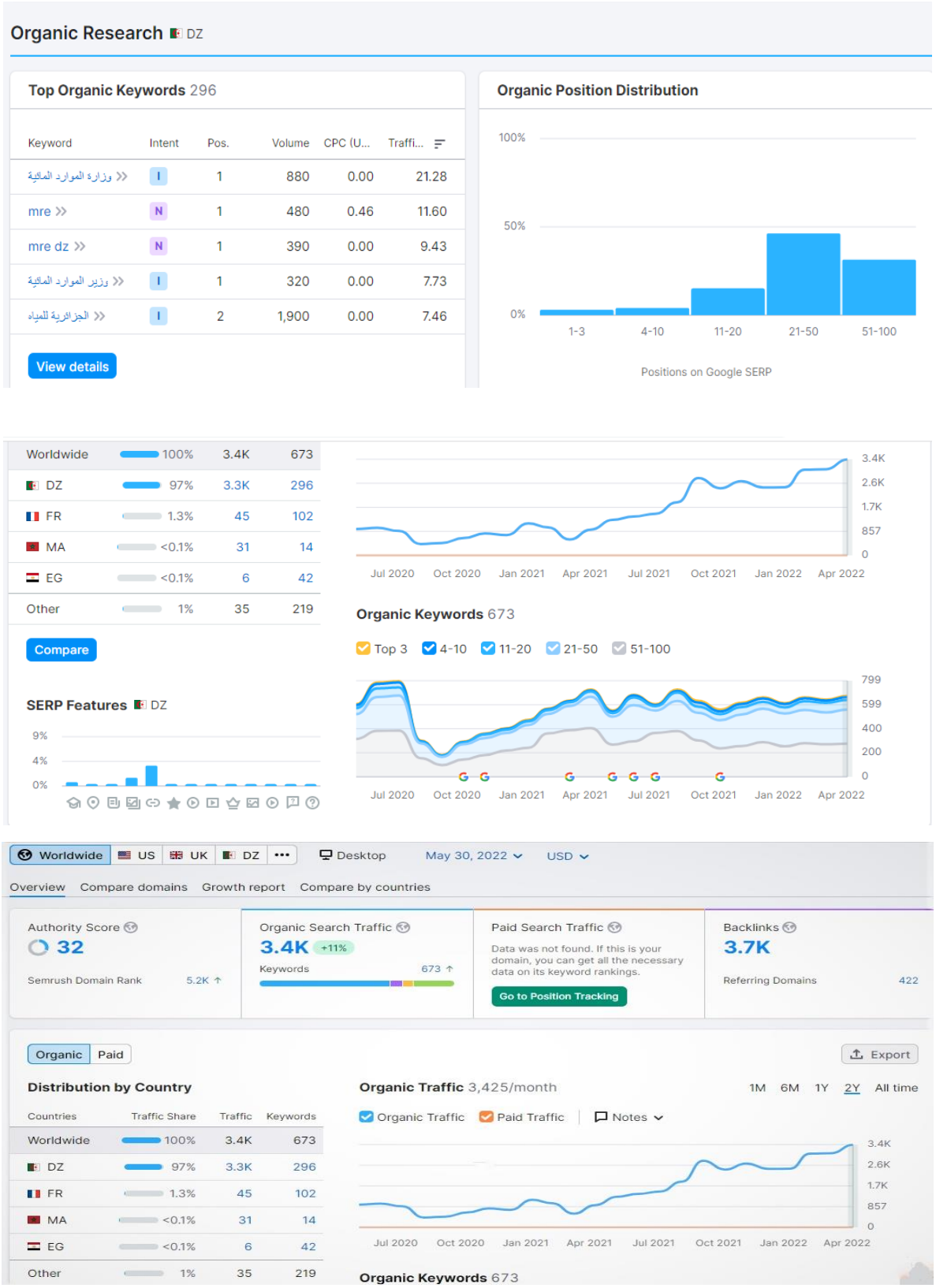
Figure 5: Analysis of Khadamet's plateform by Semrush





