The Role of Artificial Intelligence in Public Policy Management: The United Arab Emirates as a Model

Hewa Abdulkhaleq Ahmed
Department Of Political System & Public Policy, College of Political Sciences,
Salahaddin University-Erbil
Correspondence: Hewa.Ahmed@su.edu.krd
ORCID 0000-0002-1426-4889

دور الذكاء الاصطناعي في إدارة السياسة العامة : الامارات العربية المتحدة نموذجاً

هيوا عبدالخالق احمد

جامعة صلاح الدين-اربيل، كلية العلوم السياسية، قسم النظم السياسية والسياسة العامة

ملخص:

يستكشف هذا البحث الدور التحويلي للذكاء الاصطناعي في إدارة السياسات العامة، متخذاً من دولة الإمارات العربية المتحدة معياراً للتنفيذ الفعال. ومع سعي الحكومات لتعزيز الكفاءة وتحسين تقديم الخدمات، يقدم الذكاء الاصطناعي فرصاً كبيرة لإحداث ثورة في ممارسات الحوكمة. تحدد الورقة الآثار متعددة الأوجه لتبني الذكاء الاصطناعي، بما في ذلك المكاسب المحتملة في الكفاءة الإدارية وتخصيص الخدمات لتلبية احتياجات المواطنين. ومع ذلك، فإن دمج الذكاء الاصطناعي يثير أيضاً اعتبارات وتحديات أخلاقية مهمة، خاصة فيما يتعلق بالتحيزات في الخوارزميات والحاجة إلى أطر تنظيمية قوية. ومع التأكيد على أهمية مشاركة أصحاب المصلحة والتعلم المستمر، تقترح الدراسة نهجاً تعاونياً لتنفيذ الذكاء الاصطناعي في السياسة العامة يعطي الأولوية للشفافية والمساءلة. من خلال تحليل شامل للاتجاهات الحالية وأفضل الممارسات، يدعو البحث إلى استراتيجية مدروسة وشاملة في تبني الذكاء الاصطناعي، مما يضمن أن التطورات التكنولوجية تخدم المصلحة العامة وتعزز الحوكمة العادلة.

Abstract

This research explores the transformative role of Artificial Intelligence (AI) in public policy management, utilizing the United Arab Emirates (UAE) as a benchmark for effective implementation. As governments strive for enhanced efficiency and improved service delivery, AI presents significant opportunities to revolutionize governance practices. The paper outlines the multifaceted implications of AI adoption, including potential gains in administrative efficiency and the tailoring of services to meet citizen needs. However, the integration of AI also raises critical ethical considerations and challenges, notably concerning biases in algorithms and the need for robust regulatory frameworks. Emphasizing the importance of stakeholder engagement and continuous learning, the study proposes a collaborative approach to AI implementation in public policy that prioritizes transparency and accountability. Through a comprehensive analysis of current trends and best practices, the research advocates for a thoughtful and inclusive strategy in embracing AI, ensuring that technological advancements serve the public interest and foster equitable governance

1. Introduction

The adoption of Artificial Intelligence in public policy management is gaining traction globally, especially in developing nations, promising significant transformation for complex challenges. Countries like China, Singapore, and the UAE are leveraging AI to enhance governance and public service. AI holds the potential to improve the effectiveness, efficiency, inclusion, and proactivity of public policies. Local government agencies are increasingly prioritizing AI, reflected in emerging research proposals across various sectors, including urban

planning, finance, public health, and environmental services. Growing public and academic investment in AI for public policy underscores the need for a thorough examination of current knowledge in this field.AI discoveries have greatly expanded the potential policy modeling capacity of scholars. Since the field of public policy management has progressed rapidly and increasingly embraced AI-powered data-driven modeling approaches, these capabilities could be desirable complements. Prior studies explored the theoretical capabilities of AI tools, focusing on specific sectors such as finance, transportation, or presidency, limiting the opinions of broader scholars of disciplines outside public policy. AI-powered tools will be examined from a public policy management science perspective, providing a comprehensive understanding of these tools, their implications for public policy management, and their prior usage in various sectors.This proposed research agenda is timely as transformative implications of AI findings for management disciplines are catching the attention of leading scholars, including those in the field of public policy and management. Training new scholars who could capitalize on the power of AI discoveries and broaden the methodological frontier will be a substantial contribution to this rapidly evolving discipline. AI could possess public policy making-related capabilities, such as accessing up-to-date policy-relevant information and rapidly analyzing high-dimensional data. Since scholars agree that data-driven tools mature in distinct predictions of policy outcomes, scholars in public policy management have actively wielded AI-powered tools to assist modeling. Insights from AI findings could inspire the public policy management science field to explore data-driven modeling, complementing existing knowledge.

2. Understanding Artificial Intelligence

Public policy is how governments address public problems, involving decisions and actions. It is often seen as a process of proposal and deliberation by governing bodies. This work adopts a broader definition, viewing public policy responses in various forms, both formal (like legislation) and informal (such as government behavior). Governments perform public policy across sectors including law enforcement, education, infrastructure, health, regulation, and technology services. They engage in public works and consumer services through specialized agencies. The rise of information and communication technologies has enhanced public access to information, increasing expectations for good governance. Consequently, there is growing pressure on governments for transparency, accountability, and citizen involvement in the public policy-making process. (Head, 2022)(Howlett, 2023)(Hill & Hupe, 2021)

2.1. Definition and Scope

Public service refers to a structure composed of individuals and organizations that convene, share roles, and apply the rules that numerous citizens can enjoy benefits. Such structures are referred to as public services because they are funded by the public budget to serve citizens collectively. In addition to conventional bureaucracies, the growing use of technology is changing the means of public management, and new public services are becoming available (Rocco, 2022). These new public services eventuate from a new trend centered on how to make the most of technology in understanding and managing policy problems. Technology is expected not only to produce and use better policy but also to implement more socially desired outcomes in tackling collective issues. In addition to technology itself, the methodological frameworks used to make the most of it in public management are opulent. On the other hand, there are at least two broader perspectives on public service that any methods or tools may not provide a public service necessarily.

Public service management is traditionally referred to as a concept that is expected to be understood universally without deep description of its scope. However, in the context of public service management by algorithm-based programming and technology, its meaning will be pinned down precisely since this new means of public management is too expansive to dab on and needs to be focused for "on-point" scientific examination. The overarching aim is to synthesize public service management. AI technology is referred to as algorithm-based programming, a mathematical statistical approach to coding the new form of governance. This AI technology has two distinctive characteristics: a new tool to produce output linked to public policy issues and a technology that may reproduce, reinforce, and proliferate bias and judgment errors. (Alon-Barkat and Busuioc2023)

2.2. Historical Development

Public policy management is a broad scope that includes essential functions like policymaking, implementation, monitoring, and evaluation. Recent shifts in management thinking, scientific advancements, and technique development have resulted in many public management reforms that influence how public policy is developed, evaluated, and carried out. The advent of electronic government, also known as e-government, and most recently, smart government, have had a great impact on the state of public management. The core aspect of

smart government is offering efficient, citizen-centric services by employing techniques from sectors like advanced analytics, educational technology, social media, and the Internet of Things. It is believed that by applying Artificial Intelligence (AI) and related technologies, governments will be able to offer more accessible, accurate, personalized, and demand-driven services, resulting in economic efficiency and the development of knowledge-based societies (Rocco, 2022).

