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ARTIFICIAL INTELLIGENCE AND THE TRANSFORMATION OF THE SOCIAL CONTRACT IN RENTIER ECONOMIES: EVIDENCE FROM SAUDI ARABIA'S VISION 2030

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ABSTRACT

Oil-dependent economies have historically maintained political stability through a rentier social contract based on hydrocarbon revenues, welfare provision, and public-sector employment. However, fiscal diversification pressures and rapid digital transformation are increasingly reshaping this traditional equilibrium. This study examines how artificial intelligence (AI) influences the evolution of the social contract in Saudi Arabia within the context of Vision 2030. Drawing on rentier state theory, legitimacy theory, and AI governance scholarship (Beblawi & Luciani, 1987; Schmidt, 2013), the paper develops the concept of an AI-mediated rentier transition, conceptualizing AI as a dual-use state capability that can simultaneously enhance governance performance and generate new legitimacy challenges. Using qualitative process tracing, documentary analysis, and a qualitative AI Governance Maturity Index (AGMI), the study evaluates the evolution of Saudi Arabia's AI governance architecture between 2016 and 2025. The findings identify three mechanisms through which AI reshapes state–society relations: administrative intelligence, labor-market recomposition, and data governance. While AI strengthens state capacity through improved service delivery and policy targeting, its legitimacy effects depend on transparency, accountability, privacy safeguards, and public trust. The study concludes that AI is contributing to a gradual transition toward a more performance-based and digitally mediated social contract, with implications for other resource-dependent economies

undergoing simultaneous digital and economic transformation.

KEYWORDS: Artificial Intelligence; Rentier State; Social Contract; Legitimacy; Vision 2030; Saudi Arabia; Data Governance; Privacy; Labor Market Transformation; Digital Government; Surveillance; Policy Foresight; Sociotechnical Transitions.

1. INTRODUCTION

Oil-dependent economies are experiencing a period of profound transformation driven by economic diversification imperatives, fiscal pressures, and rapid technological change. As uncertainty surrounding long-term hydrocarbon revenues increases and digital technologies reshape economic and social structures, traditional state–society arrangements based on resource rents, welfare provision, and public-sector employment are being redefined. In this context, diversification is no longer solely an economic objective; it has become a central component of broader institutional and political transformation (Hertog, 2020; Hvidt, 2013; Luciani, 2019).

Among the forces driving this transition, artificial intelligence (AI) has emerged as a particularly influential governance technology. Beyond its contribution to productivity and economic modernization, AI is increasingly embedded in public administration through data-driven decision making, predictive analytics, and digital service delivery. These capabilities offer opportunities to enhance state capacity, improve policy implementation, and strengthen administrative effectiveness. At the same time, they raise important questions concerning transparency, accountability, privacy, and public trust (Cath, 2018; Floridi et al., 2018; Veale & Borgesius, 2021).

The implications of these developments are especially significant in rentier economies. Historically, political legitimacy in such systems has relied less on taxation-based accountability and more on the state's ability to redistribute resource wealth and provide economic security. As governments pursue digital transformation alongside economic diversification, emerging technologies are becoming increasingly intertwined with the mechanisms through which legitimacy is generated and maintained. Consequently, AI has the potential to reshape not only governance practices but also the evolving relationship between the state and society (Beblawi & Luciani, 1987; Ross, 2012; Schmidt, 2013).

Saudi Arabia provides a particularly compelling context for examining these dynamics. Under Vision 2030, the Kingdom has undertaken one of the most ambitious economic transformation programs among resource-dependent economies while simultaneously investing heavily in artificial intelligence, digital government, and data governance. Reforms led by the Saudi Data and Artificial Intelligence Authority (SDAIA), together with broader institutional modernization efforts, have created a unique setting in which economic restructuring and AI-enabled governance are advancing simultaneously (IMF, 2023; Memish et al., 2021; Nurunnabi, 2017).

Despite growing research on AI governance and a substantial literature on rentier-state transformation, limited attention has been devoted to the intersection between these two fields. Existing studies tend to examine AI primarily as a technological or regulatory phenomenon, while analyses of rentier-state evolution rarely consider the implications of algorithmic governance, data-driven administration, and digital state capacity. Consequently, relatively little is known about how AI may influence the evolution of the social contract during periods of economic and institutional transition.

This study addresses this gap by developing a framework of AI-mediated rentier transition that integrates insights from rentier state theory, legitimacy theory, and AI governance scholarship. The framework conceptualizes AI as a dual-use state capability that can simultaneously strengthen output legitimacy through improved governance performance while generating new challenges associated with surveillance, privacy, and algorithmic decision making.

Against this backdrop, the study examines how AI-enabled state transformation influences the evolution of the social contract in Saudi Arabia. It explores the interaction between artificial intelligence, governance institutions, labor-market restructuring, and legitimacy dynamics within the broader context of Vision 2030. The central research question guiding the analysis is: How does AI-enabled state transformation reshape the social contract between citizens and the state in an oil-dependent economy undergoing economic diversification?

