

# Digital Transformation of Territorial Collectivities Services between the Necessity of Society and the Challenges of Reality: A Case Study of the M'diq Collectivity

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## ABSTRACT

This study examines the digital transformation of public services in territorial collectivities in Morocco, with a specific focus on the M'diq Collectivity as a case study. The research investigates the tensions between societal demands for modernized services and the challenges faced in implementing effective digital governance. Through a mixed-methods approach combining quantitative surveys (n=300) and qualitative interviews with key stakeholders, the study reveals significant gaps between digital transformation objectives and implementation realities.

Despite national digitalization initiatives, the M'diq Collectivity faces substantial challenges including inadequate technological infrastructure, insufficient budget allocation (only 15% of technical budget dedicated to acquiring equipment), aging workforce (79% recruited before 2000), and low digital literacy among administrative staff. These limitations have hindered service delivery efficiency, with 55% of digital service requests taking over a month to process, mirroring traditional service timeframes. However, the research indicates high readiness among citizens, with 97% using smartphones and 73% demonstrating awareness of digital transactions.

The findings suggest that while digital transformation frameworks exist theoretically, practical implementation remains problematic due to systemic administrative vulnerabilities, resistance to change, and limited technical capacity. This creates a paradoxical situation where digital services, intended to enhance governance, fail to improve service quality despite user preference for digital interactions (78% prefer electronic administration).

This research contributes to the discourse on e-governance in developing regions by highlighting the complex interplay between administrative capabilities, technological infrastructure, and citizen engagement. The study provides valuable insights for policymakers seeking to bridge the gap between digital transformation aspirations and practical implementation in territorial governance across Africa.

**Keywords :** Territorial collectivities, e-government, digital services, digital transformation, M'diq Collectivity.

## INTRODUCTION

The evolution of territorial collectivities in Morocco has been marked by significant administrative and functional transformations. Initially, under the 1976 charter, these collectivities served predominantly as advisory entities with limited operational capacity. However, the reform initiated by the 2002 charter expanded their roles, albeit under the continued oversight of a guardianship authority. This period was characterized by legislative efforts aimed at orienting these institutions towards developmental roles, thereby enhancing their contribution to both local and national territorial development (Ayegou, 2018).

The enactment of Organic Law 113.14 in 2015 marked a critical juncture in this evolution, significantly augmenting the competencies of these collectivities. This legislation delineated a comprehensive spectrum of development services managed by these bodies, encompassing areas such as economic activity facilitation, environmental sanitation, distribution of water and electricity, administrative tasks, and cultural programming (Loi organique relative aux communes, 2015). Their involvement became pivotal in major development and reconstruction endeavors. However, subsequent legislative adjustments were made to recalibrate the direct engagement of collectivities in certain domains, particularly urban development. This recalibration was a response to the challenges that precipitated the rise of unplanned urban areas in Morocco, leading to multifaceted economic, social, and cultural complications.

In response to the pressing need for modernization and increased operational efficiency, a recent directive from the Ministry has been guiding these collectivities towards embracing digital transformation. This shift is critical given the comparative limitations in human resources and technological infrastructure faced by these bodies relative to other public institutions (Coco et al., 2023). In this context, the Ministry has been proactive in introducing a suite of digital services for integration into the operational frameworks of territorial collectivities. These services include advanced digital systems for revenue and expenditure management, electronic civil status registries, streamlined online platforms for economic and construction permits, and comprehensive e-complaint mechanisms.

The M'diq Collectivity serves as an illustrative case of the challenges and opportunities involved in digitalizing public services at the local level (LAHLOUH & BEN DRISS, 2024). This research contributes to the broader discussion on the digitalization of public services in developing regions, highlighting the interplay between societal needs and technological challenges, and offering insights that may inform policy decisions aimed at enhancing digital governance across Africa.

## Research area

M'diq, situated along the coast of Tetouan in Morocco (see Figure 1), has seen a dynamic shift in its population over the years. Starting with a modest count of 2,412 residents in 1960, the community witnessed a substantial increase to 67393 by 2024, (see Figure 2), according to the High Commission for Planning 2024 report (Haut Commissariat au Plan, 2024). This demographic expansion has been a crucial factor in bolstering the urban development of M'diq through various stages.

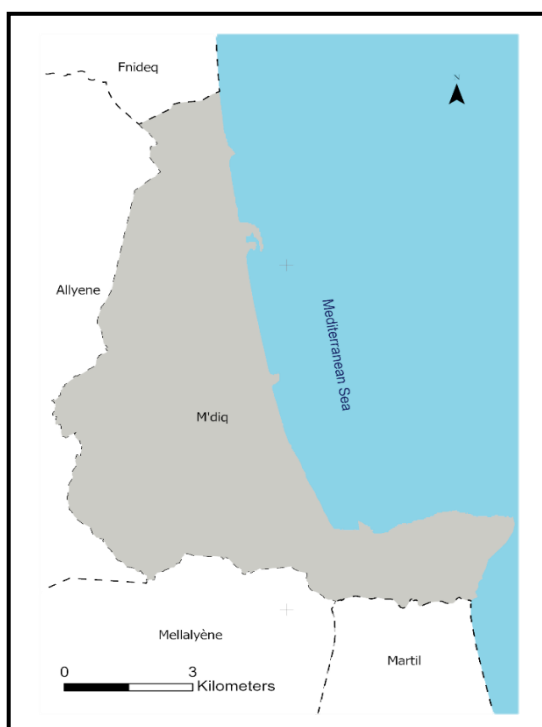


Fig. 1. Geographic Positioning of the M'diq Collectivity

In recent times, M'diq's population has surged, fueled by high fertility rates and a wave of migration from different parts of Morocco, notably from rural regions. This demographic shift has brought forth considerable challenges for the local administration, affecting the quality of public services and the administration of key sectors. It has also created a delicate balance between economic development and environmental conservation in the region.

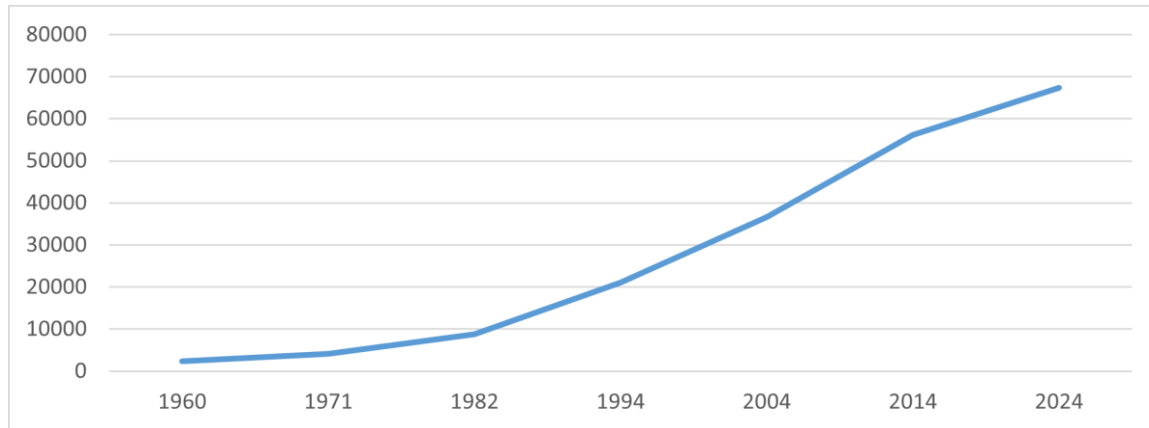


Fig. 2. Population Trends in the M'diq (1960-2024) according to the High Commission for Planning

## LITERATURE REVIEW AND THEORETICAL FRAMEWORK

### Digital-Divide Perspective

Early e-government research stressed that simply placing services online does not guarantee equal uptake; differences in access, skills and meaningful use produce “second-level” digital divides (Van Dijk, 2019). In Morocco, the 2023 national ICT survey still reports a 15 percentage-point gap in regular internet use between urban and rural households (ANRT, 2023). Case studies of Tangier and Nador show that low staff e-skills inside the administration can create an internal digital divide that is as crippling as citizen-side deficits (Zaanoun, 2023). These findings foreshadow the difficulties faced by the M'diq Collectivity, where 79 % of staff were hired before 2000 and received little formal ICT training.

### E-Governance Maturity Models

The UN's four-stage model (information → interaction → transaction → integration) remains the main yardstick for comparing administrations (United Nations, 2022). Morocco's national programmes—e-MAROC 2013 and Digital Morocco 2025—aim to lift collectivities from the interaction to the transaction/integration stage. Yet the country sits only 101st of 193 in the 2022 E-Government Development Index, dragged down by “back-office fragmentation” and “weak local portals” (United Nations, 2022). Municipal audits from Chefchaouen and Salé likewise document long processing times even after platform roll-outs because departments fail to share data or standardize workflows (ALAMI & EL IDRISSE, 2023).