Governments are expected to adopt AI to enhance the democracy, efficiency, equity, transparency, predictability, and accountability of public policy management. However, there is uncertainty about how AI can be applied in this domain. The only field where AI has been actively implemented for public policy management is the criminal justice system. Most of the studies that acknowledge the possibility of using AI in public policy management are conceptual in nature. Hence, further exploration into the methods of employing AI as tools of public policy management is warranted. This paper aims to delineate how AI and related techniques can be applied in public policy management, using the United Arab Emirates (UAE) as a model. The UAE is one of the few countries in the world where AI has been actively pursued in public policy management. To that purpose, public policy management is nominated as a domain where AI can be prevalent. (Dafri)(Alnaqbi and Yassin2021)

2.3. Current Trends in AI

Similar to how the United States is facing difficulties regarding policy decisions and implementation because of its violent divisions, the UAE now faces similar pressure to carefully carve out a monitoring role for AI that doesn't stymie beneficial advances. These include generative AI, which gives rise to chatbots that create content when prompted with simple cues. Future AI can be utilized to regulate and manage public agencies, extract meaning from data, and examine multi-dimensional communications. Now the challenge of establishing policy and regulatory frameworks for this next generation of global AI technology falls on all governments. Generative AI is already creating problems: poor quality checks have led to embarrassing errors, and cybersecurity risks have heightened. Fake news, deep fakes, sentiment overload and profiling remain concrete challenges in digitized governance. For good reason, there is skepticism surrounding these new products of technology. (Al Ali, 2025)

Governments rush to create external regulatory agencies to try to contain these new innovations by fixing some immediate problems, and by affordability, safety, transparency, honesty, accuracy, protection of personal data, bias-free integrity, accountability, and oversight. Along the same lines, various AI councils and agencies have been formed with greater or lesser success. This disjointed approach is futile and only serves to give the impression that something is being done. All the while, big tech companies get richer and increasingly powerful. The explanation for the immediate regulatory failure of the UAE AI Council is a similar ideology, characteristics, culture, and constitutional order among the nation's rulers. Ultimately, it should be a council that straddles both worlds and can provide a pacifying voice to tech firms while strictly enforcing regulations. But on the other hand, it should be a council that can instill a love for the new advancements among regulators in the hopes that each can provide more efficient policies, services, or regulatory measures than the other. (Radu, 2021)

3. Public Policy Management

Information technologies (IT) have reshaped every facet of society. IT has also transformed the connection between government and citizens and entered the realm of public sector policy management. Nations nowadays create favourable environments for the growth of information technology, implementing high-risk advanced algorithmic programs to manage public policies. Algorithmic decision-making (ADM) is a type of information technology that has the potential to reshape public sector decision-making processes (Rocco, 2022). It includes a set of software-enabled capabilities that publish, archive, preserve, and curate datasets, as well as build, train, and serve predictive or generative algorithms to realise forecasting or speech-based tasks. ADM refers to a hybrid approach that involves combinations of humans, machines, software, and data centrally coordinated through formal rules and procedures to enhance or substitute existing public decision-making processes. The adoptions of ADM have raised questions and concerns about bias and discrimination in both the public and private sectors. In response, many governments, legislators, and labour unions have taken measures to prevent discrimination and increase fairness in AI-enabled algorithmic processes.

These influences explain why governments are focusing on creating rules and regulations governing the use of AI. However, regulations alone do not prevent discrimination in AI-enabled decision-making systems. More practical measures need to be considered and implemented. Data-driven discrimination could surface during the

implementation of AI systems in public management. Those responsible for deploying budgets to improve AI-driven decision-making must adequately consider the risks and take action during implementation. Four families of key governance practices that are pivotal to curbing discrimination during the implementation of ADM in public management: (Taeihagh, 2021)(De et al.2021)

1. Establishing appropriate conditions for acceptance and legitimacy—acceptance by public workers; assuring no obsolescence of critical human roles; as well as increasing transparency and accountability. 2. Protecting procedural fairness and compliance on public interest policies—protecting the rights and interests of the weakest and most disadvantaged citizens, increasing subjective and objective accountability, as well as tracking procedures through a data catalogue. 3. Training necessary knowledge, skills, and competences—providing adequate training; hiring professionals with a range of knowledge and skills; and establishing adequate grooving or ironing mechanisms. 4. Defining the proper integration of the technology in work processes and tasks—adequate task-systems design; allocating human roles according to technology; and considering adaptation in work organisation and relations with other organisations.

3.1. Definition and Importance

AI refers to the ability to systematically compare differences, create solutions, and adapt to environmental changes. It is a subset of data science and machine learning (ML) focused on reducing errors in classification and decision-making through advanced calculations and powerful CPUs. In recent years, as computation has become cheaper and sensors ubiquitous, vast amounts of data have been accumulated, revealing hidden signals and improving digital representations of reality. This has led to a better understanding of AI tools and algorithms, enhancing public knowledge while countries compete for leadership in ML and hardware development. AI is now integrated into policy management, although coordinating various agents over time complicates public decision-making. Digital technologies are sought to establish robust AI-supported policy management that provides transparency and accountability, aiming to avoid governance crises arising from unregulated decision-making. While cautious toward 'intelligence' in democratic choices, it is perceived that tech-savvy politicians can leverage this progress for effective policy-making. AI can evaluate complex functions and adapt controls in real-time. However, legal and ethical constraints may lead to controversial governance implementations, as the accumulation of outside knowledge appears inevitable. (Rocco, 2022)(Uzun et al., 2022)

3.2. Key Components of Public Policy

The implementation of artificial intelligence systems in public sector management – at least in some aspects – seems to be as easy as turning a switch on or off. Given its unquestionable capabilities, AI is expected to deliver strong results for organizations immediately and at low cost using little resources. However, the situation is almost exactly reversed. There is a need to deliberately plan how AI systems are go on to the field: which fields of activity to apply it, which objectives, and which impact would be deemed acceptable (Rocco, 2022). A map of the desirable environment needs to be put in place so that the AI system would unambiguously be aware of what is good and what is bad. The most tricky part, however, is to define a screening process so that the put-practice map is continuously updated and the AI system be aware of any change in priorities (and consequently in moral policies). Old, unup-to-date, and unused maps would also need to be safely disposed of, as they may well become hazardous.

The purpose of political decisions and the means to implement them are facts of life for any policy area and for any polity. A policy question is politically preferable, both in a favourable and an unfavourable form (in terms of the expected overall outcome) only if there is subjective uncertainty over its objective chances of actually success. Sometimes, a question may be politically relevant while not yet having been incorporated into any applicable policies. Such a question has the same basic qualities but none of the latter. Finally, the question of whether AI systems comply with the full council's policies has become a pending issue in several jurisdictions. It is important, however, to perceive it as one regarding implementable policies. (De et al.2021)(Novelli et al., 2024)

For each of the above kinds of policy question, a governance system for full AI compliance must be devised. A goal of a policy question is a two-fold function of an expected version of it and a policy group this version belongs to. It is a deliberative and essentially procedural decision as to which goal to pursue, but the consideration of side-conditions (including ethical ones) and effectiveness, so that the uncertainty on the objective reflect the subjective one. And the eventual attempt to ensure adherence to AI systems' operational logic to the chosen policy – not the actual implementation of it – but a complicate model in AI systems. A

question is politically preferable mainly if it advances or at least preserves the privileged position of a polity. (Taeihagh, 2021)(Díaz-Rodríguez et al.2023)

3.3. Challenges in Public Policy Management

Public sector agencies are increasingly adopting innovative technologies, such as automated decision-making tools, to enhance their policy development and implementation processes. Algorithmic decision-making (ADM) tools are an important part of this innovation wave. Many governments are investing heavily in Disruptive Technologies in the public sector context. These are broadly understood as any innovative technological development that is radical rather than incremental or whose characteristics are technologically unclear (Rocco, 2022).Governments worldwide see significant potential for transformative impacts from Disruptive Technologies, and many have set up strategic initiatives to identify and automate early-stage investments in robust technologies. Public sector agencies also adopt innovative technologies to develop policies highlighting the need for particular attention and governance arrangements. Robustness indicates that an AI system can work safely under harsh conditions, which is relevant to determine the level of responsibility and accountability of AI manufacturers. (Kasinathan et al.2022)The public sector has seen various responses to adopted technology, ranging from full acceptance to refusal or postponement. Researchers highlight how deep learning can bolster state-level governance, enhance hybrid models that combine probabilistic and non-probabilistic approaches, and support research programs that keep the technology close to the real world, among other models. It is argued that ML in public sector adoption also raises legal and ethical concerns, requiring coherent rules and a framing strategy. Avoiding such risks without an a priori understanding of how to make likely consequences remain unknown raises issues about power access, privacy, discrimination, information governance, and other issues. In agency settings, the ethical choice of how to accompany even slight automatization in data analytics and decision-making matters for big governance meta-issues. (Shafik, 2024)