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1. Theoretical Foundations: AI, Legitimacy, And the Evolving Rentier Social Contract

The relationship between states and citizens in oil-dependent economies has traditionally been shaped by a rentier social contract in which political legitimacy derives largely from the state's capacity to redistribute hydrocarbon revenues through public employment, subsidies, and social welfare programs. Classical rentier theory argues that governments benefiting from substantial resource rents face weaker pressures for taxation-based accountability because state revenues originate primarily from external sources rather than domestic taxpayers

(Beblawi & Luciani, 1987; Mahdavy, 1970). As a result, political stability has historically depended less on representative institutions and more on the state's ability to sustain economic benefits and social protection.

Recent scholarship, however, increasingly portrays rentier systems as adaptive rather than static arrangements. Fiscal pressures, demographic change, and recurring volatility in global energy markets have challenged traditional redistribution-based models across the Gulf region (Hertog, 2020; Hvidt, 2013; Luciani, 2019). The introduction of value-added taxes, subsidy reforms, and broader diversification strategies following the 2014 oil-price shock reflects a gradual shift toward economic models that place greater emphasis on productivity, private-sector development, and non-oil revenue generation. In this context, the social contract is no longer anchored exclusively in redistribution; it is increasingly shaped by the state's capacity to deliver economic opportunities, efficient public services, and sustainable development outcomes.

This transition raises a broader question concerning the sources of political legitimacy in digitally transforming states. Governance scholarship typically distinguishes between output legitimacy, which derives from effective policy outcomes; procedural legitimacy, which reflects fairness and transparency in decision-making; and rights-based legitimacy, which concerns the protection of individual freedoms and safeguards against arbitrary authority (Schmidt, 2013; Suchman, 1995). Digital transformation has direct implications for all three dimensions. Advanced technologies can improve administrative performance and service delivery, thereby strengthening output legitimacy. At the same time, the growing use of automated decision-making systems raises concerns regarding transparency, accountability, and the protection of citizen rights.

Artificial intelligence occupies a particularly important position within this transformation. Beyond its economic significance, AI increasingly functions as a governance capability that enables states to process information, target policies, automate administrative functions, and coordinate public services at unprecedented scale. Consequently, AI has become an important component of state capacity itself. Yet the same technologies that enhance governmental effectiveness may also create new sources of political risk if citizens perceive algorithmic systems as opaque, intrusive, or unaccountable (Cath, 2018; Floridi et al., 2018; Veale & Borgesius, 2021).

For this reason, AI governance should be understood not merely as a regulatory framework but as part of the institutional infrastructure of legitimacy in digital states. International principles advanced by organizations such as the OECD, UNESCO, and NIST emphasize transparency, accountability, human oversight, and fairness as essential conditions for trustworthy AI. These principles have increasingly informed national governance frameworks, including Saudi Arabia's emerging AI ethics architecture. However, while such frameworks establish normative expectations, their practical significance ultimately depends on how AI systems reshape interactions between governments and citizens in real-world institutional settings.

The effectiveness of AI-enabled governance is also conditioned by broader administrative and technological capabilities. Successful deployment requires robust data infrastructures, interoperable digital platforms, cybersecurity safeguards, and a public sector capable of managing complex technological systems. Existing research suggests that improvements in digital government can enhance service quality, policy coordination, and administrative responsiveness, but these gains are often accompanied by tensions surrounding privacy protection, regulatory oversight, and public trust (Janssen et al., 2017; Mergel et al., 2019). These tensions are particularly significant in resource-dependent states undergoing simultaneous fiscal and institutional transformation.

Building on these insights, this study proposes an AI-mediated rentier transition framework that conceptualizes artificial intelligence as a structural force shaping the evolution of the social contract. The framework extends traditional rentier-state theory by identifying new mechanisms through which legitimacy is produced and contested in the digital era.

The first mechanism, administrative intelligence, refers to the use of AI-driven analytics, data integration, and predictive governance tools to improve public-service delivery and policy targeting. By increasing state effectiveness, AI can strengthen output legitimacy and partially replace traditional patronage-based mechanisms of political support.

The second mechanism, labour-market recomposition, captures the effects of automation and digital transformation on employment structures, skills demand, and economic participation. As governments seek to reduce dependence on public-sector employment and expand private-sector opportunities, labour-market

adaptation becomes a critical component of social stability and legitimacy.

The third mechanism, data rights and control, focuses on the governance challenges generated by algorithmic decision-making. The collection and use of large-scale data may improve administrative performance, but inadequate safeguards can generate concerns regarding surveillance, privacy, bias, and accountability. Public trust therefore depends not only on what governments achieve through AI but also on how these technologies are governed.