### Digital Transformation a Organisational Change

Digital transformation is more than technology deployment; it requires cultural and procedural change across the organisation (Coco et al., 2023). In the public sector this change is constrained by civil-service statutes, budget cycles and political oversight. Studies on Spanish and Brazilian municipalities show that where ICT budgets fall below ~25 % of capital expenditure, transformation stalls at the pilot stage (Guillén-Gámez et al., 2022). M'diq allocates just 15 %, suggesting a similar risk.

### Institutional Isomorphism and the TOE Lens

DiMaggio & Powell (1983) argue that organizations often adopt innovations to mirror peers and comply with norms rather than because of direct efficiency gains—a process labelled institutional isomorphism. For local governments, the “peer-pressure” comes from national ministries, benchmarking leagues and multilateral

donors. To capture both that external pull and the internal capacity factors described above, we embed the study in the Technology–Organisation–Environment (TOE) framework:

- Technology – quality of ICT infrastructure and platforms available;
- Organisation – skills mix, leadership, and budgetary latitude;
- Environment – citizen readiness and coercive or mimetic pressures from outside actors.

## Research Hypotheses

Grounded in the literature, three testable propositions guide the empirical work:

- H1 – Digital-divide: limited staff e-skills and an ageing workforce will depress the adoption and effective use of remote services in the M'diq Collectivity.
- H2 – E-governance maturity: collectivities that achieve cross-departmental platform integration will reduce request-processing time and raise citizen satisfaction relative to paper-based procedures.
- H3 – TOE / Isomorphism: strong external pressure (national charters, peer comparison) combined with adequate resources predicts faster activation of digital platforms than internal readiness alone.

These hypotheses structure the subsequent analysis of whether, and under what conditions, digital transformation improves service delivery in M'diq.

## Problem Statement

The M'diq Collectivity, like many territorial collectivities across Morocco, faces significant challenges in administrative management and spatial planning. Traditional methods of public service delivery are failing to meet citizens' expectations, and the shift towards digital services has introduced new challenges, such as limited budget allocation, low digital literacy, and resistance to adopting remote services.

This study aims to identify the strengths and weaknesses of both traditional and digital service systems and understand the impact of digital transformation on service quality and citizen experience in the M'diq Collectivity. The research questions guiding this study are: What challenges does the M'diq Collectivity face in implementing digital public services? How does digital transformation affect service quality and citizen engagement? What lessons can be drawn from the experience of M'diq for broader digitalization efforts in Morocco and Africa?

The ultimate objective is to assess how digital transformation can improve public service quality and governance, providing insights that could inform broader strategies for enhancing public services in developing regions.

## MATERIALS AND METHODS

### Overview

Our study employed a mixed-methods approach, combining qualitative and quantitative techniques to explore the intricacies of service delivery and digital transformation within the M'diq Collectivity. This approach was selected to provide a comprehensive understanding of both the subjective experiences of citizens and objective data on service performance.

### Survey Instrument and Sample Determination

A crucial component of our quantitative analysis was a structured questionnaire, which was administered to a sample of visitors from the M'diq Collectivity. The questionnaire was divided into four main sections:

**General Information about the Respondent:** This section collected demographic and background information to provide context for the subsequent responses.

**Quality of Services Provided by the Collectivity:** Respondents were asked about their perceptions of the

service quality, areas needing improvement, and the impact of these services on their lives.

**The Role of Electronic Administration in Improving Online Service Delivery:** This section focused on digital interactions between the collectivity and the clients, assessing the effectiveness and user satisfaction of electronic administration.

**Awareness of Clients about Digital Geographic Services:** The final section gauged the respondents' awareness and use of digital geographic services, crucial for understanding digital literacy and adoption rates.

### Sample Size Calculation

To ensure the representativeness of our survey results, we calculated the required sample size using the following formula, which is based on the principles of probability theory and statistics:

$$N_0 = \frac{Z^2 p(1-p)}{e^2}$$

Assuming maximum variability ( $p = 0.5$ ), 95 % confidence ( $Z = 1.96$ ), and  $\pm 5$  % precision ( $e = 0.05$ ),  $n_0 \approx 384$ . Finite-population correction for M'diq's  $\approx 67\,000$  adult residents yields  $N_0 = \frac{n_0}{1+(n_0-1)/N} \approx 300$ .

### Data Collection and Analysis

The questionnaires were distributed to the randomly selected sample at the beginning of the study to ensure that our findings were based on a representative and unbiased sample. The collected data were then analyzed using statistical software, with results informing both the qualitative and quantitative aspects of our research.

### Additional Qualitative Tools

In addition to the questionnaire, we conducted semi-structured interviews with key stakeholders, including local political elites, employees of the M'diq Collectivity, and individuals from other territorial collectivities. These interviews were designed to provide deeper insights into the administrative and digital challenges faced, as well as to explore the attitudes of different stakeholders towards digital transformation. The qualitative data obtained were analyzed using thematic analysis, which allowed us to identify recurring patterns and themes that complemented the quantitative findings.

By combining survey data with qualitative insights, our mixed-methods approach enabled a thorough exploration of the complexities involved in the digital transformation of public services in M'diq. This comprehensive methodological framework allowed us to address the research questions and develop a nuanced understanding of both the challenges and opportunities of digital transformation at the local governance level.

## RESULTS AND DISCUSSIONS

Despite the implementation of numerous national strategies since the late 20th century, Morocco has consistently ranked low in terms of the development of e-government and e-participation indices, as highlighted in United Nations reports in this domain (United Nations, 2022). This underperformance can be attributed to the ineffectiveness in executing digital strategic plans in practice, coupled with a limited understanding of the importance of digital engagement among decision-makers, including politicians and administrators. A more detailed analysis of this issue in the context of the M'diq collectivity reveals that, similar to other collectivities at the national level, it faces several obstacles that hinder its growth and development and reduce the quality of its service delivery to citizens. These barriers include challenges related to human resources, technological infrastructure, political will, and resistance to change within the administration and citizenry.

Moreover, the municipality's reliance on traditional administrative management has given rise to a range of spatial issues in reality, encompassing urban transportation, urban planning, environmental concerns, and economic activities (Lahlouh et al., 2024).



## The Quality of Public Service Delivery for Citizens: The Crisis of Traditional and Digital anagement

The M'diq collectivity is among those territorial collectivities that still depend on traditional administrative management, which has been unable to meet the population's needs and has not contributed to the development of employee skills in most areas for an extended period. This approach has resulted in the provision of poor-quality services that fail to meet the expectations of citizens. Despite the collectivity's initiative in offering several remote services, such as an online complaint system and a national portal for obtaining urban planning and economic activity permits—effectively digitizing these services—citizens continue to visit the collectivity offices in person to follow up on their applications due to delays in processing and prolonged periods of non-communication regarding the status of their requests, often exceeding several weeks (Lahlouh & Ben Driss, 2025).

This problem is particularly evident in the time taken to process requests from service users. More than one month was required to process 36% of the requests across various administrative departments of the collectivity. This percentage increases to 55% when the Department of Administrative Affairs is excluded from the analysis. On the other hand, a processing time of less than a week was observed in 42% of the cases across various administrative services, which drops to 17% when excluding the Department of Administrative Affairs (see Figure 3).