4. AI Applications in Public Policy

Embedding artificial intelligence (AI) in public policies is a multi-dimensional process. Understanding the public policy context is a vital step towards the successful adoption of AI technologies as it influences an AI solution's characteristics, such as the degree of difficulty in implementation, the requirements on stakeholders, and its potential benefits. However, existing studies have concentrated on developing general frameworks and knowledge regarding AI in public policies, with limited consideration for the specific contexts of individual policies, which plays a crucial role in determining the characteristics of the context of a specific public policy. A theoretical classification of AI applications in public policies reflecting their essential characteristics has been developed to help government decision-makers better identify and assess individual AI applications from diverse contexts. (Ulnicane et al.2021)A proper classification of AI applications in public policies requires defining fundamental dimensions that can adequately reflect characteristics distinguishing individual public policies (Rocco, 2022). Influenced by the policy instrument hierarchy developed by Lasswell and Clarke, the origin of the AI application context, the nature of the AI model, and the application approach have been identified as three fundamental dimensions. These dimensions are further divided into sub-dimensions, resulting in a three-dimensional classification framework for understanding AI applications in public policies. Furthermore, based on the proposed classification framework and the adopted systematic review methodology, a theoretical classification of 25 AI applications in public policies in 18 countries has been developed to reflect a diverse set of public policy contexts (Jr Ramizo, 2021).The classification exercise reveals that AI applications in public policies have become a global phenomenon, encompassing a diverse set of public policy contexts. Four common public policy areas have been identified where AI applications have been adopted: public health and safety, transportation, environmental protection, and economic development. In virtually all countries involved in the classification exercise, AI applications in public policy have been regarded as promising tools for addressing a wide range of challenges and capturing new opportunities. Most applications adopted a transparent AI model in comparatively advanced AI technology and theory, which was stricter requirements on the stakeholders and a greater degree of difficulty in implementation. The proposed theoretical classification framework of AI applications in public policies and the resulting cross-country classification not only contribute to the theoretical advancement of AI applications in public policies but also provide practical implications for decision-makers to understand emerging AI applications in their specific public policy context. (Zuiderwijk et al., 2021)

4.1. Data Analysis and Decision Making

Studying the ways in which Artificial Intelligence-based technologies influence strategic decision-making processes requires understanding how those systems collect data about their users and apply data analytics. Creating the technology to reach desired outcomes is only part of the challenge. Decisionmaking technologies create socio-technical systems that may impact established norms. The first step in a broad study of AI-based decision technologies is to more clearly understand how those technologies affect management processes and need current human data to respond to current parameters of the AI-generated options. AI applications in public management face challenges in dealing with aspects in decision-making which can change from day to day (Rocco, 2022).

4.2. Predictive Analytics for Policy Outcomes

Incorporating AI tools into policy analysis enables advanced analysis, such as predictive analytics, policy modeling, and text-based analysis of public perceptions. Predictive analytics can estimate the effects of policies by analyzing similarities between planned and previous policies. The desired outcome of a policy is a critical parameter in determining its effectiveness. Early evidence suggests substantial interest in using predictive analytics for policy analysis and outcome prediction (Salar Khan et al., 2023). While some countries have initiated efforts to adopt AI across government agencies, others primarily focus on general principles and ethics. Only a few have developed good practices, such as writing guidelines and checklists. Nevertheless, the first steps toward methodological standardization of predictive analytics in policy analysis are being taken, and the need to develop good practices is increasingly recognized. AI tools can enhance policy analysis at every stage of the policy cycle by enabling new forms of analysis and generating new insights from previously available data.AI-enabled predictive analytics is a set of AI technologies designed to estimate the outcome of a policy in progress or proposed on the basis of the expected outcome of similar policies in the past. This approach seeks to develop a causal model of policy outcomes that explains how the estimated vector of the policy variables affects a policy's socio-economic outcomes. The expected vector effect of a policy on its outcomes is a critical parameter in estimating the policy effects because it embodies crucial aspects of the knowledge about the outcome of a policy. A technical discussion deals with the inherent uncertainty that accompanies any prediction model, but some evidence suggests that the political desirability of a policy's outcomes can only be gleaned broadly and heuristically. Therefore, the value and availability of estimation of policy effects are developmentally important for developing AI technologies for policy analysis. (Selvarajan2021)

4.3. Automation of Administrative Processes

Algorithmic government refers to the use of technology to improve bureaucratic efficiency in processing applications and lessening citizen burdens. Governments sometimes approve applications automatically through AI based on set criteria. This shift creates challenges, such as how to monitor the new digitized policy landscape effectively. Automated systems could compel governments to adapt their practices to avoid inefficiency in utilizing technology. For instance, the UAE utilizes rapid data collection and real-time analysis to anticipate potential failures, alerting authorities for further investigation early in the process. Specific, complex codes and heuristic rules used in UAE models are undisclosed due to mutual agreement among experts. Although one province communicated its automated efforts, it ceased them as public scrutiny was unexpectedly high. Testing simulated human behaviors through bots showed that the complexity of public applications exacerbates monitoring difficulties and costs. Preventing spoofing in the public sector could entail costs exceeding initial expectations. Therefore, gradual approaches are advised, focusing on simple applications against spoofing initially. Various technologies can realize algorithmic governance, including robotic process automation, machine learning on unstructured data, and new modeling insights regarding processes and environments. The UAE faces increasing technological pressure, studying more complex automation applications as expired pilot projects resurface to address risk factors. Monitoring must align with process changes while maintaining rational expectations. (Herbert, 2019)(Rocco, 2022)(Al-Assaf et al.2024)

5. Case Study: United Arab Emirates

The rapid evolution and widespread adoption of technologies during the past decade have revolutionized most aspects of daily life, often resulting in the re-examination of existing entities. The global economy has undergone a radical transformation, shifting from virtually every non-digitized activity to a digital format, Web 2.0, and lately Web 3.0. Governments have begun to re-examine the way they govern to leverage the opportunities and benefits of this revolution. They have to ensure sustainable development amidst increasing fiscal pressures caused by erratic oil prices and the persistent boom-undercutting business cycles. This requires

the revitalization of government functions to make them mission-oriented and performance-driven rather than rule-bound and process-oriented. Similarly, public sector accountability and the franchise to govern have been questioned. Governments have realized that engaging their citizens in a collaborative manner using the wide range of available technologies will put them on the path to sustainable development (M. Al-Khouri, 2011). A lot of work remains to be done to implement a deeper and broader e-government intelligence. This intelligence can span the breadth of the functions of e-government, including law and policy refinement, e-government strategy development, e-governance capability building and cities of the future. More importantly, there is a need for institutional arrangements and rules of the game for coordinated implementation, development, regulation, and maintenance. Moreover, it should be noted that the international e-government society needs to give high priority to another emerging frontier of e-government – e-government ethics. While e-government is based on great technological rationality, prudence is also necessary. The integrity of databases needs to be ensured. It should also be noted that citizens might not welcome the emergence of e-government intelligence intuitively. Trust and legitimacy have to be earned through transparent and robust implementation. (Koohang et al.2023)(Fang et al., 2023)