Taken together, these mechanisms suggest that artificial intelligence is reshaping the foundations of legitimacy in resource-dependent economies. Whereas classical rentier theory emphasizes redistribution, taxation, and coercive authority as the principal determinants of state–society relations, AI introduces new channels through which governments generate performance, exercise authority, and manage citizen expectations. The resulting transformation is neither purely technological nor purely economic; it represents a broader evolution of the social contract under conditions of digital statehood. Applied to Saudi Arabia, this framework provides a lens for examining how Vision 2030's technological ambitions interact with fiscal reform, institutional modernization, and changing patterns of political legitimacy.

3. METHODOLOGY AND RESEARCH DESIGN

This study employs a qualitative case-study design combining process tracing and documentary analysis to examine how artificial intelligence (AI) is being incorporated into governance institutions in Saudi Arabia and how these developments relate to broader processes of economic diversification and state transformation. A qualitative approach is appropriate because the research focuses on institutional change, policy evolution, and governance mechanisms that are difficult to capture through purely quantitative methods.

3.1. Research Design

The analysis uses process tracing to examine the evolution of Saudi Arabia's digital governance architecture between 2016 and 2025. Process tracing is particularly useful for investigating complex institutional transformations because it allows researchers to identify the mechanisms linking policy reforms, organizational change, and governance outcomes over time (Beach & Pedersen, 2019).

The study focuses on three areas of reform that are central to Saudi Arabia's digital transformation agenda: AI governance institutions, labour-market and human-capital policies, and data governance frameworks. Examining how these reforms developed and interacted over time provides insight into the role of AI within broader processes of institutional modernization and economic restructuring.

3.2. Data Sources

The empirical analysis draws on documentary evidence from official policy documents, regulatory frameworks, government reports, and international assessments. Primary sources include Vision 2030, the National Strategy for Data and Artificial Intelligence, SDAIA publications, Digital Government Authority reports, cybersecurity strategies, and Personal Data Protection Law (PDPL) documentation. These sources are supplemented by reports produced by the International Monetary Fund, the World Bank, the United Nations, and the OECD.

Documentary analysis is widely used in governance research because it facilitates the systematic examination of institutional development and policy change across extended periods of time (Bowen, 2009). The collected materials were reviewed to identify changes in governance arrangements, regulatory development, administrative capacity, and institutional safeguards relevant to AI deployment.

3.3. Analytical Framework

The empirical analysis is guided by the AI-mediated rentier transition framework developed in the preceding section. The framework identifies three mechanisms through which AI may influence institutional transformation in resource-dependent economies.

The first mechanism, administrative intelligence, captures the use of AI-enabled analytics, integrated data systems, and digital public services to enhance governmental effectiveness and service delivery. The second mechanism, labour-market recomposition, focuses on how AI-related technological change alters employment structures and skill requirements. The third mechanism, data rights and control examine governance challenges associated with privacy, transparency, accountability, and public trust in algorithmic decision-making.

Together, these mechanisms provide an analytical structure for examining how AI influences state capacity, economic transformation, and governance legitimacy. To assess the institutional development

of AI governance across these dimensions, the study develops a qualitative AI Governance Maturity Index (AGMI), described in the following section.

3.4. Operationalizing The AI Governance Maturity Index

To assess the institutional evolution of AI governance in Saudi Arabia, the study develops a qualitative AI Governance Maturity Index (AGMI). The index translates the theoretical dimensions of the AI-mediated rentier transition framework into observable governance indicators and provides a structured assessment of institutional development between 2016 and 2025.

The AGMI evaluates six dimensions of governance capacity: transparency and explainability, accountability and oversight, privacy and data protection, human oversight and contestability, risk management and cybersecurity, and institutional capacity. These dimensions are derived from widely recognized principles in the AI governance literature and reflect the core institutional safeguards associated with trustworthy AI.

Table 1: Dimensions And Indicators of the AI Governance Maturity Index (AGMI).

Dimension	Variables	Indicators	Data Sources
Transparency and Explainability	Algorithmic transparency	Disclosure of AI use in public services; explainability requirements	AI ethics guidelines; digital government policy documents
Accountability and Oversight	Institutional responsibility	Regulatory bodies; oversight procedures; audit mechanisms	National AI strategy; regulatory authority mandates
Privacy and Data Protection	Data governance safeguards	Implementation of PDPL; cross-border data transfer rules	PDPL regulatory guidance
Human Oversight and Contestability	Administrative review	Mechanisms for appeal of automated decisions; human-in-the-loop governance	AI ethics frameworks; governance policies
Risk Management and Security	AI risk governance	Alignment with international AI risk management standards	National cybersecurity authority documents
Institutional Capacity	Digital infrastructure	Data platforms, cloud infrastructure, digital skills within civil service	Digital government strategy; UN e-government survey

Source: Author's Framework.

3.4.1. Scoring Methodology

Each dimension is evaluated using a five-level maturity scale ranging from emerging governance arrangements (1) to mature and institutionalized governance systems (5). Scores were assigned through structured qualitative coding of documentary evidence, including national strategies, regulatory frameworks, institutional mandates, official government reports, and international assessments. Higher scores indicate greater levels of regulatory development, implementation capacity, institutional integration, and oversight.

