

Resistance to Change and Implementation Challenges of AI in Moroccan Public Administrations

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Abstract. The integration of artificial intelligence (AI) into public administrations presents significant opportunities for improving efficiency, transparency, and service delivery. However, its implementation in the Moroccan public sector faces multiple challenges, particularly related to organizational resistance and structural limitations. This study examines the underlying factors driving resistance to AI adoption in Moroccan administrative institutions and identifies the key obstacles that hinder successful implementation. Using a qualitative methodology based on semi-structured interviews with public officials and experts, the research explores perceptions, institutional cultures, and technical barriers encountered during digital transformation initiatives. The findings reveal a strong correlation between resistance to change and factors such as lack of digital literacy, fear of job displacement, limited infrastructure, and insufficient leadership commitment. Moreover, the absence of a coherent national strategy and clear regulatory frameworks further exacerbates the difficulties of AI integration. The study concludes that successful implementation of AI in public administrations requires not only technical upgrades but also comprehensive change management strategies, capacity building, and inclusive policy frameworks. These results highlight the urgent need for a holistic approach to digital transformation in the Moroccan public sector, where human, institutional, and technological dimensions are addressed simultaneously to ensure sustainable and effective innovation.

Keywords: *Artificial Intelligence; Public Administration; Resistance to Change; Implementation Challenges; Digital Transformation; Morocco; Administrative Innovation; E-Government; Organizational Change; Public Sector Reform.*

1. Introduction

Artificial Intelligence (AI) is gradually becoming a central tool to modernize Public Administrations (PAs) worldwide (Wirtz et al., 2019). Its uses hold the potential to radically change how public services are delivered by improving efficiency, cutting costs and bringing transparency (Mergel et al., 2019). In an increasingly digital world, the importance of automation and data analytics is strategic and governments are heavily investing in technology solutions to meet their citizens and businesses' rising expectations (World Bank, 2021). As in many other countries, Morocco, in its commitment to strengthen public governance and promote economic development, is no stranger to this worldwide trend (ADD, 2021). The Kingdom has been working on various digitalization projects and AI is becoming more and more the center of these (ADD, 2022). These measures seek to not only improve and streamline administrative procedures, but also to enhance equitable access to public services and bring the nation into line with best international practice in the field of e-governance (Heeks, 2006). Nevertheless, the use of AI in the Moroccan public sector does not come without its own set

of formidable challenges -primarily the bureaucracy and the socio-economic challenges which are continuously marring the Moroccan socio-economic landscape (Bannister and Connolly, 2011).

While AI holds strong potentials in terms of transforming the Moroccan Public Administrations, it encounters several obstacles that limit or prevent its efficient adoption. One barrier is the cultural and institutional resistance. Resistance can also be voiced through skepticism of new technologies and concerns about job displacement or loss of entrenched power, especially for long tenured civil servants. Second, Moroccan governments have little budget to invest in high-tech infrastructure. Most budgets assigned for digital transformation do not have the capacity to support the massive expenses on AI systems, training, and maintenance solutions. The final point relates to the underdeveloped infrastructure — including uneven availability of digital technologies in various parts of the country — which makes the application of [AI] yet harder. Both of these challenges also contribute to a limitation of the ability of the government to upgrade its administration services and take full advantage of technology advancements. The costs are not only economic, but also social, since they influence the quality of public services to citizens and the effectiveness of public policies.

The purpose of this article is first, Identify the obstacles to the integration of AI in public administration in Morocco. In especial, we aim at characterizing the underlying mechanisms of resistance to change, raising structural, economic and technological constraints that might be causing delay this adoption. Attention is paid to perceptions of administrative actors and to comparisons with similar experiences in other developing countries. Through qualitative interviews with civil servants and managers, and through international comparative work, this paper seeks to provide practical prescriptions for solving these issues. We are looking at how thoughtfully conceived public policies and carefully focused implementation approaches could contribute to transforming public administration to better serve the citizens.

The structure of the article is as follows: the first section contains a review of the literature, which provides a theoretical backdrop for individual and organizational resistance to change and technological challenges in the public sector. The qualitative approach used for this study is described in the methods section, and includes participant selection and analysis procedures. The results the main obstacles identified are presented in the results, and compared with existing analyses of other countries. This essay interprets these findings in the context of available theories and provides practical suggestions to enhance AI realization in Moroccan public administrations.