5.1. Overview of AI Initiatives in the UAE

Over the past years, AI has emerged as one of the most transformative technologies worldwide. In contrast to previous technologies, the intervention of AI in this era is anticipated to change entire industries and put new iron curtains between the AI front-runners and laggards. The considerable strategic value of AI technology has prompted an aggressive race by almost every country that aspires to be recognized as a global power. As a part of a comprehensive effort to invest in and capitalize on the potential of AI, a growing number of countries have become actively engaged in AI policies in recent years. In the UAE, the repercussions of this race are especially felt. Since 2016, the UAE has focused on developing and implementing proactive AI strategies at the government level (Salar Khan et al., 2023). As part of its wide-ranging AI ambition, the UAE has launched a plethora of initiatives and developed an ecosystem for national and global AI applications.The UAE's tremendous efforts in AI policy and strategy, the deployment of these technologies by government agencies, and the pioneering national AI projects are exemplary and imaginative. Also, as a member of the Gulf Cooperation Council (GCC), the development and implementation of AI policies in the UAE are anticipated to be replicated in other GCC countries. As such, the UAE serves as both a national and regional AI model that caters to public policy management (Jr Ramizo, 2021). This chapter addresses how AI is managed to govern public interests in the UAE by first examining pertinent AI initiatives that aim to develop the UAE into a 21st-century national AI model and, subsequently, investigating vital UAE national AI projects in different areas to present ground-breaking innovations.In the wake of rapid technological advancements such as machine learning, robotics, and big data analytics, AI is a disruptive technology that transforms countries across industries. Many countries are striving for a leading role in the technology race. From the previous technology races around the world, it seemed that AI was fully aware of the importance of developing an AI policy early on, especially before a regime fell behind in the AI race. AI policies have emerged in countries, including the US, China, and the UK. Sooner or later, it could be anticipated that attempts to develop national AI policies would proliferate, especially in non-OECD countries. Inspired by the successful AI policies of the US, China, and Canada, the UAE embarked on a search for an AI model to develop its own AI policies in 2017. (Shwedeh et al.2024)Most Arab Gulf nations, including the UAE, are considered nation states and are trapped in a rentier economy due to their vast deposits of gas and oil. Since the 2000s, however, the holism of oil-dependent economies has been challenged by the 21st-century model of the internet economy, affected by new competition from technically advanced countries, and aggravated by declining energy prices. The upgrading of past energy-dependent economies to 21st-century technology-dependent economies is a key existential challenge. Given this, competing with advanced countries on a foothold seems impossible. Therefore, the public sectors from this region, including the UAE, are attempting to sidestep the upgrade. (East2024)(Yan2024)

5.2. Impact on Public Sector Efficiency

The increased use of artificial intelligence (AI) across global organizations has led to a rich body of literature addressing its implications, outcomes, and necessary managerial and policy responses. Predictions regarding AI's impact on society evoke varying reactions: enthusiasm, cautious optimism, and skepticism concerning potential risks to democracy, equality, and freedom. AI is seen as both a significant opportunity and a potential threat, promising enhanced efficiency and creativity but also raising concerns about control and oppression. This dichotomy creates confusion and contradictions for managers and policymakers navigating AI's practical

challenges amidst theoretical discourse. To enhance efficiency and ensure equity in the public sector's AI management and oversight, public servants must consider the unique socio-technical contexts in which these technologies are utilized. While these systems differ globally in their strengths and weaknesses, they share a common foundation—public capital and policy driving their development and regulation. This paper examines the UAE's case study as a policy model for responsible AI development, offering insights applicable to various sectors worldwide. Practitioners can learn from the UAE's commitment to efficiency and equity, as well as its AI adoption ecosystem's resilience and emphasis on knowledge-sharing among public servants. (Pencheva et al., 2018)(Jr Ramizo, 2021)

5.3. AI in Economic Diversification Strategies

Industries associated with AI technologies and their adoption can be specialized. These specializations can include conducting research and development on AI technologies, producing AI-specific test, measurement, and control instruments, manufacturing AI-specific semiconductors, training AI-specific neural networks, developing software architectures for AI systems, and designing sales and implementation of AI-enabled robotics and processing systems (Mishra et al., 2021). Collaborating with talented engineers can create knowledge spillovers, encouraging firms to invest in AI-related industries. This measure is consistent with the literature stressing the importance of human capital and skills as prerequisites to AI adoption. Additionally, its breadth captures complementary inputs and skills needed to support substantive implementation. Knowledge spillovers can also arise from firm performance similarities. Consequently, a proxy is constructed based on co-occurrences of firms across this universe of AI-related sectors.The initial focus is on developing a model to estimate and assess the significance of AI industries on a country's economic growth trajectory. Based on this foundation, the analysis examines the national prioritization of sustained efforts on specific AI industries that appear to exhibit relatively high potential for impact. Jobs, ideas, goods, and corporate activity data are coalesced into a single longitudinal firm-based dataset. The immense methodological challenges associated with interpreting macro-data on corporate activity collected through digital channels and sustaining a multi-layered and multi-vout approach to its analysis are discussed next. Efforts are then focused on arising tangible next steps for those who seek to better understand and realize the economic promise of AI and its numerous related capabilities and industries. (Johnson et al.2021)

6. Challenges and Limitations of AI in Public Policy

One of the primary challenges is the use of AI systems which, instead of improving public policy management, may make processing, filtering or cleansing data more complex than it is currently. Further, it has been explicitly stated that training AI systems requires a large amount of quality data, normally carried over at least one of the following procedures: (i) inputting a dataset, which will be used to train the AI algorithm and create a trained model, (ii) setting a list of controls or supervisors that will provide the training examples in the form of I/O behavior or alternatively, (iii) implementing a reward function. All the above three procedures may become an uphill battle instead of an automated, user-friendly service. Furthermore, the ethical concerns of AI systems include various issues such as accountability, fairness, bias, transparency, obscurity, undue commercialization, adaptability, robustness, controllability, and vulnerability (Rocco, 2022). Many of these will likely require prior challenge identification steps to ensure the required QoS is applied to the emerging safety-critical AI systems. These issues require a thorough consideration of the ethical aspects as well as judicial/industrial guidelines before the conception and implementation of the AI-based public policy.Deploying AI systems into public policy may create a 'public policy gap', i.e., a general lack of understanding of AI systems, their capabilities, and the skills and knowledge to ensure their proper functioning and core VAT. This issue arises because the development and implementation of AI systems are normally accomplished by AI actors with profound knowledge of computer science, mathematics and statistics. In turn, public policy management may fail to fully understand those systems and may end up passing laws and mandates that have unintended consequences. Public policy implementation, including prior checks as well as prior meetings, may unintentionally constrain or impact an AI system's core functionality. (Santoni de Sio & Mecacci, 2021)

6.1. Technical Limitations

The public has a strong expectation for public administrations to possess technical competence and awareness. However, a precise definition of AI and its categories is still evolving, along with recognition of its limitations. Consequently, AI is sometimes over-promised or feared. In public authorities, adoption is often based on speculative fears. This directly leads to very few pilot cases being tried and AI Reluctance, which impedes the development of assurance methods for societal issues. In using AI-based systems, it is important to differentiate

between several levels of mistakes that can occur. At Level I, the model may misinterpret incoming data or fail to execute as planned. Level II refers to the problem of DAF and refers to situations in which relevant rules are ignored (in terms of what data is used, how it is interpreted, etc.), and/or particular submodels autonomously make decisions outside of any acceptable area of values. Level III denotes the classical problems of accountability, discrimination, and others. Only pilot projects covering both Levels I and II can help society acquire the confidence for proper governance measures to cover these Levels (Rocco, 2022).Heightening interest in examining AI case studies as implementation continues in more and more organizations globally has resulted from a perception that widespread implementation of AI is imminent. This phenomenon has translated into the academic community's wake, directing research to look for touchstones indicating successful and responsible implementation of AI within organizations. Comparative case studies are proposed within organizations that applied AI to their own unique administrative processes in divergent ways across countries. The complexity embedded within this task means that clear indicators may take time to develop, build consensus around, or be limited in their transferability. Interpretative flexibility within the constructs of any indicator supply is ambiguous across cases. Such difficulties may not be inherent to the field of AI studies - a comparative study relating to an entirely different area of public administration research could yield similar findings. (Hasija & Esper, 2022)Nonetheless, the effect of state institutions and policy choices in shaping a given national model of public administration, which in turn affects outcomes in lower administrative processes, is likely narrower. In an extreme scenario, the role of national institutions and choices is constricted to ensuring that public administration rules are applied, in which case starkly divergent outcomes are unlikely. This suggests that exploring these areas as mediating organizations and choices in two significantly different national contexts would yield valuable insights into the interplay between broad institutions and concrete outcomes.