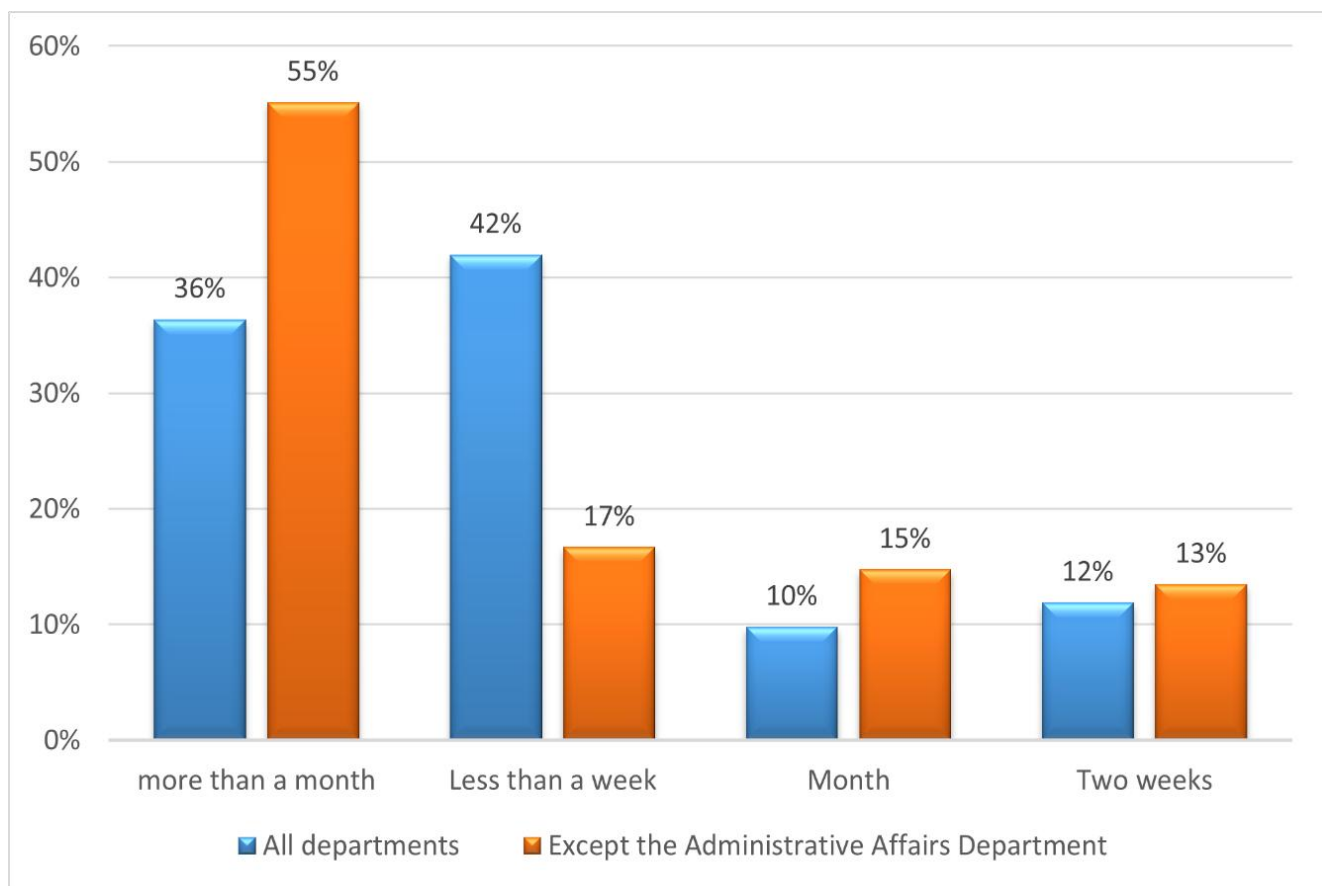


Fig. 3. Processing Speed for Service User Requests in M'diq Collectivity

The results of processing speed highlight a significant challenge in the effectiveness of both traditional and digital service systems. This necessitates a closer look at the reception conditions faced by service users.

### Inadequate reception of service users at the M'diq collectivity despite exerted efforts

The National Charter for Public Services, issued in 2021 (Kingdom of Morocco, 2021), along with the Charter for Improving the Reception of Service Users in Public Facilities, issued in 2013, have urged various public administrations to focus on enhancing the reception of service users. This includes allocating dedicated staff and services for welcoming and guiding citizens to fulfill their needs. The aim is to strengthen trust between service

users and the administration by promoting a culture of citizen reception, attentiveness, fulfilling expectations, and facilitating access to public facilities (Open Government Partnership, 2021). These charters aspire to provide service users with assurances regarding the conditions of their reception in public facilities. Given that territorial collectivities function as local public facilities with significant responsibilities towards service users, they are obligated to actively work on improving reception conditions within their institutions.

Subsequently, diagnostic results of the reception conditions at the collectivity under study have revealed negative feedback in this area. 38% of the surveyed service users expressed dissatisfaction with the human resources' reception and communication, adversely affecting the perceived quality of services offered by the collectivity. This dissatisfaction is attributed to the collectivity's lack of attention to this aspect, highlighting the institution's failure to effectively implement the principles of the National Reception Charter.

Reception is considered a fundamental aspect of administration, closely linked to improving the quality of services provided to service users. Enhancing reception is crucial for building citizens' trust in the administration and is fundamental to improving the processing of service users' requests and the overall quality of services. The study results indicated that approximately 60.62% of service users were dissatisfied with the stages of processing their requests, with this percentage rising to 75% when excluding the Department of Administrative Affairs. This dissatisfaction is mainly due to the complexity of the legal procedures followed by various administrative services to meet citizens' needs, especially in departments providing services that require field inspections and involve external agencies, such as complaint handling, granting urban planning and construction permits, and issuing permits for economic activities.

The reception quality analysis shows that there are broader systemic issues that directly impact the overall service delivery, leading us to explore the quality of services provided by the collectivity.

### **The Decline in the Quality of Services Provided by the Collectivity for the Benefit of Service Users**

If the stages of processing service users' requests at the collectivity under study did not meet the users' expectations, the same applies to the quality of services provided by various administrative departments within this institution. Approximately 53.43% of the service users across various administrative services in general, and about 72.5% excluding the Department of Administrative Affairs, expressed dissatisfaction with the quality of services provided by the administration. This indicates an implicit failure of the administration to meet citizens' needs under satisfactory conditions. This issue arises from a confluence of various factors including subpar reception conditions, complex stages in request processing, and extended timeframes required to fulfill service users' needs, resulting in poor quality public service (see Table 1).

**Table 1.** Evaluation of Service Quality at M'diq Collectivity

Service Quality	All Departments	Excluding Department of Administrative Affairs
Poor	23.29%	17.50%
Insufficient	30.14%	55.00%
Improving	20.89%	15.00%
Average	19.52%	7.50%
Excellent	6.16%	5.00%
Total	100.00%	100.00%

Next, we explore the barriers contributing to the declining quality of services, focusing on both conventional and digital aspects of service delivery.

### **Barriers to Digital Transformation in Territorial Collectivities**

The findings we have reached confirm that territorial collectivities are experiencing a crisis in the administrative

management of services provided to citizens. This crisis pertains to both conventional services, as previously indicated, and digital services, which have recently come under the management of the M'diq collectivity. The root of this dysfunction can be traced to several factors related to human resources and the technological infrastructure of collectivity.

### The Role of Human Resources in the Collectivity in the Diminished Quality of Public Service Delivery

In this section, we will attempt to highlight the readiness of the collectivity under study for transitioning towards e-governance and the establishment of electronic governance principles. This will be done through a set of commonly recognized indicators, alongside an analysis of how this aspect contributes to the current diminished quality of services provided by the collectivity.

Since the separation of the M'diq collectivity from the Mellaliyine in 1992, making it an independent territorial unit, there has been significant development in terms of human resources. The number of employees increased from 55 in the same year to 168 by 2022.

The following graphical representation (see Figure 4) illustrates that the M'diq collectivity experienced notable fluctuations in annual employment rates, dictated by the institution's need for human resources to ensure its functioning as a public facility. The year 1991 saw the highest employment rate, with approximately 27 employees joining the collectivity, coinciding with its establishment and independence from the Mellaliyine. This period also witnessed several recruitment campaigns due to a severe shortage of human resources across various administrations at the national level in general, enabling many degree holders to join the collectivity. The employment trend continued to decline until 1996, which was a particularly notable year in this context, as approximately 23 new financial positions were created within the collectivity.