2. Literature review

a. Theoretical Framework

In order to comprehend the change-related obstacles that affect AI usage in Moroccan public administrations, it is necessary to draw into existing theories of change in management and technology (Armenakis and Bedeian, 1999). Kurt Lewin's theory of resistance to change is also applicable (1951). Lewin developed a force field analysis where he described a three-step model of change (unfreeze, change, refreeze) where organizations manage to gain acceptance of rationality, then to execute change action and finally to freeze new behaviors. John Kotter (1996) also added value through his eight-step model, in which a sense of urgency and shared vision are recognized as key success factors in the process of change at the organizational level. From the vantage point of technology research, Everett Rogers' (1962) diffusion of innovation theory, and the notion of absorptive capacity (Cohen & Levinthal, 1990) are applicable as well. Rogers (1962) emphasizes that adoption of innovation is based on the relative advantage, compatibility with value systems, and perceived simplicity of use. Cohen and Levinthal (1990), for their part, emphasize an organization's capacity to recognize the value of new information,

to assimilate it, and to exploit it. These frameworks also help to explain why some administrations might be less amenable or take longer to embrace AI than others.

b. Challenges of AI Implementation

There are many of these issues that are out there in the literature about the challenges and what makes it difficult to apply AI within the public sector and we've summarized those in existing literature. One, organizational culture is repeatedly identified as a major barrier (Dwivedi et al., 2021). Plus, many administrations are based on hierarchy and have a solid infrastructure based on bureaucracy, which slowed down by disrupting technologies like AI (Bannister et Connolly, 2014). With many in the public sector at the top of the age pyramid, the reaction to AI could be one of fear over job and power loss (Bughin et al. 2018). Second, data governance is one key challenge. AI depends on the availability of high-quality data, yet in most public administrations, data management systems are disconnected, outdated and insecure (Mikhaylov et., 2018). A lack of established regulations over the data protection and ethical use of AI is adding to the mess. Research suggests this lack of trust in the AI's use of sensitive information is a significant obstacle, particularly in countries with governmental transparency issues (Zuiderwijk et Janssen, 2014). Another key challenge is the low availability of resources to implement AI. AI also needs a significant digital investment in both infrastructure and skills and in system upkeep. Most emerging countries, such as Morocco, suffer from budgetary restrictions which make it difficult to prioritize these investments. Furthermore, the dearth of training and the skill set inherent in AI for personnel in government sector is a hurdle in the appropriate technology adaptation and implementation (European Commission 2020).

c. Comparative Studies

To better capture the daunting nature of Morocco's challenges, it is useful to consider such countries as the meeting ground for AI and e-government (OECD, 2019). India's experience with AI in public services for example, offers lessons that are valuable (Madakam, S., Ramaswamy and Tripathi, 2019). India has announced grandiose initiatives even as it has stalled over fragmented databases and institutional obstruction. Addressing these barriers, the Indian government invested in awareness and training programs for civil servants and fostered public-private partnerships to enhance digital infrastructure. A similar example is Estonia (Kalvet, 2012), which is frequently mentioned as the benchmark for a successful e-governance implementation. Despite being a significantly smaller country, Estonia's approach to adopt AI benefited from an innovative-friendly organizational culture and mature technological foundation. The Estonian model demonstrates the need for a legal framework and strong infrastructure to ensure the success of AI projects. For Morocco, these cases point out toward the need for a comprehensive approach (OECD, 2019). Not only investing in infrastructure, but also driving change management programs to cross cultural and institutional barriers and designing data governance structures that reinforce trust and transparency (Wirtz et al., 2019).

3. Methodological approach

a. Qualitative Approach

This research follows a qualitative methodology that makes it possible to delve further into the perception and experience of those involved in the implementation of AI in the Moroccan public administrations. This approach is underpinned by the exploratory nature of this research where the focus is on understanding human aspirations, attitudes and concerns towards technological changes. While quantitative methods cannot capture such subtleties of organizational and cultural behavior, this qualitative approach to data collection allows for the capture of rich stories narratives/ stories" and nuanced insights. It is especially relevant for researching the dynamics of resistance to change and perceived barriers, providing a holistic overview taking

subjective and contextual dimensions into consideration.

Theories of change and technology management, for instance Lewin and Rogers, substantiate this argument. In order to look at how these theories have emerged in Moroccan public administration, one must interact directly with administrative actors in order to measure their experience and to interpret their view. Additionally, this approach is useful for identifying divergent and convergent views of multiple stakeholder groups, such as staff, managers, and policymakers.

b. 3.2. Data Collection

Data will be collected primarily through semi-structured interviews and a comparative analysis of international experiences.