6.2. Resistance to Change

It is evident that resistance to change destinies of Technology-Enabled Smart Governance (TESG) efforts. Identifying and understanding the factors causing resistance to change in government agencies is critical for successful implementation. A framework outlining various determinants of and barriers to the adoption of Artificial Intelligence (AI)-based smart governance in public sector organizations is developed. This framework contributes to studying technology-related implementation in government agencies and TESG efforts involving AI. By utilizing the proposed framework, the factors causing resistance to change in public sector organizations in Pakistan regarding AI-based smart governance are identified (Salar Khan et al., 2023). The development of this framework informs inquiries regarding the resistance to change in undertaking AI-based smart governance in public sector organizations. Furthermore, identifying the factors and barriers related to the implementation of AI-based smart governance reveals insights into addressing such resistance and enhancing the likelihood of implementing AI-based smart governance in government organizations. Resistance to change is threefold in government organizations. First, the awareness of the potential of AI regarding the impact of its adoption must be enhanced. Second, cognizance of the role of government in the development and/or failure of national-level policies regarding AI-based smart governance must be established. Third, strong measures must be taken by governments to develop Trustworthy AI in line with the standards laid out by organizations. This requires establishing a committee of experts to ensure adherence to the guidelines, with reporting of lapses met with immediate punitive action. Finally, care must be taken during the training of Data Annotation and Modelling to ensure that there is no bias in AI.

6.3. Regulatory and Legal Barriers

The introduction of artificial intelligence into the decision-making process raises relevant legal questions (Rocco, 2022). In the UAE, public policy is primarily driven by the leaders of decision-makers. Nevertheless, the goal of initiating an artificial intelligence-based algorithmic decision-making system is to ensure that all issues are addressed on an equal footing, regardless of the original context or the interpretation of political leaders. Hence, the issue of governance could be subsumed under the broader idea of the regulation of legal frameworks that currently exist or need to be put in place. The use of algorithmic systems could be viewed as an entirely new class of technology; it could also be seen directly as an addition to furthermore existing technologies. The first way is more likely to trigger a socially diffuse issue of limited legitimacy, while the latter is likely to have immediate legal implications even in any uncertainty regarding the nature of some of these systems, such as machine learning based AI, or ML-based artificial intelligence. As AI systems expand their decision-making capabilities in human activity, it is necessary to rethink which responsibilities can be delegated and where the boundaries of liability and accountability can be drawn to ensure systems operate as intended

and do not infringe individual liberties. The impact of human behavior on trustworthy decision-making is basically down to various facets of identifying human responsibility over time. This raises disputes concerning what it means precisely for decision-making to have been human deliberated or they could relate to aspects concerning the reasonableness of decision-making on third-person perspective grounds. Certain responsibilities hinge on the intention or the oversight of the defendant. (Nishant et al.2024)

7. Future Directions

Despite the significant investments in and efforts to adopt AI technologies within the public sector, AI systems have produced poor results in some use cases due to a lack of emphasis on ethics and lawful compliance. As governments change the means by which citizens are served, AI regulations are often lagging behind. At the same time, existing laws and ethical frameworks may not cover AI, especially in view of rapid developments in technology. Yet regulations for responsible, trustworthy, and human-centric AI systems for the use of public services must be in place. To address this imbalance between technology adoption and regulatory developments, it is imperative for governments to promote inclusive and participatory regulatory engagements. (Stahl and Stahl2021)Drawing from stakeholders' perceptions about the needs for policy action implementation for AI in public policy deployment in selected public sector entities, the study identified six main opportunities for action. Specific to the context, the proposed actions concern engaging stakeholders in discussions about the need for regulation of AI in public policy, developing legislation which ensures compliance with laws and human-centric algorithms, employing regulatory frameworks to oversee the implementation of laws and ethical guidelines governing the use of AI technologies, establishing observatories to interact with technologies' actors, fostering discussions and education regarding the societal implications of AI in public policy, and developing awareness initiatives about the importance of inclusive and participatory regulation of AI. (Zuiderwijk et al., 2021)

Opportunities for ActionFor the implementation of these actions, there are several steps that should be taken. Firstly, public sector entities should appoint representatives on behalf of the public sector organization that are well acquainted with the entity's efforts in public policy AI implementation. These representatives may invite relevant stakeholders to discuss public policy AI regulation which concerns their interests. The representatives should ensure that discussions are held in confidence and should not disclose stakeholder inputs to third parties except to other stakeholders who share mutual interests. (Hjaltalin & Sigurdarson, 2024)Secondly, a working group including public sector entities' legal departments and integrity offices should be established. The working group may draft legislation on AI in public policy, discussing findings and feedback from stakeholders with relevant stakeholders. The working group may submit the draft legislation to a public sector entity's leadership to find agreement on next steps. In developing the legislation, the working group should provide justification for why existing laws, codes of ethics, and ethical frameworks may not sufficiently cover AI in public policy. Stakeholders' findings and feedback regarding the need for legislation, along with findings from AI regulation literature, could be used as supporting evidence. (Smuha et al., 2021)Thirdly, regulators within the government may contact public sector entities to discuss recent approval of draft legislation on AI in public policy. Understanding feedback from public sector entities on the legislation would have the potential to lead to enough buy-in regarding the legislation's underlying value. After this, during drafting of the legislation, to enhance the legislation's applicability, there is widespread agreement among stakeholders that it is essential for regulators to contact public sector entities to amend drafts to elaborate how ethical guidelines laws apply to the licensing of proprietary algorithms exhibiting harmful bias, transparency, and accountability. Next, to ensure compliance with the legislation's ethical guidelines, stakeholders have pointed out the need for more regulatory resources and expertise. Stakeholders emphasized recruiting data scientists to scan the public sector's proprietary algorithms to detect non-compliance with ethical guidelines. (De et al.2021)

7.1. Innovative AI Solutions

Policy meetings often conclude with grand declarations of projects and plans. But in action, hardly anything happens. In the UAE, the masses take part in its development models as they design their services. They showcase best practices and projects that are conducted and celebrated even by nations far and wide. Cities tease with international competitions as they vie to ushers in the most exciting technology visions. Everyone wants a piece of the development pie. For the quicker transformation towards the countries of the future, bodies prioritize themes that tackle contemporary issues with a consideration for underlying social behaviors.

Governments are not bereft of inventiveness. Some are seen to defy expectations and produce results where matrices of growth stagnate. With the recent tech boom, it seems artificial intelligence is the magic bullet (Salar Khan et al., 2023). The UAE has invested heavily in artificial intelligence. Federal initiatives and registration

for a soft law ensuring its development and interaction in promoting data openness are systemically laid down. Though often shrouded in ambiguity, AI policies operating under an expired domain enable the issuance of directives to lower level offices responsible for service interaction value chain components. End user systems traverse the generation of vast data volumes. This entails fresh thinking about the underlying managerial systems and best practices. The promotion of AI technologies internally demands the design and management of aid technologies, which add frictions to the processes targeting increased productivity with simple tools.AI is overtaking man across countless industries, producing fashion with extraordinary precision, evaluating and picking options with unfathomable bias, and making the finest and quickest ultimatums. AI-driven internships are the next best entry-level employment. With the ubiquity of intelligent recommendation systems and how user involvement and approval can invert their wisdom, awareness of the potential drawbacks is cloaked by convenience (Jr Ramizo, 2021). Even when reservations abound, an untroubled ubiquity of internet share is more favourable than anything tasteless. How basic can large language models get that good in response? It is easy to disagree with; having seen all manner of terrific advisors in use in countless ways, the expectation is pinned exactly on how immediately they can subside or become untrustworthy.Beyond answering inquiries, AI acts. It acts through its ability to generate content and carry through. Tasks are fed into systems to produce text, code, abstractions, annotations, alterations or substitutes. The advent of tools is complemented by similar sagacity found in mid- and enterprise-grade applications. Some applications feed a stream of sources whence text-actions are ingested and mined to outsource menial tasks entirely. Firms can no longer be picky about fixations or zealotism in determining tasks handed to machines. Fewer lend to lament the state of affairs for what systems undertaken merely resemble mechanized preferences amongst cobbled facts. Invested parties experiencing an equilibrium of rewards distract by designating differencing types of facts or methods. (Liang et al.2024)