Table 2: AI Governance Maturity Scale.

Score	Maturity Level
1	Emerging
2	Basic
3	Developing
4	Advanced
5	Mature

Source: Author's Framework

The assessment was conducted for three benchmark years—2016, 2020, and 2025—to capture changes in governance maturity over time. Overall AGMI scores were calculated as the arithmetic mean of the six dimensions and are intended as descriptive indicators of institutional development rather than precise quantitative measures.

The assessment followed a longitudinal approach, comparing the maturity of each governance dimension at three benchmark years (2016, 2020, and 2025). For example, transparency and explainability progressed from an emerging level (1) in 2016, when no dedicated AI governance framework existed, to a developing level (3) by 2025 following the introduction of AI ethics principles and formal governance guidelines. Similarly, risk management and cybersecurity advanced from basic institutional arrangements (2) to a mature level (5) following the establishment of SDAIA, the expansion of national cybersecurity frameworks, and the implementation of comprehensive digital governance infrastructure.

3.4.2. AGMI Assessment of Saudi Arabia (2016–2025)

The overall AGMI score was calculated as the arithmetic mean of the six governance dimensions for each benchmark year. Accordingly, the index increased from 1.3 in 2016 to 2.7 in 2020 and 4.0 in

2025, indicating substantial institutional progress in Saudi Arabia's AI governance architecture during the Vision 2030 period.

Table 3: AI Governance Maturity Assessment of Saudi Arabia (2016–2025).

Dimension	2016	2020	2025
Transparency & Explainability	1	2	3
Accountability & Oversight	1	3	4
Privacy & Data Protection	1	2	4
Human Oversight & Contestability	1	2	3
Risk Management & Cybersecurity	2	3	5
Institutional Capacity	2	4	5
Overall AGMI	**1.3**	**2.7**	**4.0**

Source: Author's Framework. Note: Overall AGMI Values Represent the Arithmetic Mean of the Six Governance Dimensions and Are Reported for Descriptive Purposes Only.

The results reveal substantial progress in Saudi Arabia's AI governance architecture during the Vision 2030 period. The overall AGMI score increased from 1.3 in 2016 to 2.7 in 2020 and 4.0 in 2025, indicating a transition from an emerging governance environment to an increasingly advanced institutional framework. Progress was particularly pronounced in institutional capacity, cybersecurity governance, and data protection, reflecting the establishment of SDAIA, the expansion of digital-government infrastructure, and the implementation of the Personal Data Protection Law. By contrast, transparency, explainability, and contestability advanced more gradually, suggesting that citizen-facing accountability mechanisms remain less developed than the state's administrative and regulatory capabilities.

This pattern is theoretically significant. It suggests that Saudi Arabia's AI governance trajectory has been driven primarily by institution-building and state-capacity enhancement, reinforcing output legitimacy through administrative performance, while the development of procedural and rights-based legitimacy mechanisms has proceeded at a slower pace. The finding provides empirical support for the AI-mediated rentier transition framework and highlights the uneven nature of governance transformation in digitally modernizing rentier states.

It is important to emphasize that the AGMI is intended as a qualitative heuristic framework rather than a quantitative governance benchmark. The index is designed to facilitate structured assessment of institutional development and governance trajectories over time rather than to provide a precise numerical measure of governance performance. Accordingly, the reported scores should be interpreted as indicative assessments of relative institutional maturity based on documented evidence rather than as objective performance metrics.

3.5. Operationalization Of Core Concepts

To ensure consistency between the theoretical framework and empirical analysis, the study operationalizes its principal concepts through observable institutional and policy indicators. The objective is not to establish precise quantitative measures, but rather to provide a structured framework linking theoretical constructs to empirical evidence.

AI governance capacity is assessed through indicators reflecting the development of governance institutions, regulatory frameworks, and implementation mechanisms associated with artificial intelligence. Particular attention is given to regulatory oversight, data protection arrangements, AI ethics guidelines, cybersecurity governance, and institutional coordination.

Labour-market transformation is examined through indicators related to employment restructuring, workforce development, and the changing balance between public- and private-sector employment. The analysis considers reforms aimed at expanding digital skills, increasing labour-market participation, and supporting the transition toward a knowledge-based economy.

Governance legitimacy is treated as a multidimensional concept encompassing administrative performance, public trust, perceptions of fairness, and confidence in governance institutions. Given the qualitative nature of the study, legitimacy is assessed through secondary evidence, policy evaluations, governance indicators, and findings from existing public-perception research rather than direct survey measurement.

Table 4: Operationalization Framework for the Empirical Analysis.

