

Economic and Social Commission for Western Asia

The role of emerging technologies and innovation in enhancing effectiveness and decision-making in Arab public Institutions

Emilio Bugli Innocenti

ESCWA meeting on Technology and Innovation for Arab Public Institutions
Amman, 28-29 February 2024 (and Zoom)



UNITED NATIONS

الاسواق
ESCWA

Shared Prosperity Dignified Life



Emerging Technologies for Public Administration Effectiveness

Objectives:

- Explore the potential of emerging technologies and innovation to increase the performance, effectiveness, and efficiency of public institutions in the Arab region
- Analyse the current trends and needs of Arab public institutions
- Discuss to which extent emerging technologies can or have been able to address those needs
- Focus on the role data related technologies, data sharing and Digital Public Infrastructures among government agencies as of their significant role in enhancing effectiveness of government and the offered services

Report Overview

- Objective: Analyzing the Adoption of emerging technologies in Public Sector effectiveness
- Scope: Includes global technology trends, detailed case studies (10), and analysis within the Arab region
- Goal: To identify strategies and best practices for implementing digital transformation effectively

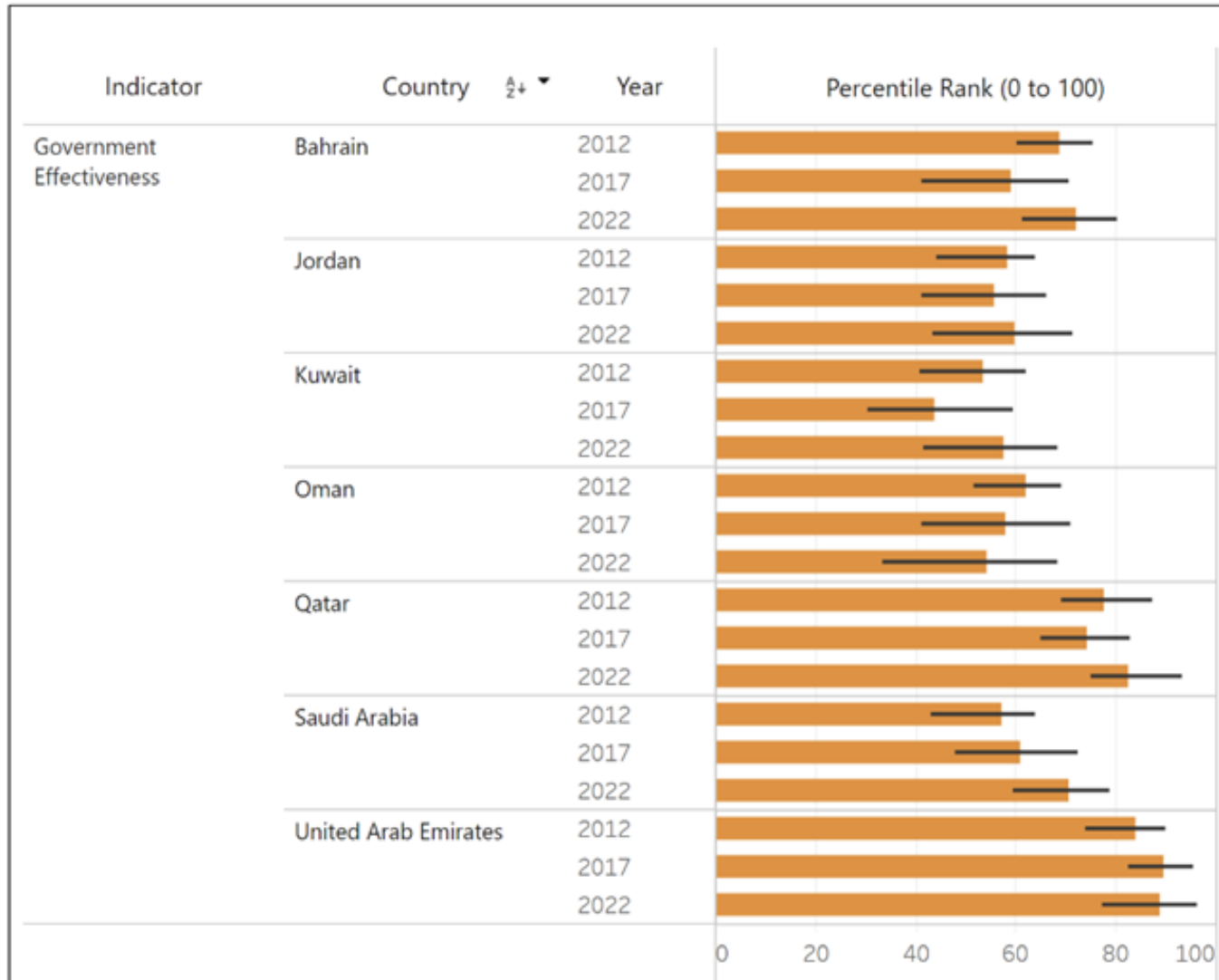
Effectiveness in the Public Sector

Effectiveness in the public sector refers to the ability to achieve its intended objectives and outcomes efficiently and in a manner that serves the public interest (how well public sector entities are able to deliver public services, implement policies, and manage resources to meet the needs and expectations of the citizens they serve)

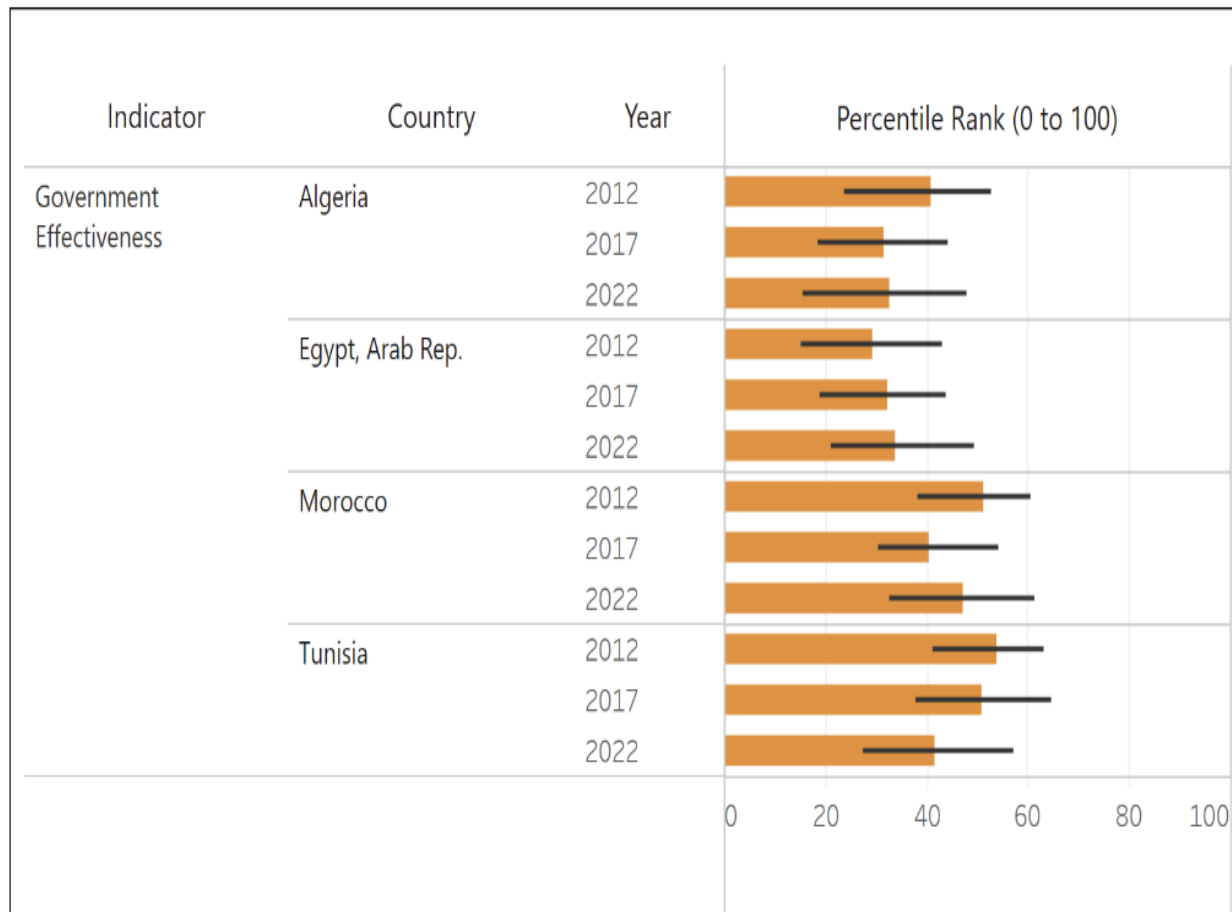
It includes Goal Achievement, Efficiency, Accountability, Quality of Service, Equity and Fairness, Adaptability and Innovation, Stakeholder Engagement, Measurable Outcomes, Legal and Ethical Compliance, Long-Term Sustainability, Public Trust and Confidence.