7.2. Collaboration between Government and Tech Firms

As a part of AI empowerment strategic intention, it is necessary to address the gaps between government services management and AI technology capabilities. A collaborative relationship between public administrations and species-dedicated tech firms is needed for shaping the optimal AI adoption paradigm. Public agencies for AI adoption in highly contextualized sectors create exigent hurdles to implementation and adoption due to entrenched systems and misaligned incentive structures (Salar Khan et al., 2023). AI-firm partnerships with hybrid structure would suit fuzzy processes in implied AI-assisted public services development and technology choices.Co-designing Algorithms in Feedback Loops Enabled Administrative Transparency An empirical case study is conducted to analyse for the techno-commercial cooperative aspects of the Finnish AI-firm-public agency partnership upon collaboration in a public service domain with high context specificity. The partnerships initially aimed at commercial knowledge cocreation to enhance AI technology capabilities concerning administrative data. During ten months of an AI-based service co-design project based on historical housing decision data analysis, adoption aspects considerably entered the scoping agenda towards enabling co-design of AI algorithms and improve public administration interaction. In contrast, the firm's focus on knowledge commercialization and the public agency's focus on validating AI outputs were challenged. With diverging agenda, the partners established a project feedback loop where amicable but delicate controversies shifted the cores of power near to the boundary spanning individuals in the public agency. Eventually, the firm received an first contact through which data-based warning variables to monitor unintentional social practices of housing decisions were to be developed. Empirically, each follow-up project stage revealed controversy-expanding data and interaction asymmetries which hindered AI confidence in auditing furnished results in a feedback loop. Whereas systemic social perception towards administrative transparency, indirect discrimination and public service one's resource and budget threat nevertheless had hardly survived at first. (Kawakami et al.2024)(Loeffler & Loeffler, 2021)Tuning Algorithmic Controversies as Mediation for Proactive Public Administration Interaction AI-firm-public agency partnerships consist of varied agendas, social perceptions and cultural frames which tend to diverge, fuel and develop for unplanned mean even in advanced domains of public services AI deployment. In contrast to robust cooperation on narrow technologically focused datasets, AI-firm-based knowledge case studies in contextual domains with significant social impact encapsulate uncertainty management of macro-processes across numerous soft domains. Nevertheless, along with Caliendo's perennial barrier of technical asymmetries the cooperation also comprises social and interaction asymmetries (Engin & Treleaven, 2018). Partner agencies tend to be dismayed on model transparency and on casting inquiry beyond AI-technology concerns.

7.3. Global Perspectives on AI in Policy

As awareness of the technical capabilities of AI solutions grows, many governments are exploring the potential of AI in the public service domain. Generally, public sector AI projects are expected to automate more and more decisions that are made by humans today. In the public sector, however, the adoption of AI also raises several issues. The growing adoption of AI requires consideration of aspects related to safety and security, ethics, fairness, societal impact, and legal boundaries. Although an increasing number of research papers, policy guidelines, opinions, and frameworks deal with these topics, the knowledge needs of practitioners regarding the concrete management of AI projects are less well understood. Public organizations are looking for more guidance on how to address the potential pitfalls of their AI initiatives (Rocco, 2022). With this exploratory study, the aim is to identify AI project management-related themes that need to be dealt with to realize the societal gains of AIThree types of qualitative data were used in this study: an analysis of a review of literature on the adoption, governance, and management of AI in the public sector; contents of a Dutch government document regarding principles for public sector AI; and fast-analysis and coding of interviews with senior government officials in several countries involved in government AI projects (Jr Ramizo, 2021). The data were collected in such a way that the findings from each data type could be cross-validated by the others, thereby enhancing the credibility of the findings. Following qualitative data analysis, relations were established between data-mined themes.Up to now, a plethora of promising AI applications has been implemented in the public sector. However, the roll-out of public sector AI is still in its infancy. Many public sector AI initiatives, fortunately, put governance mechanisms in place, still much needs to be done to ensure that AI supports the public interest, while at the same time dealing with life-determining consequences for government organizations, employees, and citizens. Findings show that managers of emerging public sector AI projects need to heed different themes than the projects in other sectors. However, the public sector also has to keep pace with the rapidly evolving field of AI technologies. The swift advancement of an AI infrastructure and data processing technologies can outstrip national and international laws and regulations at a fundamental level. (Van Noordt & Misuraca, 2022)(Hjaltalin & Sigurdarson, 2024)

8. Best Practices for Implementing AI in Public Policy

In order to successfully democratize its AI capabilities and applications, nations must take actions, typically in the form of policies/general regulations. In this process, there are many pitfalls enabled by the existing social-political-technology system of the nations that likely delay or even fail the popularization of AI technologies and systems. Thus, to obtain a robust system of AI resources, policy decision-makers must be aware of prospective pitfalls and bear them in mind when making corresponding rectifying policies. This section is particularly interested in adopting the well established policy-taking models for a better-known picture of the interactions among multi-sector stakeholders involved in AI policy taking. Then to demonstrate the potential of that understanding composed through the existing policy-taking models, a prototype of AI democratization is discussed to serve as a demonstrative framework. (Filgueiras, 2022)To help maximize the output quality of the AI democratization process, this report thoroughly identifies the tasks to be done. The boundary of a thorough governance of national AI democratization is specified. Taking a model, the corresponding teaching target group of the AI democratization process is identified, and a staggered education plan is devised for that target group. Potential pitfalls are also discussed, focusing on pitfalls likely enabled by the existing national AI research-application-democratization system. There is a hope that the points raised in this report can help strengthen the profiling of the event, clarify the expected outcomes, and broaden perspectives for the polices accessing the national AI resource democratization. (Duberry, 2022)There are also many well developed models focusing on the various roles possibly and analogically taking in the policy taking process. The formal modeling based enlightening these fundaments for managing the inter-sector interactions of AI democratization is not likely to happen successfully. However, the conceptual models based on multi-perspective exploration and abstraction of the existing knowledge are relatively promising. Most likely, there will be emergent representatives for the multi-sector stakeholder as the perception of any domain deepens, which will facilitate the communication between pockets. For AI democratization, it does not seem amiss to adopt those models for a better-known picture of the interactions among multi-sector stakeholders involved in AI democratization. For illustrating purpose, this task is composed and elaborated in this section, without many possible specifications and complications. To avoid further complication or abstraction, prospective successful routines of niche systems categories are particularly picked out and discussed. (Dwivedi et al.2023)

8.1. Stakeholder Engagement

Laying down a structured and appropriate stakeholder engagement framework that delineates which groups and individuals are involved in decisions surrounding AI policy, how, and why is important for the UAE to achieve its AI vision (Jr Ramizo, 2021). The UAE must acknowledge the interests of the various stakeholders involved in implementation decisions and consult with them, ensuring their representatives understand and are considered in policy-making; for example, including teachers' representatives when determining ways to adopt AI technologies. The engagement framework will determine how many stakeholder groups will be consulted, at which levels of decision-making, and with what legal mandates, each relevant in its own rights. Combinations of bottom-up and top-down approaches will likely be required in a well-coordinated public engagement effort. An engagement framework that recognizes the interests of players both within and outside the existing educational system will enhance decision-making processes significantly. (Radu, 2021)The unprecedented rise in mainstream popularity and prominence of AI, its associated risks, and need for policy response have led forward-thinking governments across the globe, including the UAE, to ramp-up efforts to promote AI development and adoption across economic sectors and public policy areas. Building on successes in some of its sectors, such efforts will need to promote inclusive and equitable AI adoption across diverse stakeholder groups by adhering to clear principles that safeguard the public interest against inherent risks. (Hendawy et al.2025)The UAE has taken significant steps towards developing an overall model that is relatively effective in promoting inclusive and equitable AI development and adoption, which could provide useful lessons. Given the country's small but rapidly growing AI market, there remains ample room for improving existing public policy management models. It would be crucial for the UAE to carefully consider how AI can help ameliorate current public policy management and research developmental challenges before embarking on AI adoption adventures. Adopting a more participatory and iterative approach in designing and utilizing AI solutions would be equally important. (El et al.2024)