Concept	Variable	Indicator	Data Source

AI Governance Capacity	Governance Readiness	AI regulations, ethics frameworks, PDPL implementation, oversight institutions	SDAIA, DGA, World Bank, OECD
Labour-Market Transformation	Employment Transition	Public/private employment trends, digital-skills initiatives, knowledge-economy employment	GASTAT, IMF, World Bank
Governance Legitimacy	Administrative Performance	Service quality, digital-government effectiveness, governance indicators	UN E-Government Survey, World Bank
Governance Legitimacy	Public Trust and Fairness	Evidence from public-perception studies, trust indicators, governance assessments	Secondary studies and governance literature
Governance Legitimacy	Data Governance Confidence	Evidence relating to privacy protection and confidence in data governance arrangements	PDPL assessments, governance studies, secondary evidence

Source: Author's Framework.

3.6. Analytical Outputs

The methodology generates two complementary analytical outputs. First, process tracing reconstructs the evolution of Saudi Arabia's AI governance architecture between 2016 and 2025, identifying major institutional developments in digital government, data governance, cybersecurity, and AI regulation. This analysis provides a chronological account of how technological and regulatory reforms became embedded within broader processes of state transformation.

Second, the AI Governance Maturity Index (AGMI) assesses changes in governance capacity across six institutional dimensions: transparency and explainability, accountability and oversight, privacy and data protection, human oversight and contestability, risk management and cybersecurity, and institutional capacity. The AGMI provides a structured assessment of institutional development and governance readiness over time.

Together, these analytical outputs enable an integrated examination of how AI-enabled governance interacts with state capacity, labour-market transformation, and legitimacy dynamics within the broader context of Vision 2030. They also provide the empirical foundation for evaluating the AI-mediated rentier transition framework proposed in this study.

4. EMPIRICAL EVIDENCE FROM SAUDI ARABIA

4.1. The Evolution of AI Governance in Saudi Arabia (2016–2025)

The development of AI governance in Saudi Arabia since the launch of Vision 2030 illustrates how digital transformation has become embedded within broader processes of economic and institutional reform. Rather than emerging as a standalone technology policy, AI governance has evolved as part of a wider state-modernization agenda aimed at enhancing administrative capacity, supporting economic diversification, and strengthening public-sector effectiveness.

Between 2016 and 2025, Saudi Arabia established an increasingly comprehensive governance architecture encompassing artificial intelligence strategy, data governance, privacy protection, cybersecurity, and digital government. This process reflects a gradual transition from the digitization of public services toward the governance of data-driven decision-making and algorithmic systems.

Table 5: Major Milestones in the Evolution of Saudi Arabia's AI Governance Architecture (2016–2025).

Year	Institutional Milestone
2016	Launch of Vision 2030
2019	Establishment of SDAIA
2020	National Strategy for Data and AI
2021	AI Ethics Principles
2021	Personal Data Protection Law
2023	PDPL implementation phase
2024–2025	Expansion of generative AI governance initiatives

Source: Author's Compilation Based on Saudi Vision 2030, SDAIA Publications, The National Strategy for Data and Artificial Intelligence (NSDAI), The Personal Data Protection Law (PDPL), And Official Saudi Government Documents.

The sequencing of these reforms is particularly significant. The initial phase focused on establishing strategic direction through Vision 2030 and the creation of dedicated governance institutions, most notably the Saudi Data and Artificial Intelligence Authority (SDAIA). Subsequent reforms concentrated on developing regulatory and ethical frameworks, including the National Strategy for Data and Artificial Intelligence, AI Ethics Principles, and the Personal Data Protection Law. More recent initiatives have focused on strengthening implementation capacity and addressing governance challenges associated with advanced AI applications, including generative AI.

Viewed collectively, these developments reveal a pattern of progressive institutionalization. Three pillars are especially evident: responsible AI governance, data governance and privacy protection, and digital-state capacity. Together, these pillars provide the institutional foundations necessary for large-scale AI deployment while simultaneously addressing the governance risks associated with increasingly data-intensive forms of public administration.

From the perspective of the AI-mediated rentier transition framework, these reforms indicate that Saudi Arabia's approach to AI has been driven primarily by institution-building rather than technology adoption alone. The rapid expansion of governance capacity suggests that artificial intelligence is increasingly being incorporated into the state's broader modernization strategy, enhancing its ability to coordinate policies, deliver services, and support economic transformation. At the same time, the emphasis on ethics principles, privacy regulation, and oversight mechanisms reflects growing recognition that long-term legitimacy depends not only on technological capability but also on public confidence in how these technologies are governed.

4.2. Labour-Market Transformation and the Evolution of the Rentier Employment Model

Labour-market transformation represents one of the most important pathways through which artificial intelligence and economic diversification may reshape the social contract in Saudi Arabia. Historically, public-sector employment served as a central pillar of the rentier model, providing income security, social stability, and a direct mechanism through which resource wealth was redistributed to citizens. In this context, employment policy functioned not only as an economic instrument but also as a source of political legitimacy.

Vision 2030 seeks to gradually redefine this relationship by reducing dependence on public-sector employment and expanding opportunities within a more diversified and productivity-driven economy. This transition reflects a broader shift from redistribution-based legitimacy toward a model increasingly linked to economic participation, skills development, and private-sector opportunity creation.