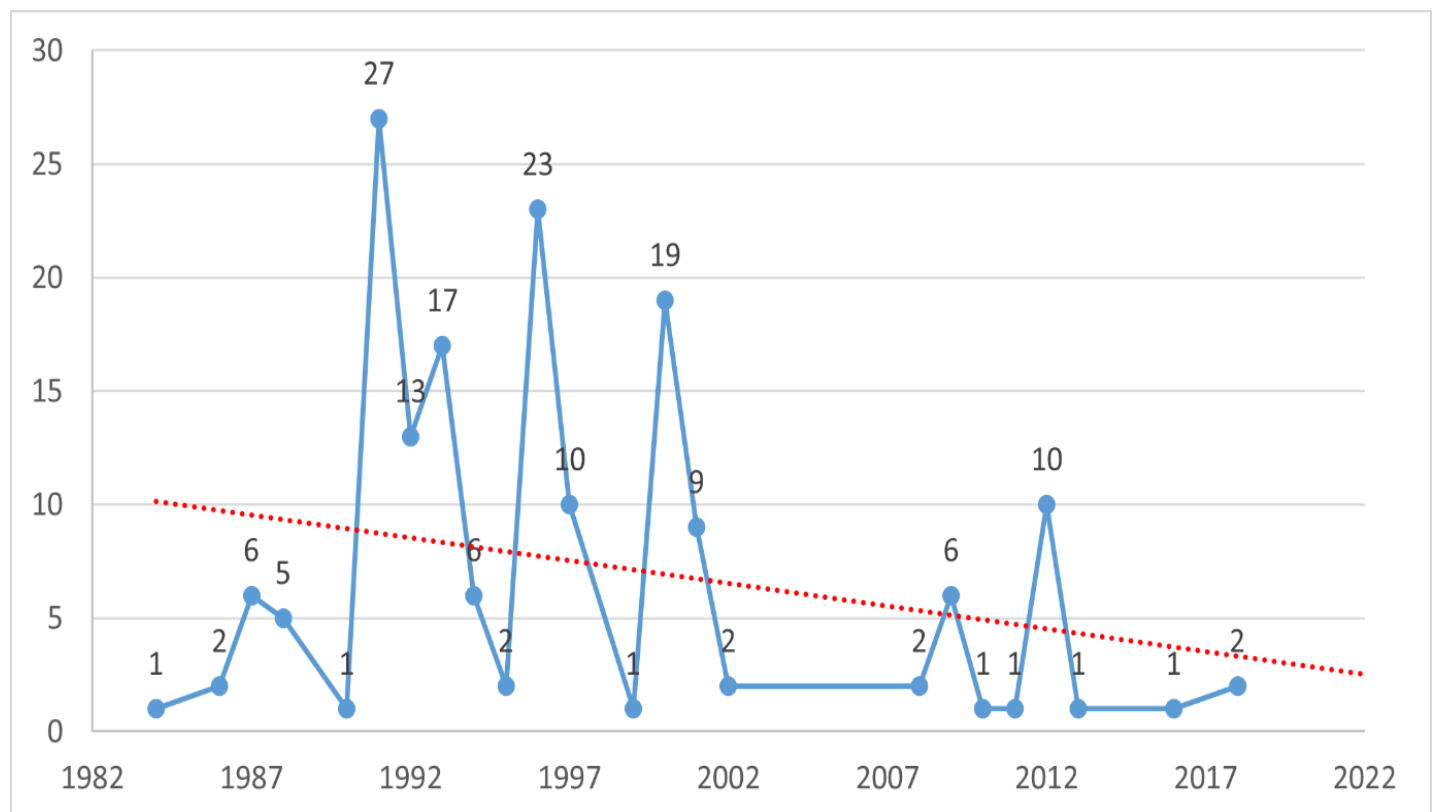


Fig. 4. Number of Employees Recruited by Year in the M'diq Collectivity

As observed from the trend line, there has been a decrease in the recruitment of new human resources in the collectivity. The year 2000 marked a pivotal point, initiating a gradual downward trend in employment rates due to a reduction in available financial positions within the collectivity. This situation was further reinforced by a series of directives issued by the Ministry of Interior to various territorial collectivities starting from 2013. These directives prohibited the creation of new financial positions within territorial collectivities, with exceptions for



certain roles experiencing shortages and deemed essential for administrative operations, such as technicians, engineers, and doctors. These exceptions are directly appointed by the supervisory ministry.

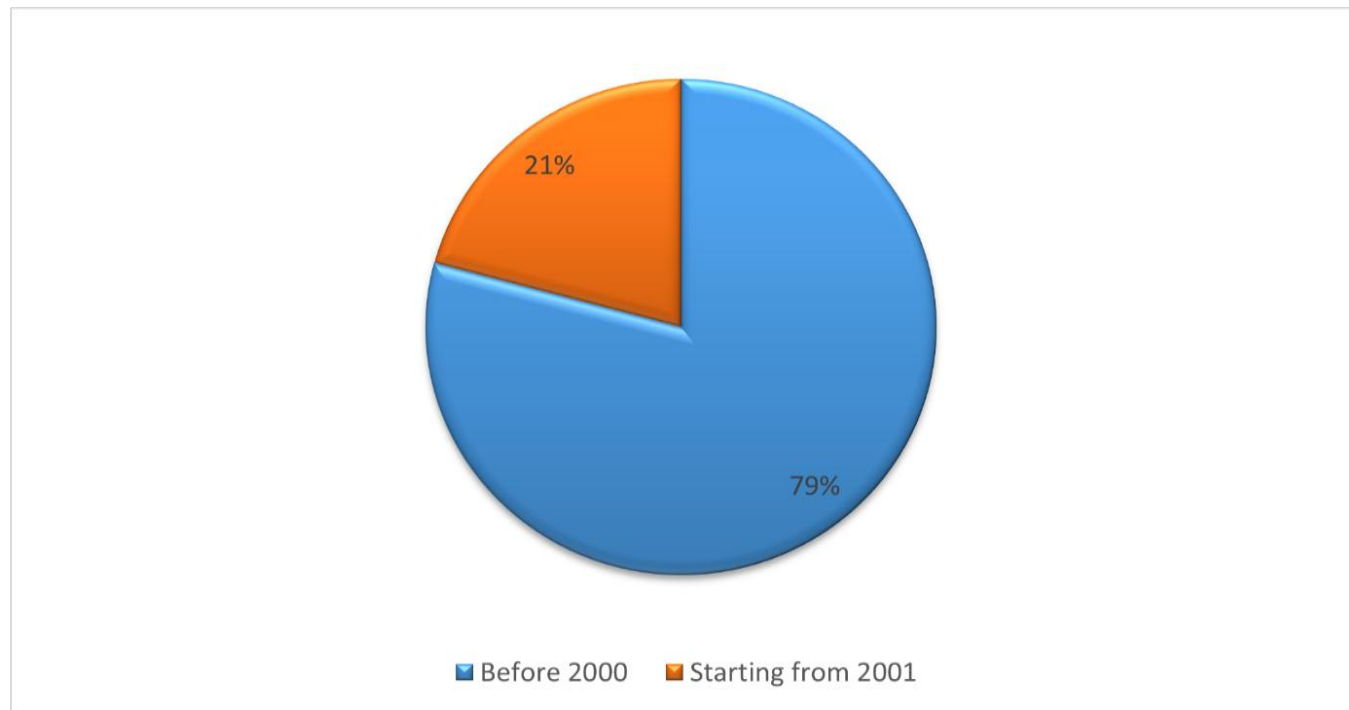


Fig. 5. Employees joining the M'diq collectivity before and after the year 2000

The graphical representation (see Figure 5) reveals that approximately 79% of the human resources constituting the M'diq collectivity were recruited before the year 2000. This fact may pose a challenge in delivering services at the desired level, particularly digital services, due to some employees' difficulty in adapting to change and using modern technologies in administrative management. This challenge is partly attributed to the technical training deficit among this group of employees, potentially impacting the performance of the M'diq territorial collectivity. This situation is exacerbated following the retirement of several key position holders, along with the vacancy of various positions including administrators, engineers, doctors, and technicians.

Technicians constitute about 73% of the total employees at the M'diq collectivity, while the remaining 27% are distributed among clerks, administrators, engineers, and doctors. This significant disparity in professional grades is due to the nature of services provided by the collectivity, predominantly technical due to approximately 75% of the services offered by territorial collectivities in general being spatially oriented and linked to fieldwork, which often requires technical interventions.

Since the enactment of Organic Law No. 113.14 concerning territorial collectivities, these entities have transformed from mere service-providing institutions to developmentally productive institutions, contributing to territorial development at large. This shift necessitates the presence of modern, highly trained competencies across all professional grades, particularly among administrators and engineers in various specialties, to develop plans and developmental strategies for the collectivity that align with the state's aspirations in territorial development.

Consequently, the proportion of senior staff at the M'diq collectivity is around 26%, dominated by second-grade technicians at 32%, followed by outstanding administrators and administrators at 15% and 13%, respectively. However, the proportion of engineers and doctors remains very low, not exceeding 2% for each category.

In the same context, regarding the academic training of the senior staff at the M'diq collectivity, it is somewhat average. Around 51% of this category have not exceeded academic training beyond a baccalaureate or vocational training certificate and below, followed by a bachelor's degree at 38%, while the remaining categories share 11% (see Figure 6).

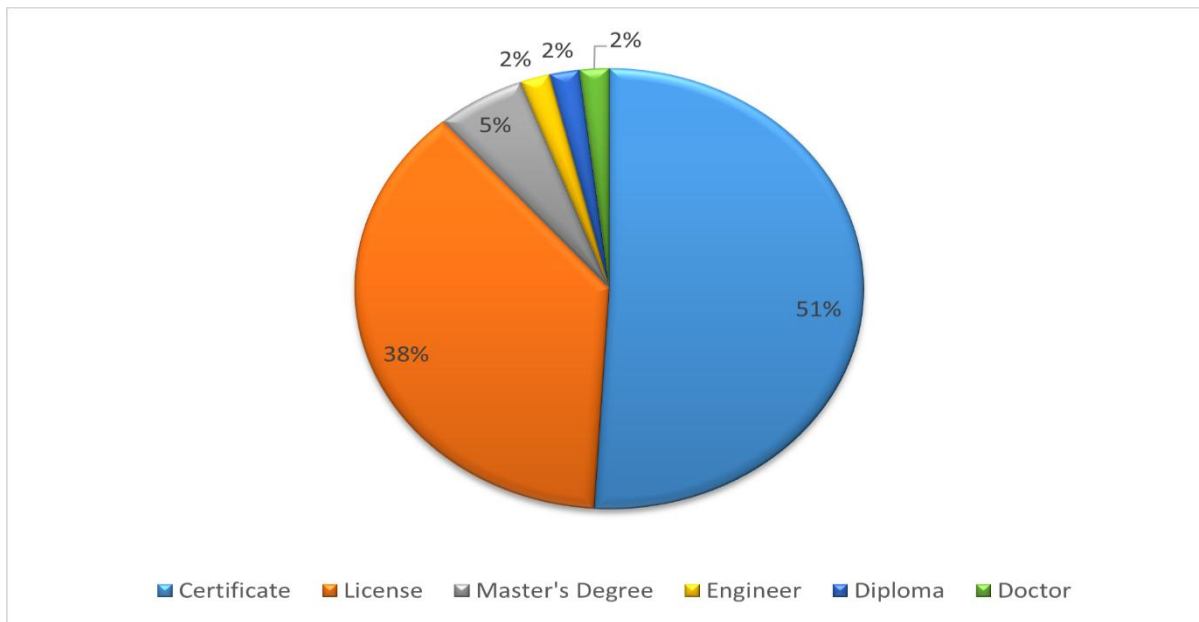


Fig. 6. Senior Executives by Scientific Degrees

In conclusion, for this section, it can be inferred that the human resource structure of the M'diq collectivity is characterized by diversity and imbalance, where 'quantity trumps quality.' This situation is due to various reasons that have prevented the selection of the right employee for the appropriate task, adversely affecting the efficiency of the collectivity's human resources.