8.2. Continuous Learning and Adaptation

Citizendevelopment is emerging as a new class of developers and entrepreneurs equipped with tools to create applications and solutions previously beyond their reach. While there are skilled individuals within organizations, many lack technical proficiency. National policies now empower local human capital to join citizen developers programs, enabling agreements between public and private sectors. These initiatives will emulate the governance seen in personal data privacy regulations. The UAE is leveraging diverse cloud computing solutions and analytical tools for this cause. Public and private entities have undergone transformations in their service delivery processes. Since June 2020, intense training programs have been conducted for Emirate citizens to harness modern technologies. These sessions led to various business transformation ideas and initiatives, including low-code development platforms and automation-driven projects. Continuous training efforts are being made to maximize technology benefits. Private cloud vendors have established regional offices that are automated with machine learning support. Multi-lingual chatbots facilitate communication between vendors and customers, enabling citizen developers to create basic Q&A bots. Additional tools are being developed for dashboards that provide business intelligence and insights on telecommunication and cloud usage across different services and processes. (Ni et al.2023)(Ren et al.2023)

8.3. Evaluation and Feedback Mechanisms

In a competitive world driven by innovation, the United Arab Emirates (UAE) has laid goals, plans, and strategies to advance and build capabilities that create a coherent tolerance toward all groups and trends, establish and diversify knowledge-based economics, empower and create talented generations to lead the nation, and build a safer, more virtuous, participative, innovative, and supportive society by 2071 (Salar Khan et al., 2023). Based on a shared vision of the wise leadership, the UAE Governments are working to achieve and ascend the goals of the seventy-year plan, which is impossible without developing the public management sector that controls all the governing works in the local communities.AI technology is one of the most potential technologies in the world of the Fourth Industrial Revolution, and it can be seen as innovations in public management. The goals of this endeavor are to create happiness in people's lives and for governments to become proactive and anticipatable. In the UAE, it was scientifically forecast that the journey toward developing a thriving UAE and creating the possibility for the happiness of its communities will be fulfilled without developing the capacities, infrastructure, and talented personnel to govern, run, and maintain the new technologies in a data-driven environment. Failure to keep pace with the rapid changes and development in AI sciences would cause a deterioration in the foresights and expectations capabilities and the provision of advanced services to the community. Thus, the seven major UAE local governments and the councils of their

top leaders launched an ambitious plan to design, develop, and shape an AI-based approach, for the first time in the region and maybe in the world, to govern the public management sector and enhance the capabilities from policy formulation, conduct, transfers, and evaluation. (Dahabreh, 2023)

9. Conclusion Artificial intelligence (AI) is increasingly being recognized as a foundational technology that could affect behavior, choice, and thought at unprecedented scales and levels of abstraction. Many governments are eager either to catch up with the fast-expanding private sector or to apply their efforts in advancing ethical AI for the public good. AI's disruptive nature calls for resilience, rationality, and rules by design to avert suicidal dependence, scarcity rivalry, and unnatural inequality. These concerns pertain especially to the use of AI by governments in public policy management and the delivery of public services.The artificial intelligence revolution is still an unfolding phenomenon. Whether it eventually poses threats to public welfare is highly uncertain. AI may radically embed a norm of objective rationality that neutralizes collective ignorance-based pitfalls of state action and pursuit of regulated narrow interests. AI is indeed designed to augment the collective intelligence of the state. As several countries have demonstrated, AI-enabled public policy management equals a state able to pursue more desirable collective objectives than before and deliver better public services accordingly.At the same time, AI is dangerous technology. If allowed to pursue its own or someone else's more narrow interests, AI will distort states' choices and thought processes to pursue more unwanted behaviors and decisions that elude human comprehension, accountability, and governance. Unchecked AI is as unnerving a prospect as nuclear weapons, bioengineering, and gene editing technology. Only governments can avert the risks of the AI revolution. However, with the present systemic qualities of the state, it is unclear whether, and how governments could or should put AI to use for the public benefit, and how to avoid detrimental applications. This analysis of AI and human-oriented theories of the state applies the two theories to the case of artificial intelligence to articulate the research questions of public policy and governance. Then it examines the strategy of the United Arab Emirates (UAE) and an AI-enabled state to identify causal mechanisms that are pertinent to the research questions. AI broadly refers to stateability-enabling technology designed to augment a state's collective intelligence on issues of social complexity and policy complexity, As an emergent effect of embedded AI within the collective agents of the state, an AI-enabled state is an emergent form of organization comprising the state and its contingent AI components that cooperatively operate to augment the state's intelligence.

References:

Al Ali, F. A. (2025). The Use of Artificial Intelligence in Government Communication in the UAE.

Al-Assaf, K., Alzahmi, W., Alshaikh, R., Bahroun, Z., & Ahmed, V. (2024). The relative importance of key factors for integrating Enterprise Resource Planning (ERP) systems and performance management practices in the UAE Healthcare Sector. Big Data and Cognitive Computing, 8(9), 122.

Alnaqbi, A. M. A., & Yassin, A. M. (2021). Current status, challenges and strategies of artificial intelligence and e-learning the UAE military education system. International journal of sustainable construction engineering and technology, 12(3), 352-361.

Alon-Barkat, S., & Busuioc, M. (2023). Human–AI interactions in public sector decision making:"automation bias" and "selective adherence" to algorithmic advice. Journal of Public Administration Research and Theory, 33(1), 153-169.

Andrews, P., de Sousa, T., Haefele, B., Beard, M., Wigan, M., Palia, A., Reid, K., Narayan, S., Dumitru, M., Morrison, A., Mason, G., & Jacquet, A. (2022). A Trust Framework for Government Use of Artificial Intelligence and Automated Decision Making.

Bohdal, O., Hospedales, T., H. S. Torr, P., & Barez, F. (2023). Fairness in AI and Its Long-Term Implications on Society.

C. Müller, V. (2020). Ethics of Artificial Intelligence and Robotics.

Dafri, W. (). Countries' Strategies in Implementing Artificial Intelligence in Government Institutions: A Case Study of the United Arab Emirates. Available at SSRN 4575622.

Dahabreh, F. M. (2023). The continued usage of artificial intelligence in the United Arab Emirates public sector organisations: An extended information system success model.

De Almeida, P. G. R., dos Santos, C. D., & Farias, J. S. (2021). Artificial intelligence regulation: a framework for governance. Ethics and Information Technology, 23(3), 505-525.

Díaz-Rodríguez, N., Del Ser, J., Coeckelbergh, M., de Prado, M. L., Herrera-Viedma, E., & Herrera, F. (2023). Connecting the dots in trustworthy Artificial Intelligence: From AI principles, ethics, and key requirements to responsible AI systems and regulation. Information Fusion, 99, 101896.

Duberry, J. (2022). Artificial intelligence and democracy: risks and promises of AI-mediated citizen–government relations. Artificial Intelligence and Democracy.

Dwivedi, Y. K., Kshetri, N., Hughes, L., Rana, N. P., Baabdullah, A. M., Kar, A. K., ... & Yan, M. (2023). Exploring the darkverse: A multi-perspective analysis of the negative societal impacts of the metaverse. Information systems frontiers, 25(5), 2071-2114.

East, S. M. (2024). The" Resource Trap" and Economic and Political Challenges in the Post-Arab. Conflicts and Challenges in the Middle East: Religious, Political and Economic Perspectives, 79.

El Naggar, A., Gaad, E., & Inocencio, S. A. M. (2024). Enhancing inclusive education in the UAE: Integrating AI for diverse learning needs. Research in Developmental Disabilities, 147, 104685.

Engin, Z. & Treleaven, P. (2018). Algorithmic Government: Automating Public Services and Supporting Civil Servants in using Data Science Technologies.

Fang, L., Lerner, J., Wu, C., & Zhang, Q. (2023). Anticorruption, government subsidies, and innovation: Evidence from China. Management Science.