As part of WGI, WB governance effectiveness indicators , capture perceptions of the quality of public services, of the civil service and the degree of its independence from political pressures, and of policy formulation and implementation, and the credibility of the government's commitment to such policies

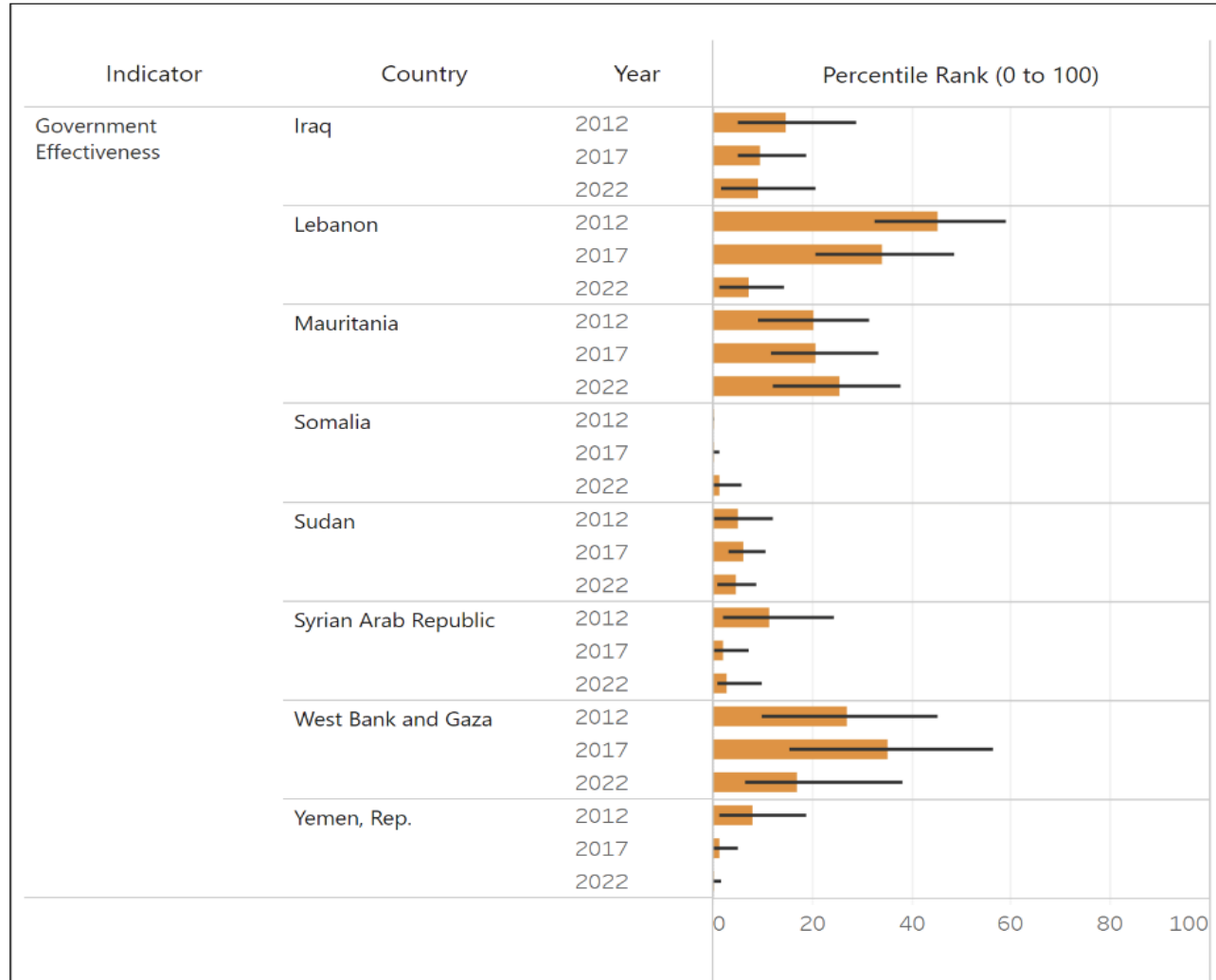
Grouping Arab Countries



Grouping Arab Countries



Grouping Arab Countries



Grouping Arab Countries

- Grouping Rationale: Grouping based on similar socio-economic conditions and digital maturity, and WB's governance effectiveness:

Clusters:

- Conflict and Post-Conflict Countries: Iraq, Lebanon, Libya, Mauritania, Palestine, Somalia, Syria, Yemen
 - North Africa: Algeria, Egypt, Morocco, Tunisia,
 - GCC Countries and Jordan: Bahrain, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, UAE
- Purpose: Tailoring digital strategies to specific regional needs and contexts

Global Trends in Emerging Technologies

- **AI and Machine Learning:** Enhancing predictive capabilities in government decision-making, e.g., for health care and urban planning
- **Big Data Analytics:** Utilizing large datasets for improved policy-making, trend analysis, and public sector transparency
- **Blockchain:** Ensuring secure and transparent record-keeping in areas like property registration and election systems
- **IoT:** Optimizing resource management and public utilities, e.g., smart metering for energy consumption
- **Cloud Computing:** Enhancing scalability and accessibility of government services, reducing infrastructure costs
- **Digital Twins:** Used in infrastructure management for remote monitoring and predictive maintenance

Global Trends in Emerging Technologies