Evidence from labour-market indicators suggests that significant structural changes have occurred during the reform period.

Table 6: Selected Labour-Market Indicators and Structural Transformation in Saudi Arabia (2016–2025).

Indicator	2016	2024
Saudi unemployment rate (%)	12.3	7.0
Female labor-force participation rate (%)	17.4	36.2
Saudi employment in private sector (million workers)	1.66	2.43
ICT sector contribution to GDP (%)	3.0	4.7
Share of public-sector employment in total Saudi employment (%)	~45	~34

Sources: General Authority for Statistics (GASTAT), International Monetary Fund, World Bank, Ministry of Communications and Information Technology.

The data indicate substantial progress across multiple dimensions of labour-market performance. Unemployment among Saudi nationals declined significantly, female labour-force participation more than doubled, and private-sector employment expanded considerably. At the same time, the relative importance of public-sector employment declined, while technology-intensive sectors increased their contribution to economic activity. Collectively, these trends suggest a gradual reconfiguration of the traditional rentier employment model.

Artificial intelligence contributes to this transition in several ways. First, AI-related investments have accelerated demand for digital skills and advanced technical capabilities, reinforcing the strategic importance of human-capital development. Second, the expansion of data-driven industries, digital services, and technology-intensive sectors has created new channels for employment growth outside the public sector. Third, AI-enabled productivity gains support the broader objective of creating a more competitive and innovation-oriented economy capable of generating sustainable non-oil growth.

From the perspective of the AI-mediated rentier transition framework, these developments illustrate a shift in the foundations of economic inclusion. Whereas the traditional social contract relied heavily on public-sector employment as a mechanism of redistribution, the emerging model increasingly emphasizes labour-market participation, skills acquisition, and productivity as pathways to economic security. In this sense, artificial intelligence functions not only as a technological innovation but also as a catalyst for restructuring the economic foundations of state–society relations.

The transition nevertheless presents important challenges. Automation and digital transformation may generate skill mismatches and uneven labour-

market outcomes if workforce adaptation does not keep pace with technological change. Consequently, the long-term legitimacy of this emerging model depends on the state's ability to ensure that the benefits of technological transformation are broadly distributed and supported by

4.3. Governance Legitimacy, Public Trust, And Data Rights

While administrative modernization and labour-market transformation may strengthen output legitimacy, the long-term sustainability of AI-enabled governance depends on whether digital institutions are perceived as trustworthy, accountable, and respectful of individual rights. As artificial intelligence becomes more deeply integrated into public administration, legitimacy increasingly depends not only on what governments achieve but also on how technological decisions are made and governed.

The expansion of AI-enabled governance creates both opportunities and challenges for institutional legitimacy. On one hand, digital government platforms, integrated data systems, and AI-supported public services can enhance administrative effectiveness, improve service delivery, and reduce transaction costs. Such outcomes may strengthen output legitimacy by increasing governmental responsiveness and policy performance. On the other hand, the growing use of algorithmic systems introduces concerns regarding privacy protection, transparency, accountability, and procedural fairness. These concerns become particularly important when automated systems influence decisions affecting citizens' access to services, benefits, or opportunities.

Saudi Arabia's evolving governance framework increasingly reflects recognition of these challenges. The introduction of AI Ethics Principles, the Personal Data Protection Law (PDPL), and broader data-governance reforms demonstrates a shift from a technology-adoption approach toward a governance-centered approach that places greater emphasis on responsible innovation, regulatory oversight, and institutional safeguards. Rather than treating artificial intelligence solely as an instrument of modernization, policymakers have increasingly acknowledged the importance of establishing governance mechanisms capable of sustaining public confidence in digital systems.

The evidence suggests that the legitimacy of AI-enabled governance rests on three interrelated conditions. First, digital technologies must contribute to visible improvements in public-sector performance and service quality. Second, individuals must have confidence that personal data are collected, processed, and protected within a transparent and accountable regulatory framework. Third, AI-supported decisions must remain subject to meaningful human oversight and institutional review. Together, these conditions help determine whether technological innovation is perceived as enhancing governance quality or as creating new risks for citizens.

From the perspective of the AI-mediated rentier transition framework, these developments illustrate an important evolution in the foundations of legitimacy. In traditional rentier systems, legitimacy was derived primarily from the state's capacity to redistribute economic resources and provide material benefits. In increasingly digitalized governance environments, legitimacy also becomes linked to the state's ability to manage data responsibly, protect individual rights, and maintain confidence in algorithmically mediated public institutions. Consequently, artificial intelligence is not merely transforming administrative processes; it is gradually reshaping the institutional foundations of the social contract itself.

The Saudi case suggests that the evolution of digital governance is characterized by a degree of asymmetry. Institutional capacity, cybersecurity governance, and digital-service delivery have advanced rapidly, while transparency, explainability, and contestability mechanisms have developed more gradually. This pattern is consistent with findings from the AGMI assessment and highlights a broader challenge confronting digitally transforming states: ensuring that advances in technological capability are matched by comparable progress in procedural and rights-based dimensions of legitimacy.