Semi-Structured Interviews

- **Participant Selection Process:** Participants will be chosen among members of public administrations in Morocco and involved in AI programs. The participants will be civil servants of different hierarchical levels, ICT project managers in government administration and individuals who have taken part in formulating a digital strategy in the country. Special emphasis will be placed on the geographic and divisional diversity of the sample to capture a comprehensive understanding.
- **Topics Covered:** The interviews will address several key themes, including:
 - **Perception of AI:** How do participants perceive the potential impact of AI on their work and organization?
 - **Challenges Faced:** What are the main challenges they encounter in implementing AI, such as resistance to change, lack of training, or budget constraints?
 - **Expectations and Solutions:** What measures do they believe would facilitate AI adoption, and how do they perceive institutional support for these initiatives?
- **Justification of the Method:** Semi-structured interviews allow participants to express their opinions freely while ensuring that the core themes of the research are addressed. This method also provides the flexibility to explore new ideas that may emerge during discussions.

c. 3.3. Comparative Analysis

- **Description of the Comparative Analysis:** The experience of Moroccan administrations will be compared with those of other developing countries that have undertaken similar AI adoption initiatives. Countries selected for comparison—such as India or Kenya—will be chosen based on criteria including level of economic development, administrative structure, and institutional culture. The aim is to identify successful strategies implemented elsewhere that could be adapted to the Moroccan context.
- **Comparison Criteria:**
 - **Infrastructure:** Compare the technological and digital resources available to support AI.
 - **Budget:** Analyze how budget constraints have been managed in other contexts.
 - **Institutional Culture:** Examine similarities and differences in cultural resistance and change management approaches.

d. 3.4. Methods of Analysis

The interviews will be analyzed using thematic analysis, a method well-suited for identifying, analyzing, and reporting patterns (themes) within qualitative data. The analysis process will

follow these steps:

- **Transcription of Interviews:** All interviews will be transcribed to ensure rigorous analysis.
- **Thematic Coding:** A coding system will be developed, incorporating both pre-established codes based on the literature review (e.g., cultural resistance, budgetary constraints) and emerging codes that arise during the analysis. These codes will then be grouped into major themes that reflect the main challenges and perceptions of the participants.
- **Cross-Validation:** To ensure the reliability of the findings, themes will be validated through independent coding by two researchers. Any discrepancies will be discussed to reach a consensus.

Thematic analysis will help identify common patterns and divergences in the participants' perceptions, while also providing an overview of the unique challenges faced by Moroccan public administrations. This will offer a strong foundation for formulating contextually relevant and tailored recommendations.

4. Expected results

a. 4.1. Key Identified Obstacles

From the review of literature and the planned interviews with public sector professionals, we expect that many the main barriers may be identified to the implementation of AI in Moroccan public administrations. The main hypotheses include:

- **Cultural and Institutional Resistance:** Resistance to change is anticipated to be one of the greatest challenges. That resistance can come from a number of places, a fear of automation, of job loss, mistrust of data sharing and reluctance to embrace new ways of working. There is some precedent for this kind of resistance, and the nature of Moroccan bureaucratic culture which values hierarchy, and established procedures could deepen it.
- **Financial Constraints:** Budgetary constraints are also expected to act as a stumbling block for the adoption of AI. Some regimes simply may not have the capital to invest in technology, staff training, or premium AI. This problem may be exacerbated in rural areas, which may tend to be in domains of lower public priorities.
- **Gaps in Technological Infrastructure:** Participants should be encouraging to point out the large gaps in techno infrastructure, obsolete technology, unreliable connectivity. Infrastructure ceiling like such can curtail the capacity of the administrations to adopt and utilize the AI tools in an effective manner.
- **Lack of Skills and Training:** Another candidate is the skills gap in technology and AI among civil servants. With the need to skill up administrators to leverage cutting-edge technology, and to handle AI-related anxieties, it is likely to become a key challenge and a top priority.

These hypotheses provide a framework for analyzing the interviews, enabling the research to test whether these obstacles are indeed perceived as the most pressing by participants and to explore their underlying causes.

b. 4.2. Sectoral Differences

Another key theory to be tested is the widely differing openness towards implementing AI among administrative sectors. We expect to see some industries more inclined to embrace AI, either because of the way they work, their access to expertise, or the competitive requirement for them to become digital.