The fragility of the human resources at the collectivity is evident through the limited academic training of a significant portion of the employees. Many of these employees, including those in senior positions, have not attained qualifications beyond basic certification. Additionally, there is an overabundance of staff in certain areas, while simultaneously, there is a critical shortage of specialized human resources in key sectors, particularly in urban planning, health, and information technology.

### ICT Budget Insufficiency for Digital Transformation

The realization of the digital transformation project cannot be achieved without adequate financial resources, especially at the outset of the project, which necessitates the provision of various digital devices, networks, and software. In 2021, approximately 510,000.00 Moroccan Dirhams were allocated from the collectivity's budget for the acquisition and maintenance of information technology equipment, of which about 490,804.00 Dirhams were expended (see Figure 7).

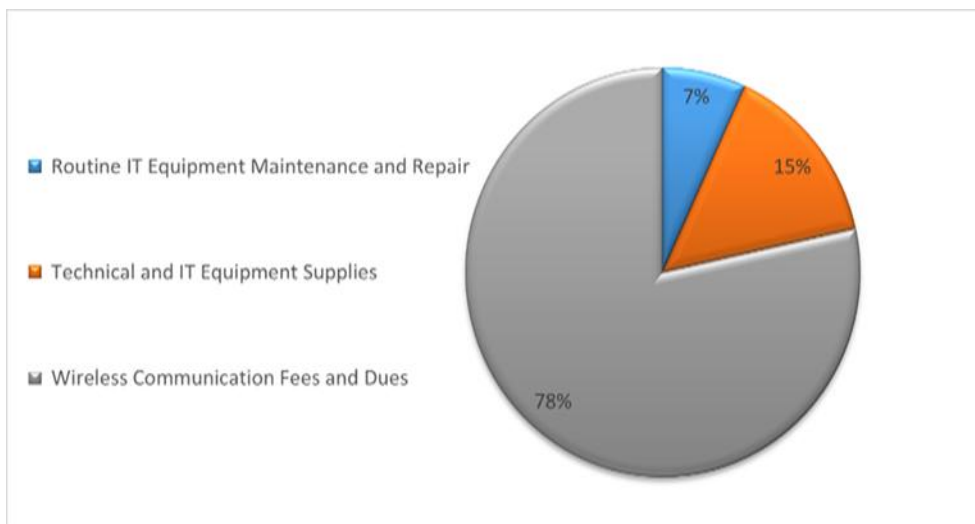


Fig. 7. Budget for Technical Equipment and Machinery Allocated for the collectivity of M'diq for the Year 2021.

The graphical analysis indicates that over 78% of the budget allocated for technical aspects in the collectivity is spent on fees and dues for wireless communications. This is followed by a very small portion, approximately 15%, allocated for the acquisition of technical equipment, while the remaining 7% is designated for the routine maintenance and repair of information technology equipment. These statistics highlight the insufficiency of the budget dedicated to this area, particularly in the acquisition of technical equipment for administration. This suggests a lack of prioritization of this sector by the collectivity's managers, which has negatively reflected on the collectivity's performance in delivering certain services. The institution currently possesses a severely deteriorated and outdated technological infrastructure, which is unreliable for supporting the process of digital transformation and keeping pace with national and international digital transitions. Further implications of this situation will become apparent in the subsequent analysis.

### Readiness of Service Users to Adopt Remote Services

Familiarity with modern tools and technologies is fundamental for the digital transformation of public administration. Providing electronic services necessitates the presence of informed and tech-savvy citizens, enabling them to fully benefit from the electronic services offered by the administration.

The global technological revolution has gradually eradicated electronic illiteracy and bridged the digital divide, fostering a culture of digital awareness among the general populace (Zaanoun, 2023). The majority of citizens now use various modern communication tools in their daily lives. By 2020, approximately 99.91% of households nationwide were equipped with mobile phones, of which 90.4% (ANRT, 2023) were smartphones.

Our study reveals that about 97% of service users utilize modern communication means to perform various daily tasks. Consequently, around 95% of the service users at the M'diq collectivity reported owning a smartphone, and about 37% possess a laptop (see Figure 8). This indicates a significant shift towards embracing these technological tools, especially following the COVID-19 pandemic, which positively impacted the market for modern technologies. In 2020, there was a 64.2% increase in the acquisition of computers and electronic tablets compared to the previous year.

In the same vein, the internet market experienced a notable increase at the national level. By 2020, approximately 84.5% of households had internet access (ANRT, 2023).

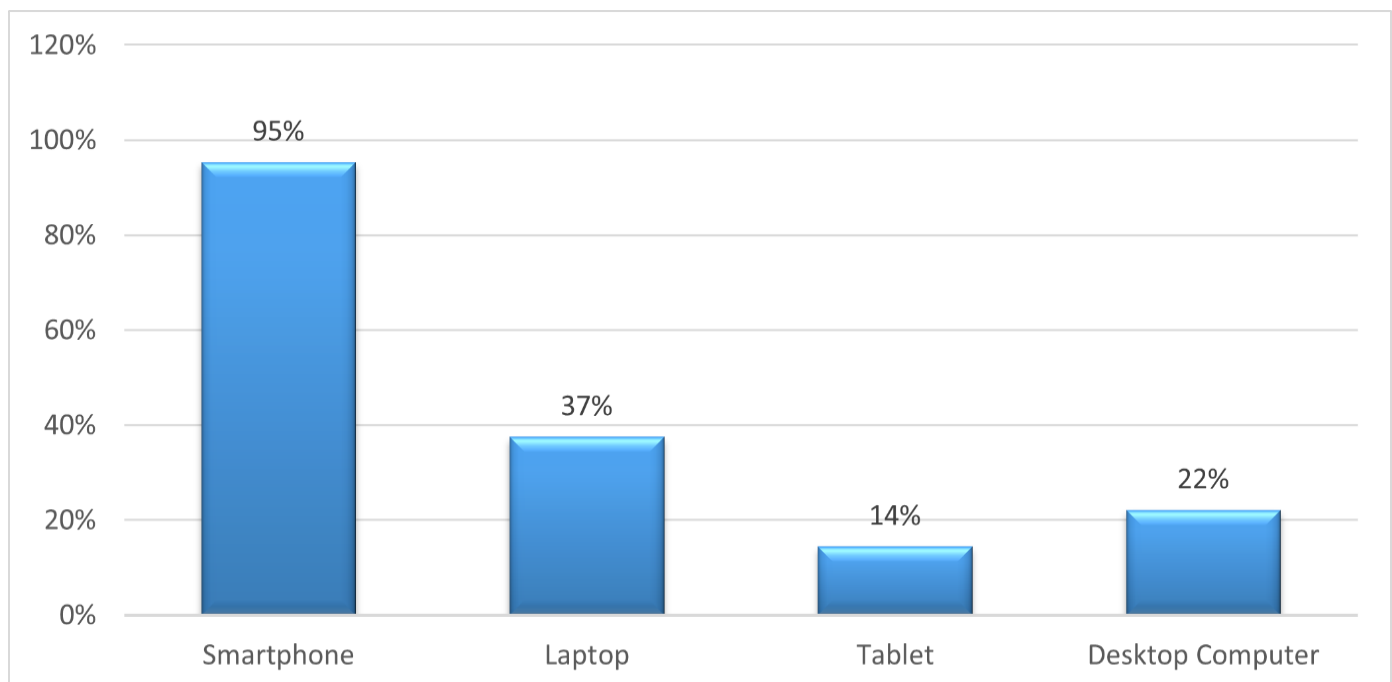


Fig. 8. Utilization of Modern Communication Tools by Service Users

Consequently, the study recorded positive outcomes in this area. The rate of internet connectivity among service users of the M'diq collectivity reached approximately 97%, indicating their significant engagement. Specifically, mobile internet usage accounted for about 79%, followed by the use of WIFI networks at 52% (see Table 2).