4.4. Comparative Institutional Perspective

Comparative evidence suggests that Saudi Arabia's experience reflects a broader trend among resource-dependent economies that are simultaneously pursuing economic diversification and digital-state transformation. While institutional approaches vary considerably across countries, three common patterns emerge.

First, successful AI adoption appears to depend less on technological investment alone than on the development of governance institutions capable of managing data, regulating algorithmic systems, and coordinating implementation across government. Countries that have established dedicated governance frameworks generally exhibit stronger

institutional readiness and greater capacity to integrate AI into public administration.

Second, the relationship between AI adoption and public trust is shaped by governance quality rather than technological sophistication alone. Comparative evidence indicates that transparency, accountability, privacy protection, and human oversight remain critical determinants of institutional legitimacy in digitally transforming states. Countries with stronger safeguards in these areas appear better positioned to sustain public confidence during periods of economic and technological change.

Third, AI governance and fiscal transformation frequently evolve together. Across resource-dependent economies, digital transformation increasingly forms part of broader strategies aimed at economic diversification, public-sector modernization, and the gradual reconfiguration of state–society relations.

Table 7: Comparative AI Governance Maturity and Social Contract Transformation in Selected Resource-Dependent Economies.

Country	AI Governance	Administrative Intelligence	Labor-Market Transformation	Data Rights & Governance	Social Contract Evolution
Saudi Arabia	Advanced	High	High	Developing	Rentier → Performance-Based
UAE	Advanced	High	Moderate	Developing	Rentier → Modernized Rentier
Qatar	Developing	Moderate	Moderate	Basic	Predominantly Rentier
Norway	Mature	High	High	Mature	Taxation-Based Democratic Contract

Source: Author's Compilation Based on OECD (2019), UNESCO (2021), IMF (2023), United Nations (2022), Relevant Academic Literature, And National AI Strategy Documents.

Viewed through the AI-mediated rentier transition framework, Saudi Arabia occupies a distinctive position. Like other Gulf economies, the Kingdom has invested heavily in digital infrastructure, artificial intelligence, and public-sector modernization. However, the Saudi case is characterized by the simultaneous interaction of three large-scale transitions: economic diversification under Vision 2030, the rapid institutionalization of AI governance, and the gradual evolution of a historically rentier social contract.

Comparison with the United Arab Emirates highlights important similarities in state-led digital transformation and institutional investment. Comparison with Norway, however, illustrates a different model in which AI governance operates within a mature taxation-based social contract supported by long-established accountability mechanisms and high levels of institutional trust. These contrasts underscore the unique nature of the Saudi experience, where AI governance serves not only administrative objectives but also broader processes of economic and institutional transformation.

The comparative evidence therefore supports the central argument of this study. Artificial intelligence is increasingly functioning as a governance capability that shapes how states build administrative capacity, manage economic transition, and sustain legitimacy. Saudi Arabia provides a particularly important example of this process because technological modernization, economic diversification, and social-contract transformation are occurring simultaneously within a single policy framework. The case therefore offers valuable insight into how AI may contribute to the evolution of governance and legitimacy in resource-dependent economies undergoing structural change.

4.5. Synthesis: AI And the Evolution of the Social Contract

Taken together, the findings suggest that artificial intelligence is becoming an increasingly important component of institutional transformation in Saudi Arabia. The evidence indicates that AI is not operating as an isolated technological innovation but rather as part of a broader process of economic diversification, administrative modernization, and social-contract evolution under Vision 2030.

Across the three dimensions examined in this study, a consistent pattern emerges. First, the expansion of AI-enabled governance has strengthened state capacity through improvements in digital service delivery, data integration, regulatory coordination, and administrative efficiency. Second, labour-market reforms have gradually reduced the centrality of public-sector employment while increasing the importance of human capital, digital skills, and private-sector participation. Third, the growing role of data-driven governance has elevated questions of transparency, privacy protection, accountability, and public trust as increasingly important determinants of institutional legitimacy.

Viewed collectively, these developments point to a gradual reconfiguration of the traditional rentier social contract. Historically, legitimacy in resource-dependent economies was derived primarily from the state's capacity to redistribute resource revenues through public employment, subsidies, and welfare provision. The evidence presented here suggests that legitimacy is increasingly linked to the state's ability to deliver effective public services, create economic opportunities, and govern emerging technologies in a manner perceived as fair, transparent, and accountable.

The findings also highlight an important asymmetry in the transformation process. Institutional capacity, digital-government infrastructure, and regulatory development have advanced rapidly, while transparency, explainability, and citizen-facing accountability mechanisms have evolved more gradually. This suggests that technological modernization alone is insufficient to sustain long-term legitimacy. The durability of AI-enabled governance ultimately depends on whether advances in administrative performance are accompanied by comparable progress in procedural and rights-based dimensions of governance.