Source: Semrush

Table 3: Suggested questions for the interviewers

Number	Suggested questions
01	What are the reasons for your interest in e-government project?
02	At what level do you intervene in e-government project?
03	Can you tell us about the barriers to digital transformation?
04	Has the strategic goal been identified for e-government project ?
05	Are these goals for short-term or long-term?
06	Is the digital trend of management the result of the failure of traditional management?
07	Do you have a clear vision and priorities for the e-government projects?
08	What type of e-government project is supported by the minister?
09	Is there full political will to establish e-government?
10	How did you design e-government project development? Did you associate the operational structures in the project design?(in order to get more information about needs)
11	How to deal with resistance to the e-governement project? Do you provide assistance to the structure carriying Khadamate's portal ?
14	Does Khadamate's portal have a positive impact on organizational performance?
15	Has Khadamate's portal played a role in improving service quality?
16	Does Khadamate's portal help to build a good image of Water sector?
17	Does Khadamate's portal reduce paper transactions?
18	Has the ministry successfully aligned capabilities with digital requirements?
19	Is employee training adequate with e-government requirements?
20	Was Khadamate's portal developed by internal capabilities or with the help of consulting office?
21	Has this platform been developed for a long time?
22	Have you encountered technical problems with Khadamate's portal? Did you contribute for the implementation of management processes facing these technical problems?
24	Is there a significative demande for the use of Khadamate's portal?
25	Does Khadamate's portal include all services provided by the ministry to citizens?
26	Are there plans to add new services in the future?
27	How would you rate the success of your digital transformation? Especially for Khadamate's portal.
28	How would you rate employee engagement in digital transformation?
29	How do you prepare the support of the structure that carries the Khadamate's portal? Do you have a formal organizational relation with that structure?
30	Do you assess the contribution of Khadamate's portal to citizen satisfaction?
31	Has the transformation to digital management achieved the above objectives?
32	Has e-government played a role in improving service quality?
33	Has administrative digitization had a positive impact on the work organization?
34	What are the impacts of e-projects on human resources and economic benefits?

Source: Authors.

Table 4: The requests of citizens on khadamet's platforme

Kind of service	number of service requests	Wilaya
Drinkable water	01	Adrar
Potable water + waste water	40	Chlef
Well drilling licenses + office accreditation + potable water	05	Laghouat
Nothing	00	Oum El Bouaghi
Well drilling licenses + office accreditation	02	Batna
Well Drilling Licenses + Qualification	04	Bejaia
Drinkable water	03	Mascara
Potable water + waste water	05	Bashar
Nothing	00	Blida
Potable water + sewage water + office accreditation +Qualification + Well Drilling Permits	29	Bouira
Drinkable water	01	Tamanrasset

Accreditation of study offices	01	Tebessa
Wastewater + well drilling licenses	03	Tlemcen
Well drilling licenses	01	Tiaret
Well Drilling Licenses + Qualification	02	Tizi Ouzou
Waste water + potable water + well drilling licenses	36	Algeria
Accreditation of study offices + sewage water + mineral water + potable water	16	Djelfa
Nothing	00	Jijel
Well drilling licenses + qualification + classification	92	Setif
Well drilling licenses + qualification + classification	08	Saïda
Well drilling licenses	01	Skikda
Well drilling licenses	01	Sidi Bel Abbes
Accreditation of study offices + sewage water + well licenses	04	Annaba
Potable water + classification	04	Guelma
Potable water + classification	03	Constantine
Accreditation of study offices	01	Medea
Well drilling licenses	01	Mostaganem
Accreditation of study offices + licenses for drilling wells	11	M'sila
Well drilling licenses	05	Mascara
Potable water + well drilling licenses + classification	06	Ouargla
Drinking water + rehabilitation	12	Oran
Wastewater + well drilling licenses	02	d'El Bayadh
Nothing	00	d'Illizi
Well drilling licenses	02	Bordj Bou Arre-ridj
Sewage	01	Boumerdes Prov-ince
Classification + qualification	03	El Tarf
Nothing	00	Tindouf
Category	01	Tissemsilt
Accreditation of study offices	02	Valley State
Well drilling licenses	02	Khenchela
Well Drilling Licenses + Classification	49	Souk Ahras
Potable water + well drilling licenses + classification	48	Tipasa
Wastewater + well drilling licenses	02	Mila
Nothing	00	Ain Defla
Nothing	00	Naâma
Drinkable water	02	Ain Temouchent
sewage water + potable water	05	Ghardaia
Well drilling licenses + classification + qualification	06	Relizane
Nothing	00	Timimoun
Nothing	00	Bordj Badji Mokhtar
Nothing	00	Ouled Jalal
Nothing	00	Bani Abbas
Nothing	00	Ain Saleh
Nothing	00	Ain Gezam
Potable water + well drilling licenses	03	Touggourt_
Nothing	00	Djanet
Nothing	00	Al-Mughayyir
Nothing	00	Meniaa

Source: The electronic portal (khadamat) , Ministry of Water Resources and Water Security