Table 2. Internet Connectivity Rates Among Service Users of the M'diq Collectivity

Do you have Internet Access?	Percentage	Type of Connection	Percentage
Yes	97%	Mobile Data (3G/4G)	79%
		Wireless (WIFI)	52%
		Landline	23%
No	3%		
Total	100%		

The analysis of user readiness shows that citizens are largely digitally aware, suggesting that further improvements in digital infrastructure and service accessibility could facilitate better service delivery outcomes.

### Awareness of Digital Transactions Among Service Users

Electronic transactions refer to the totality of operations that are partially or fully conducted using modern technical means. The engagement in the digital transformation process is contingent upon the citizen's awareness of electronic transactions. In recent years, particularly post-2020, there has been a notable development and increased awareness among citizens regarding electronic transactions. This trend has been reinforced by state initiatives aimed at accelerating digital transformation and promoting related projects, especially in response to overcoming the challenges posed by the COVID-19 pandemic. This shift has positively influenced the rise in the proportion of electronic transactions at the national level compared to previous years.

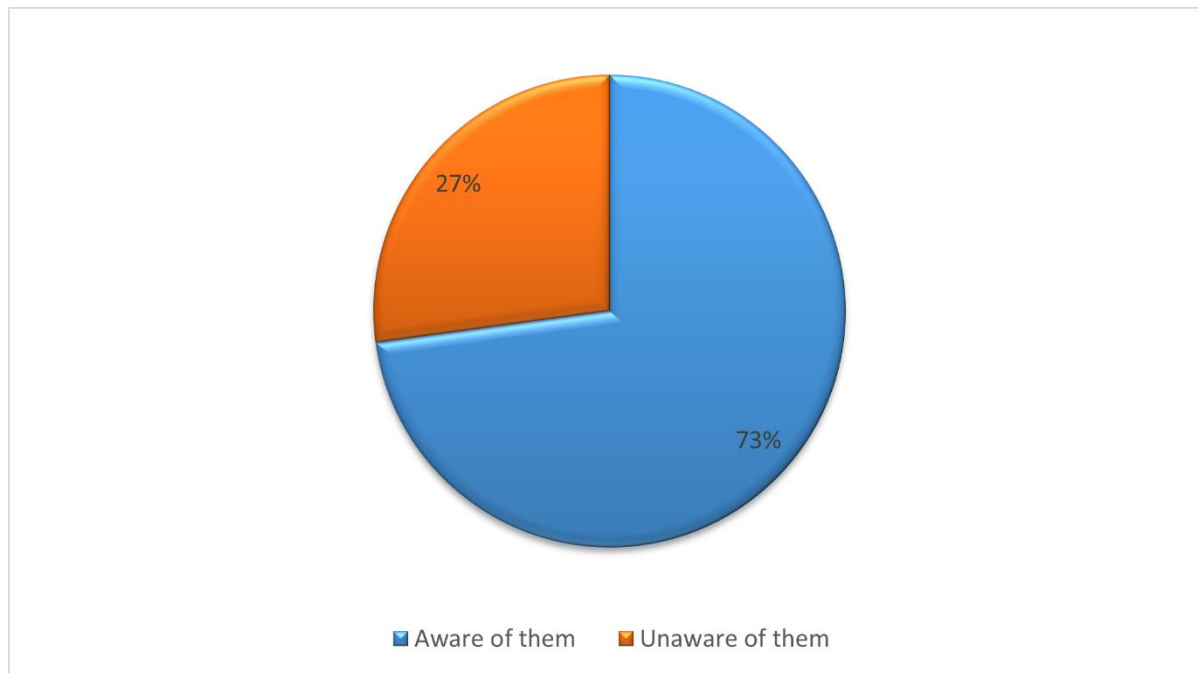


Fig. 9. Percentage of Service Users' Awareness of Remote Services

The awareness of service users within the M'diq collectivity regarding electronic transactions is approximately 73% (see Figure 9). Among these individuals, 61% have participated in at least one electronic transaction. This includes activities such as purchasing top-ups, which account for over 39%, and engaging in online shopping, constituting 49%. Additionally, 30% of these service users have utilized electronic methods for bill payments (see Table 3). These percentages underscore the significant level of engagement and awareness among the service users of the M'diq collectivity in electronic transactions. This trend is indicative of a growing acceptance and readiness for digital services, which is likely to accelerate the digital transformation within the M'diq collectivity.

Table 3. Use of Digital Services by the Service Users of the M'diq Collectivity

Have you ever conducted an electronic operation?	Percentage	Type of Electronic Operation	Percentage
Yes	61%	Purchasing recharge	39%
		Online shopping	49%
		Paying taxes	17%
		Paying bills (water, electricity, phone, etc.)	30%
		Other	4%
No	39%		
Total	100%		

The data reveals a high level of digital engagement among citizens, which indicates a potential for further adoption of digital public services if the technological and administrative infrastructure is appropriately developed.

### The Role of Remote Services in Improving Governance

The ultimate goal of transitioning to digitalization and using electronic administration in territorial collectivities is to enhance the performance of the collectivity and improve the services provided for the benefit of users(Zaanoun, 2023), as well as to eliminate favoritism and nepotism and reinforce the various principles of good governance.

### Remote Services Provided by Territorial Collectivities

The Ministry of the Interior, represented by the Directorate General for Territorial Collectivities and the Digital Development Agency, along with a group of public and private partners, has launched a series of unified digital services for the benefit of territorial collectivities. These systems and digital portals were launched to facilitate the interaction of territorial collectivities with various government administrations (G2G), citizens (G2C), and private economic actors (G2B). This will be discussed in the following sections.

The ultimate goal of launching these digital projects is to improve the services provided to citizens across various public administrations(Kettani et al., 2008), especially to enhance the quality of services offered by territorial collectivities, restore trust in them, and transform them into institutions that contribute to territorial development rather than hindering it. This initiative also aims to improve Morocco's ranking in global e-government indicators.

The table below (see Table 4) shows that the engagement of the M'diq municipality in various digital services launched by the concerned entities is somewhat weak, especially since the municipality does not possess a communal information system (SIC). This lack of a structured, integrated, and updated database on its territorial area negatively impacts the preparation of various developmental plans that concern the municipality.

Table 4. Digital Services in Territorial Collectivities and Their Status in the M'diq Municipality as of April 2022

Service Name	Official Website	Official Launch Date	Launch Date in M'diq Municipality
Communal Information System (SIC)	--	--	Not activated



Integrated Expenditure Management System	<a href="https://www.gid.gov.ma">https://www.gid.gov.ma</a>	2007	2014
Urban Planning License Request Management Platform	<a href="https://urba.rokhas.ma/karazal/index.jsp">https://urba.rokhas.ma/karazal/index.jsp</a>	2020	2020
Economic License Management Platform	<a href="https://eco.rokhas.ma">https://eco.rokhas.ma</a>	2020	2022
Information System for Council Management	<a href="https://majaliss.ma">https://majaliss.ma</a>	2021	2021
Transparency Portal for Sharing Data with Citizens and Administrations	<a href="http://www.chafafiya.ma">http://www.chafafiya.ma</a>	2020	2021
National Public Procurement Portal	<a href="https://www.marchespublics.gov.ma">https://www.marchespublics.gov.ma</a>	2007	--
National Complaints Portal	<a href="https://www.chikaya.ma">https://www.chikaya.ma</a>	2018	2019
Digital Registry Office	<a href="https://bodigital.gov.ma">https://bodigital.gov.ma</a>	2020	Not activated
Electronic Carrier	<a href="https://courrier.gov.ma">https://courrier.gov.ma</a>	2020	Not activated
Program to Improve the Performance of Territorial Collectivities	<a href="https://www.performancecommunes.ma">https://www.performancecommunes.ma</a>	2019	2019
Application Portal for the Blue Flag	<a href="https://pavillonbleu.ma">https://pavillonbleu.ma</a>	2013	2013

The lack of full activation of these digital services suggests that the M'diq collectivity is struggling to fully integrate digital tools into its service delivery model, which affects its ability to modernize public services effectively.

### Governance in Remote Services by the Collectivity

Despite the activation of digital services in the M'diq collectivity, a large segment of the service users, approximately half of the respondents (50.34%), are not aware of the services that have become digitally processed by the collectivity (see Figure 10). This lack of awareness is attributed to the collectivity's failure to issue official statements announcing its engagement in providing a range of remote services for the benefit of the service users.