These findings provide empirical support for the AI-mediated rentier transition framework proposed in this study. The Saudi case demonstrates how artificial intelligence can simultaneously strengthen state capacity, reshape labour-market structures, and alter the institutional foundations of legitimacy. In this sense, AI functions not merely as a productivity-enhancing technology but as a governance capability that is increasingly embedded within the evolving relationship between the state and society.

The broader implication is that digital transformation and social-contract transformation are becoming increasingly interconnected processes. As artificial intelligence becomes more deeply integrated into public institutions, the future trajectory of legitimacy in resource-dependent economies is likely to depend not only on economic diversification but also on the governance arrangements that shape how digital technologies are deployed, regulated, and trusted.

5. LIMITATIONS AND FUTURE RESEARCH

Several limitations should be acknowledged. First, the study adopts a qualitative institutional approach based on process tracing and documentary analysis. While these methods are well suited to examining complex governance transformations and identifying plausible causal mechanisms, they do not permit direct statistical testing of the relationships between AI adoption, state capacity, and political legitimacy (Beach & Pedersen, 2019; Bowen, 2009). The findings should therefore be interpreted as theoretically informed explanations of institutional change rather than definitive causal estimates.

Second, the analysis focuses on Saudi Arabia as a single-case study. The Kingdom provides a particularly valuable setting because of the scale of Vision 2030 and the rapid development of its AI governance architecture. Nevertheless, differences in political institutions, administrative capacity, and economic structures may limit the extent to which the findings can be generalized to other resource-dependent economies (Yin, 2018).

Third, the study examines legitimacy primarily through institutional and governance indicators rather than direct measures of citizen attitudes. As a result, questions relating to public trust, perceptions of algorithmic fairness, and societal acceptance of AI remain only partially addressed. These dimensions are likely to become increasingly important as AI systems assume a larger role in public administration and service delivery (Berman et al., 2024; Veale & Borgesius, 2021).

These limitations also point toward several avenues for future research. Comparative studies could examine whether the mechanisms identified in the AI-mediated rentier transition framework operate similarly across different resource-dependent economies. Future research may also integrate survey evidence, public-opinion data, and quantitative governance indicators to explore more directly the relationship between AI governance, citizen trust, and institutional legitimacy. Longitudinal studies would be particularly valuable for assessing whether artificial intelligence ultimately reinforces, transforms, or replaces traditional foundations of legitimacy in rentier political economies.

More broadly, the concept of AI-mediated rentier transition raises important questions regarding the future of state–society relations in digitally transforming economies. Understanding how technological governance interacts with economic diversification, administrative capacity, and public trust is likely to remain an increasingly important area of inquiry as artificial intelligence becomes more deeply embedded in public institutions worldwide.

6. CONCLUSION

This study has examined how artificial intelligence is reshaping the social contract in an oil-dependent economy undergoing economic

diversification. Moving beyond perspectives that treat AI primarily as a technological or economic phenomenon, the analysis has argued that artificial intelligence increasingly functions as a governance capability with important implications for state capacity, institutional legitimacy, and state–society relations.

Drawing on rentier state theory, legitimacy theory, and digital governance scholarship, the paper developed the concept of AI-mediated rentier transition to explain how technological transformation interacts with broader processes of economic and institutional change. The findings suggest that AI influences this transition through three interconnected mechanisms: administrative intelligence, labour-market recomposition, and data rights and control. Together, these mechanisms shape how governments deliver public services, facilitate economic participation, and sustain legitimacy during periods of structural transformation.

The Saudi Arabian case demonstrates how artificial intelligence can become embedded within broader strategies of economic diversification and state modernization. The evidence indicates that AI has contributed to the strengthening of administrative capacity, the expansion of digital governance, and the evolution of labour-market structures associated with Vision 2030. At the same time, the findings underscore that technological capability alone is insufficient to sustain legitimacy. The long-term success of AI-enabled governance depends on institutional arrangements that ensure transparency, accountability, privacy protection, and meaningful human oversight.

More broadly, the study contributes to emerging debates at the intersection of political economy and digital governance by demonstrating that technological transformation and social-contract evolution are increasingly intertwined processes. Classical rentier theories emphasize redistribution and resource allocation as the primary foundations of political order. The evidence presented here suggests that, in digitally transforming states, legitimacy is increasingly influenced by administrative effectiveness, responsible data governance, and public confidence in algorithmically mediated institutions.

The argument advanced in this paper extends beyond Saudi Arabia. Across many resource-dependent economies, economic diversification and digital transformation are unfolding simultaneously, creating new pressures and opportunities for redefining the foundations of legitimacy. The concept of AI-mediated rentier transition provides a framework for understanding these developments and for examining how technological governance may reshape state–society relations in the decades ahead.

Ultimately, the significance of artificial intelligence lies not only in its capacity to transform economies or public administrations, but also in its potential to reshape the institutional foundations through which states secure legitimacy and citizens experience governance. As AI becomes increasingly embedded in public institutions, the future of digital transformation and the future of the social contract are likely to become increasingly inseparable.

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