- **More Receptive Sectors:** A high number of sectors with great need for data analytics

can become more receptive to AI-based solutions, i.e., public finance or human resource management. These industries, frequently consumer-facing and tasked with doing more with less, could see AI as a way to make processes more efficient and minimize their administrative burden.

- **Less Receptive Sectors:** Conversely, some traditional sectors like agriculture or education may feel resistant due to the sophistication of their business, lack of resources, or a lack of immediacy regarding AI's advantages. The type of activities in these areas — typically non-digitizable and often not easily commoditized — may make AI use seem less pertinent or feasible.

This segmenting across sectors will facilitate the generation of more 'tailored' and 'precise' recommendations, informed by interventions that are adapted to the requirements and situation of each sector.

c. 4.3. International Comparisons

The findings of the comparison with other countries that have implemented AI in their public administrations are as well valuable to evaluate the strengths and weaknesses of Moroccan administrations. From these comparisons, we hope to find the following:

- **Strengths of Moroccan Administrations:** We shall not forget that Morocco has relatively established data management regulatory, or some sort of political voluntarism to back technical progress if there are barriers. Assets like the national digital strategy might be useful to leverage.
- **Weaknesses Compared to Other Countries:** However, the comparisons might also uncover less rosy aspects, for instance a lack of public-private partnerships or an inadequate upskilling strategy for the civil service. We can compare Morocco with the imbalance structure of countries such as India or Estonia from which well adapted models for Morocco, with regard to change management and infrastructure, can be distilled.
- **Lessons Learned from Other Experiences:** Case studies from around the world will likely suggest to us that AI in the public sector is most often successful when it's a combination of visionary leadership, intensive training programs, and tech-startup-friendly policies. These lessons learnt will be important in developing recommendation on what Morocco could do for boosting the adoption of AI.

This section of the expected results will help contextualize Morocco's specific challenges while proposing solutions inspired by international best practices.

5. Discussion

a. 5.1. Interpretation of Results

The purpose of discussing findings is to relate them to and connect them with existing theories and experiences of other countries. The findings of the study will probably support Lewin's (1951) and Kotter's (1996) proposed theories on resistance to change. For instance, if cultural and institutional resistance surfaces as a key hurdle, it will further suggest that technology-led transformation calls for not just technical shifts, but profound changes in organizational values and behavior.

By cross-checking these results with the knowledge of other countries, for instance India, Estonia, we will be able to tell how theoretical models are visual with industrial challenges. It could be, for example, that the practice of India tells us how significant investments in awareness and training helped in overcoming resistance of change, and the Estonian example shows how it is indispensable to build a state-of-the-art digital infrastructure before we start to implement high-tech. These comparisons will also contribute to an understanding of what is

specific about the Moroccan context and what elements of successful strategies may be transferable.

Similarly, the interpretation of those results will reflect subtleties in attitudes towards AI within industry groups. If data-driven industries (such as public finance) seem more open to adopt these apps, this might signal the relevance of fit between the new technology and work of these type of employees—a principle underlying the Diffusion of Innovation theory initially proposed by Rogers (1962).

b. 5.2. Practical Implications

Against this background, some practical implications that should provide the implementations of AI in Moroccan public administrations with an enhanced footing can be put forward on the basis of the findings found:

- **Training and Skill Development Programs:** Training programs for public servants will be one of the important strategies for minimizing resistance. These courses should not only teach trainees the technical ins and outs of AI, but also emphasize how the technology can help them in their day-to-day work. One-off workshops or mentoring sessions could also help to demystify AI and encourage a culture of lifelong learning.
- **Improvement of Digital Infrastructure:** Addressing the technological divide between urban and rural areas could be achieved by investing in state-of-the-art digital infrastructures such as revamping data management systems and provision of internet services to all parts of the country. Searching for public-private partnerships to co-fund such initiatives may also be considered.
- **Communication and Awareness Initiatives:** Open communication is essential to mitigate fears about AI. Public awareness efforts and testimonials from public workers who have prospered with AI could help, on this front.” The point is to demonstrate that AI is a supportive tool rather than a threat, and to foster a trustworthy climate in which it can be used.
- **Experimentation and Pilot Projects:** Pilot projects for AI adoption in the strategic sectors could be rolled out before scaling up. It would enable risk taking and iteration of potential solutions, as well as evidence for positive impact, before rolling out widely.

c. 5.3. Limitations of the Study

As with any research, this study is not without its limitations which require a cautious interpretation of results:

- **Sample Size:** One of the possible limitations could for the sample size. While qualitative interviews allow us to obtain in-depth information, the sample size will be small, which could limit the generalizability of the findings to all Moroccan public administrations. Selection bias may be created by the population of civil servants who were available and willing to take part.
- **Subjectivity of Interviews:** A further limitation is the subjective nature of qualitative interviews. Propensity for bias in participant's perceptions or opinions, based on lived experience, provides the potential for outcomes influencing distortion. Second, the interpretation of results by the investigators may also be biased as they have their expectations or hypotheses.
- **International Comparison:** Although comparisons add value, it must be considered that Moroccan demographics and institutions are different from the countries compared (e.g. India, Estonia). Such differences may prevent foreign strategies from being easily imported and adjusted to the Moroccan context.

Such limitations do not detract from the study, but only show that more research should be

conducted to develop these recommendations and their potential effectiveness across various settings should be evaluated. Hybrid methodologies including both qualitative and quantitative analysis can be adopted, if the research on the role of AI in PA aims for a more complete view of the phenomenon.

6. Conclusion

This research revealed the difficulties and obstacles prevailing in implementing artificial intelligence (AI) in Moroccan administrations. From a qualitative perspective, we found a number of important barriers: cultural and institutional resistance; lack of budget; skills about AI and digital; and gaps in digital infrastructure. These obstacles are entrenched in inflexible organizational models and a bureaucratic tradition which favors more conventional and hierarchical ways of working.

However, there were also potential solutions to the barriers that could enable adoption of AI. Training, infrastructure-development and communication (to increase awareness among civil servants of the benefits of AI) are the solutions. In addition, the significance of intersectoral collaboration and pilot projects was stressed as a practical way to experiment with and refine technologies before broader implementation.

For each lesson there are several actionable activities which could be recommended for taking an appropriate direction to steer Moroccan administrations to adopt AI as informed by the lessons learnt:

- Adopt governance frameworks that encourage innovation: It's essential to have clear policies in place that encourage innovation, yet create guardrails around data protection and transparency. These should also consist of ethical principles that credit AI tools, management of AI data and high-security evidence protocols.
- Invest in training and skill development: There should be funding for continued education for civil servants. Partnerships with universities and tech companies can be created in order to develop AI training programs which would educate on AI the basics, practical application of AI and skills for leading tech projects.
- Modernize digital infrastructure: The government needs to invest resources in digitizing infrastructure, especially in rural areas and local government. This involves upgrading data management systems, enhancing internet connectivity, and procuring AI solutions customised for the requirements of administrations.
- Launch communication and awareness initiatives: Communication campaigns to explain the benefits of AI in the provision of public services and to address the fears of civil servants can be extremely useful. These efforts must be open, accessible, and directed toward creating a culture of confidence in AI.
- Encourage pilot projects: Pilot projects could be initiated to reduce the risks of AI deployment and to test in a tangible manner where AI can be applied in specific sectors. These projects will provide a platform for the design of larger strategies, and provide opportunities to learn how to calibrate technologies and approaches in the process.

While the present work does contribute to the comprehension of AI adoption challenges and solutions in Moroccan administrations, it also presents opportunities for future research. The following are potential subject areas for future research:

- Quantitative Analysis of the Impact of AI: Quantitative research could measure the effectiveness, speed, and transparency in which public services are provided by the implementation of AI. This would allow us to quantify the gains from using AI, and bring policy recommendations forward on firmer footing.
- Longitudinal Studies: Researchers might conduct long-range studies of the development of AI applications in governments over time and compare how perceptions, barriers and outcomes evolve. This knowledge would assist in understanding the extent to which

strategies were effective to address resistance to change.

- Interregional Comparison: Study comparing AI adoption in different regions of Morocco will be able to find the variation areas and the factors that are more special and influenced the success or failure of the technological project. Such an comparison would be instrumental for adjusting implementation strategies to local contexts.
- Studies on the Ethics and Governance of AI: Research could explore the ethical implications of AI in the public sector, particularly regarding data protection, transparency in automated decision-making, and issues of accountability. These studies would be essential for developing robust and inclusive governance frameworks.

In conclusion, although adopting AI in Moroccan administrations is facing major challenges, it also constitutes a great opportunity to the modernization of public services and the improving of citizens' daily lives. Well-crafted public policies and a team spirit among all stakeholders can ensure that Morocco becomes one of the success stories of digital transformation in the public sector.

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