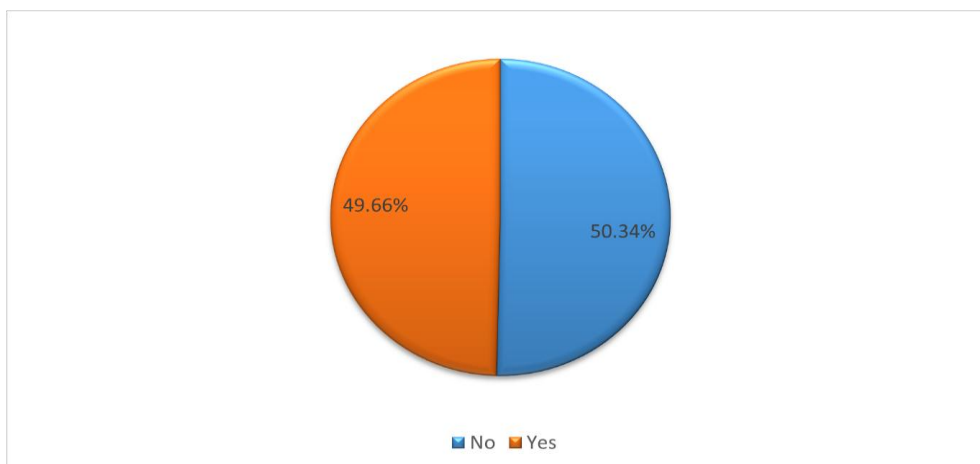


Fig. 10. Are you aware of the services provided remotely by territorial collectivities?

We also note that about 75% of this percentage have benefited from the digital services offered by the collectivity. The national portal for complaints received the highest number of requests from service users, accounting for 10%. This is due to the portal's inception in 2018. Following that, 9% of the requests were for the portal for building permit applications, which was activated within the Tetouan collectivity in 2020. Then comes the civil status portal with 7%, followed by the portal for applying for a license to engage in economic activities, which accounts for 5% and was activated in 2022. Meanwhile, the use of other portals remains very low (see Figure 11).

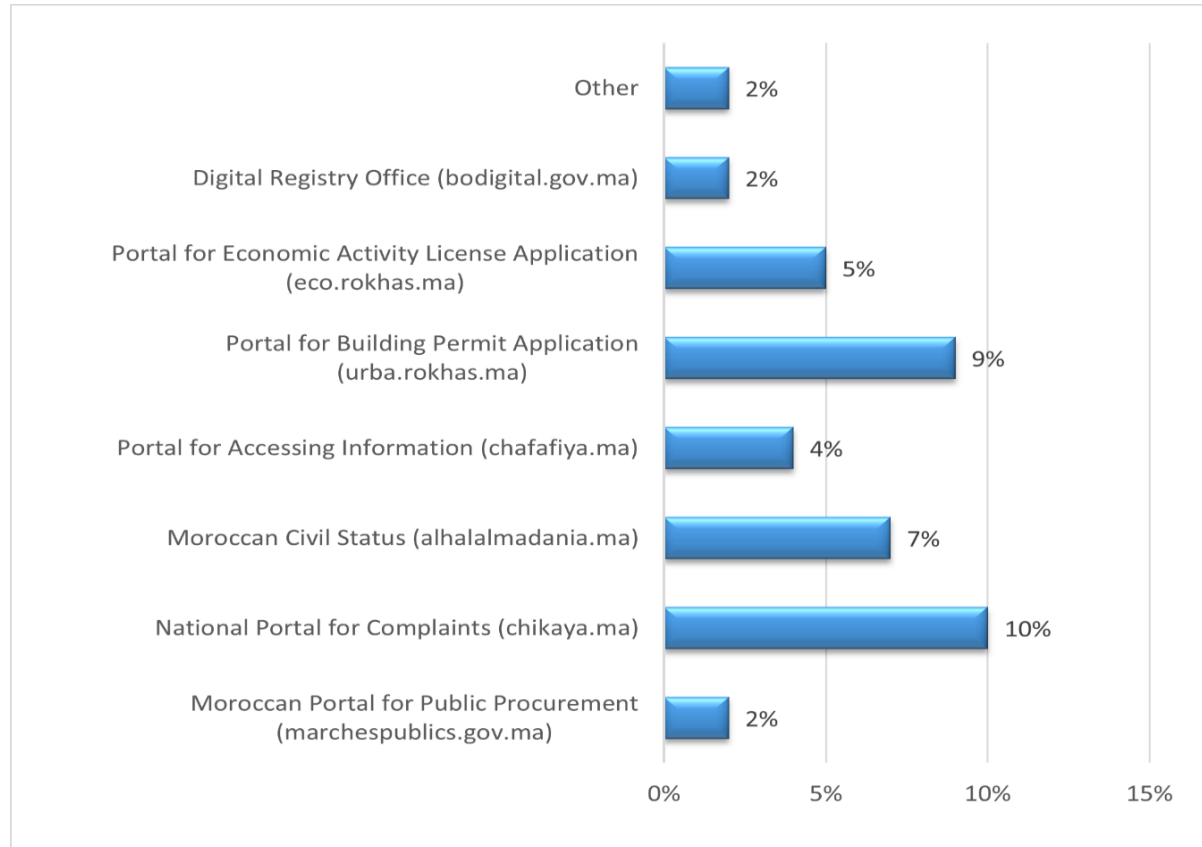


Fig. 10. Awareness of the Service Users of the M'diq Collectivity Regarding the Services Provided Remotely by the Collectivity

In our deeper analysis of the performance of the digital platforms activated in the M'diq Collectivity and the study of the extent of improvement in the quality of services provided compared to the same services that were traditionally offered by the collectivity, it is clear that no significant improvement has been observed in the processing time of service users' requests. More than 55% of the service users stated that the processing time of their requests exceeded more than a month, despite resorting to using digital services (see Table 5). This has caused dissatisfaction and clear discontent among the service users regarding this prolonged duration taken by the administration to process their requests (see Figure 12). The reasons for the delay in processing the service users' requests on these platforms are attributed to the recurring technical problems that have been persistent since their launch, in addition to the lack of technical proficiency of the human resources responsible for the platform in the technical operations required to process the service users' requests. Furthermore, the platform has not been activated in a number of external administrations that are directly related to processing the service users' requests.

Table 5. Comparison of the Processing Time of Service Users' Requests in the M'diq Collectivity by Digital and Conventional Methods

How long did it take to process your request?	Remote Services	Conventional Services
More than a month	54%	55%

Less than a week	17%	17%
One month	16%	15%
Two weeks	12%	13%
Total	100.00%	100.00%

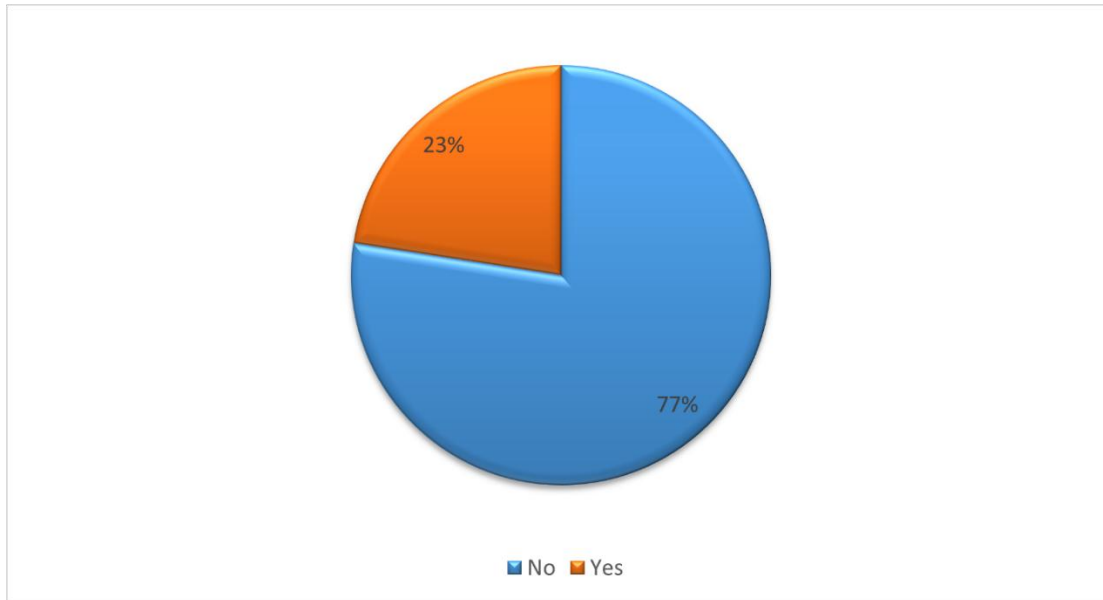


Fig. 11. Satisfaction of Service Users with the Time Taken by the Administration to Process Their Electronic Requests

These digital portals are characterized by a certain level of complexity, as a group of service users have expressed their inability to optimally use these platforms due to technical difficulties in accessing them, and the absence of instructions explaining what they need to do to complete the required service. Additionally, there is the barrier of language, with several platforms using French as the primary language, not to mention the lack of communication points within the platform to interact with the relevant administration (see Figure 13).