Ferreira, C. (2023). A short review of the main concerns in A.I. development and application within the public sector supported by NLP and TM.

Filgueiras, F. (2022). The politics of AI: Democracy and authoritarianism in developing countries. Journal of information technology & politics.

Hasija, A. & Esper, T. L. (2022). In artificial intelligence (AI) we trust: A qualitative investigation of AI technology acceptance. Journal of Business Logistics.

Head, B. W. (2022). Wicked problems in public policy: Understanding and responding to complex challenges.

Hendawy, M., Wieland, J., & Koc, F. (2025, March). Digital passivisation: The framing of citizens and their participation in the United Arab Emirates' national AI strategy. In Uncertain Journeys into Digital Futures (pp. 35-56). Nomos Verlagsgesellschaft mbH & Co. KG.

Herbert, S. (2019). Automation of Government Processes.

Hill, M. & Hupe, P. (2021). Implementing public policy: An introduction to the study of operational governance.

Hjaltalin, I. T. & Sigurdarson, H. T. (2024). The strategic use of AI in the public sector: A public values analysis of national AI strategies. Government Information Quarterly.

Hong, S. (2024). AI and bias. Handbook on Public Policy and Artificial Intelligence.

Howlett, M. (2023). Designing public policies: Principles and instruments.

Johnson, M., Jain, R., Brennan-Tonetta, P., Swartz, E., Silver, D., Paolini, J., ... & Hill, C. (2021). Impact of big data and artificial intelligence on industry: developing a workforce roadmap for a data driven economy. Global Journal of Flexible Systems Management, 22(3), 197-217.

Jr Ramizo, G. (2021). Practical Lessons for Government AI Projects.

Kasinathan, P., Pugazhendhi, R., Elavarasan, R. M., Ramachandaramurthy, V. K., Ramanathan, V., Subramanian, S., ... & Alsharif, M. H. (2022). Realization of sustainable development goals with disruptive technologies by integrating industry 5.0, society 5.0, smart cities and villages. Sustainability, 14(22), 15258.

Kawakami, A., Coston, A., Zhu, H., Heidari, H., & Holstein, K. (2024, May). The situate AI Guidebook: Co-designing a toolkit to support multi-stakeholder, early-stage deliberations around public sector AI proposals. In Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems (pp. 1-22).

Kluge Corrêa, N., Galvão, C., William Santos, J., Del Pino, C., Pontes Pinto, E., Barbosa, C., Massmann, D., Mambrini, R., Galvão, L., Terem, E., & de Oliveira, N. (2022). Worldwide AI Ethics: a review of 200 guidelines and recommendations for AI governance.

Knowles, B., Fledderjohann, J., Richards, J. T., & Varshney, K. R. (2023, June). Trustworthy ai and the logics of intersectional resistance. In Proceedings of the 2023 ACM Conference on Fairness, Accountability, and Transparency (pp. 172-182).

Koohang, A., Nord, J., Ooi, K., Tan, G., Al-Emran, M., Aw, E., ... & Wong, L. (2023). Shaping the metaverse into reality: multidisciplinary perspectives on opportunities, challenges, and future research. Journal of Computer Information Systems, 63(3), 735-765.

Liang, Y., Wu, C., Song, T., Wu, W., Xia, Y., Liu, Y., ... & Duan, N. (2024). Taskmatrix. ai: Completing tasks by connecting foundation models with millions of apis. Intelligent Computing, 3, 0063.

Loeffler, E. & Loeffler, E. (2021). The Four Co's: Co-commissioning, Co-design, Co-delivery and Co-assessment of public services and outcomes through traditional and digital mechanisms. Co-production of public services and outcomes.

M. Al-Khouri, A. (2011). An Innovative Approach for E-Government Transformation.

Mishra, S., Koopman, R., De-Prato, G., Rao, A., Osorio-Rodarte, I., Kim, J., Spatafora, N., Strier, K., & Zaccaria, A. (2021). AI Specialization for Pathways of Economic Diversification.

Muhamat, A. A., Zulkifli, A. F., Ibrahim, M. A., Sulaiman, S., Subramaniam, G., Mohamad, S., & Suzuki, Y. (2022). Realising the corporate social performance (CSP) of takaful (islamic insurance) operators through drone-assisted disaster victim identification (DVI). Sustainability, 14(9), 5440.

Ni, L., Ahmad, S. F., Alshammari, T. O., Liang, H., Alsanie, G., Irshad, M., ... & Ayassrah, A. Y. B. A. (2023). The role of environmental regulation and green human capital towards sustainable development: The mediating role of green innovation and industry upgradation. Journal of Cleaner Production, 421, 138497.

Nishant, R., Schneckenberg, D., & Ravishankar, M. N. (2024). The formal rationality of artificial intelligence-based algorithms and the problem of bias. Journal of Information Technology, 39(1), 19-40.

Novelli, C., Taddeo, M., & Floridi, L. (2024). Accountability in artificial intelligence: what it is and how it works. Ai & Society.

Pencheva, I., Esteve, M., & Mikhaylov, S. J. (2018). Big Data and AI – A transformational shift for government: So, what next for research?.

Radu, R. (2021). Steering the governance of artificial intelligence: national strategies in perspective. Policy and society.

Ren, S., Cooke, F. L., Stahl, G. K., Fan, D., & Timming, A. R. (2023). Advancing the sustainability agenda through strategic human resource management: Insights and suggestions for future research. Human Resource Management, 62(3), 251-265.

Rocco, S. (2022). Implementing and managing Algorithmic Decision-Making in the public sector.

Salar Khan, M., Shoaib, A., & Arledge, E. (2023). How to Promote AI in the US Federal Government: Insights from Policy Process Frameworks.

Santoni de Sio, F. & Mecacci, G. (2021). Four responsibility gaps with artificial intelligence: Why they matter and how to address them. Philosophy & technology.

Selvarajan, G. (2021). Leveraging AI-Enhanced Analytics for Industry-Specific Optimization: A Strategic Approach to Transforming Data-Driven Decision-Making. International Journal of Enhanced Research In Science Technology & Engineering, 10, 78-84.

Shafik, W. (2024). Ethical Use of Machine Learning Techniques in Smart Cities. Ethical Artificial Intelligence in Power Electronics.

Shwedeh, F., Salloum, S. A., Aburayya, A., Fatin, B., Elbadawi, M. A., Al Ghurabli, Z., & Al Dabbagh, T. (2024). AI adoption and educational sustainability in higher education in the UAE. In Artificial intelligence in education: The power and dangers of ChatGPT in the classroom (pp. 201-229). Cham: Springer Nature Switzerland.

Smuha, N. A., Ahmed-Rengers, E., Harkens, A., Li, W., MacLaren, J., Piselli, R., & Yeung, K. (2021). How the EU can achieve legally trustworthy AI: a response to the European Commission's proposal for an Artificial Intelligence Act.

Stahl, B. C., & Stahl, B. C. (2021). Ethical issues of AI. Artificial Intelligence for a better future: An ecosystem perspective on the ethics of AI and emerging digital technologies, 35-53.

Taeihagh, A. (2021). Governance of artificial intelligence. Policy and society.

Ulnicane, I., Knight, W., Leach, T., Stahl, B. C., & Wanjiku, W. G. (2021). Framing governance for a contested emerging technology: insights from AI policy. Policy and Society, 40(2), 158-177.

Uzun, M. M., Yıldız, M., & Önder, M. (2022). Big Questions of AI in Public Administration and Policy. Siyasal: Journal of Political Sciences.

Van Noordt, C. & Misuraca, G. (2022). Artificial intelligence for the public sector: results of landscaping the use of AI in government across the European Union. Government information quarterly.

Yan, H. D. (2024). The "Resource Trap" and Economic and Political Challenges in the Post-Arab Spring Middle East. In Conflicts and Challenges in the Middle East: Religious, Political and Economic Perspectives (pp. 79-100). Cham: Springer Nature Switzerland.

Zuiderwijk, A., Chen, Y. C., & Salem, F. (2021). Implications of the use of artificial intelligence in public governance: A systematic literature review and a research agenda. Government information quarterly.