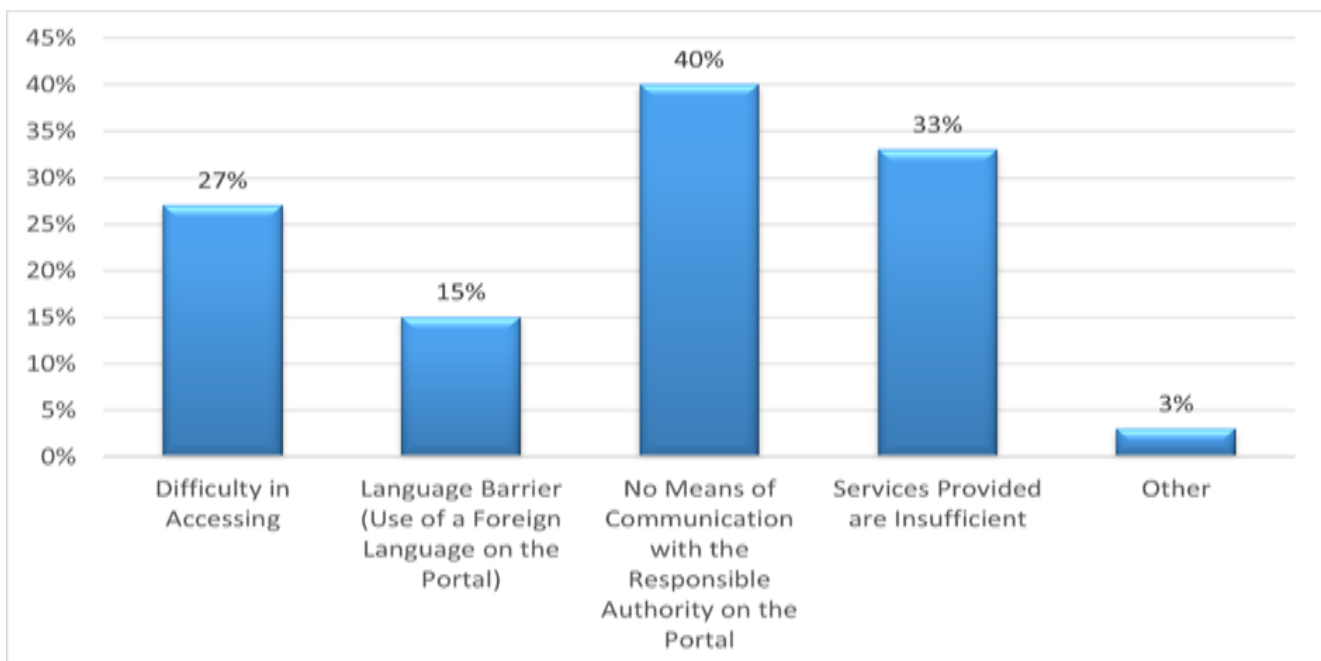


Fig. 13. Problems Faced by Service Users in Using Digital Platforms

## The Extent of Contribution of Remote Services in Improving Administrative Performance.

Based on the experience of service users with digital services in the M'diq Collectivity, approximately 94% of them expressed their approval of the digital services (see Table 6). They confirmed that providing services remotely would contribute to simplifying administrative procedures, considering this process to be more effective and smoother than conventional services. On the other hand, about 84% of the service users expressed that providing services remotely would contribute to faster processing of requests. This can be considered a somewhat moderate percentage, especially knowing that 16% stated the opposite. This is attributed to the negative experience they had during the processing of their electronic requests at the collectivity level, where the period exceeded more than a month.

Table 6. User Perceptions of the Effectiveness of Remote Services in Simplifying Administrative Processes

Contribution of Remote Services in Simplifying Administrative Procedures	Percentage
Yes	94%
No	6%
Total	100%

In the same context, about 78% of service users preferred dealing with electronic administration over paper-based administration due to faster processing of requests, increased transparency, and reduction of favoritism and nepotism in handling citizens' files (see Table 7). Furthermore, 61% of them expressed their willingness to bear the additional costs for digital services.

Table 7. User Preferences for Dealing with Electronic vs. Paper-Based Administration

Do you prefer dealing with electronic or paper-based administration?	Percentage
Electronic Administration	78%
Paper-Based Administration	22%
Total	100%

Despite the continuous increase in the use of digital services by the public, there is still a lingering fear of dealing with electronic transactions. Trust levels remain low due to concerns about the leakage of personal or banking data. Approximately 25% of service users have affirmed that engaging in electronic transactions carries significant risks. On the other hand, about 75% of service users consider it a normal process without any associated risks (see Table 8).

Table 8. Levels of Trust and Security in Electronic Transactions

Confidence and Security Level	Percentage
Normal	62%
Risky	25%
Very Secure	13%
Total	100%

## The Municipality's Website: A Digital Gateway for Territorial Marketing and Governance enhancement

The municipality's website plays a significant role in serving citizens, as it can be considered a major tool for

communication, receiving feedback from service users in advance, as well as territorial marketing for the collectivity and highlighting its qualifications at the national and international levels. As for the website of the M'diq Collectivity, approximately 63% of service users expressed their lack of familiarity with this collectivity portal (see Table 9). The reason behind this is the collectivity's failure to give significant importance to this portal, which has made it unknown to most of the local population and visitors to the region. Additionally, it's worth noting that the collectivity's website has been inactive since 2019 due to the collectivity's inability to fulfill the financial obligations to the company responsible for managing this website.

Table 9. Familiarity with the Municipality's Website

Do you know the municipality's website?	Percentage
No	63%
Yes	37%
Total	100%

The website was often used interactively in the past, as it contained a range of services such as the dissemination of data and news about the collectivity. Additionally, it provided a set of downloadable files for service users, and it featured a feature for submitting complaints remotely.

The objectives of service users' visits to the collectivity's website vary. Approximately 25% of visitors frequent the website to download various legal documents, while 14% of website visitors are interested in submitting complaints remotely (see Table 10). This illustrates the role and importance of this portal in improving service users' access to a range of services without the need to visit the collectivity's premises directly.

Table 10. Reasons for Visiting the Collectivity's Website

Reason for Visit	Percentage
To download legal documents (minutes, decisions, reports, work programs, etc.)	25%
To submit a complaint remotely	14%
To review some administrative procedures	39%
To stay updated on the community's developments	56%
To communicate with the collectivity	15%
Other	3%

The varied reasons for visiting the municipality's website indicate the potential of such a digital gateway to serve multiple facets of governance and public engagement. However, the lack of consistent functionality and awareness among service users has limited its effectiveness as a tool for digital transformation.

## Testing the Hypotheses

Hypothesis	Supported ?	Key evidence from M'diq
<b>H1</b> – Digital-divide (limited staff e-skills & ageing workforce ↓ uptake)	Supported	79 % of employees recruited < 2000; departments with lowest ICT proficiency show 30 + day processing for 55 % of requests (Table 5).



<b>H2</b> – E-governance maturity (platform integration ↓ turnaround ↑ satisfaction)	Not yet supported	Despite portals, 54 % of digital requests still take > 1 month; satisfaction mirrors conventional services (Figure 12).
<b>H3</b> – TOE / isomorphism (external pressure + resources → faster activation)	Partially supported	Platforms were activated mainly to comply with ministry guidelines, but low 15 % ICT budget prevents efficiency gains; comparison with Tangier & Chefchaouen (next section) confirms the budget effect.

Overall, the pattern shows that the internal digital-divide hypothesis (H1) holds, the maturity hypothesis (H2) is not yet realised, and the TOE/isomorphism hypothesis (H3) is only partially met—primarily because resource constraints dilute the effect of external pressure.

## CONCLUSION

This research assessed digital transformation in Morocco's M'diq Collectivity, identifying key barriers preventing effective implementation and offering pathways for enhancing digital governance at the territorial level.

### Key findings

- Digital platforms have not yet achieved the expected efficiency gains: 54% of e-requests still required more than one month, comparable to traditional paper-based processes.
- Main bottlenecks include an ageing workforce with low digital skills (79% hired before 2000) and inadequate ICT investment (only 15% of the technical budget).
- Citizens are digitally prepared (97% smartphone ownership; 73% awareness), but administrative capacity is lagging.

### Theoretical contribution

Anchoring the analysis within the Technology-Organisation-Environment (TOE) framework underscores that digital maturity requires simultaneous attention to external pressures (e.g., national charters, benchmarks) and internal organizational capabilities. External factors alone are insufficient; without aligning organizational capacities and resources, digital governance stalls at the basic "transaction" stage.

### Policy implications

- Raise ICT expenditure to  $\geq 25\%$  of capital outlays to modernize hardware, software, and connectivity, directly improving service efficiency.
- Launch targeted digital-skills training and peer-mentoring for pre-2000 employees to reduce internal resistance and skill deficits
- . Mandate cross-agency service-level agreements ensuring timely external processing, thus reducing bottlenecks.

### Limitations and future research.

This is a single-case study; findings may not generalize across all Moroccan collectivities. Follow-up work should (i) replicate the design across multiple communes, (ii) track performance indicators beyond 2025, and (iii) test whether pooled ICT units offer a scalable alternative to budget increases.

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