- **Chatbots and Virtual Assistants for customer service:** can be used for answering citizen queries 24/7, e.g., helping citizens to find relevant local services or events
- **Augmented Reality (AR) for training and assistance:** can provide real-time, hands-on guides for workers, eg, training firefighters using AR simulations of emergency scenarios
- **Remote Monitoring for healthcare and utilities:** Technologies like wearables can allow remote patient monitoring, ensuring elderly or vulnerable populations receive timely care
- **Data Analytics for identifying disparities:** By analysing public health data, governments can identify healthcare/education access disparities
- **Algorithmic Fairness tools to reduce bias:** implemented, eg, to ensure unbiased hiring processes in government,
- **GIS for planning:** helps visualize spatial data, aiding governments in allocating resources for underserved communities

Global Trends in Emerging Technologies

- **Innovation Labs and Sandboxes for experimentation:** to test new policies or technologies in controlled environments before broad implementation
- **5G technology for improved connectivity:** Enhancing communication for emergency services with faster and more reliable connections
- **Social Media and Online Engagement Platforms:** Governments can engage citizens in public consultations via social media, making participatory processes more accessible
- **Civic Tech tools for citizen participation:** Platforms that allow citizens to contribute ideas, like crowdsourcing ideas for urban development projects,
- **Key Performance Indicator (KPI) dashboards:** Publicly accessible dashboards can show real-time metrics on government performance,
- **Performance Management Software:** helps agencies manage employee performance and goals, ensuring alignment with overarching objectives

Global Trends in Emerging Technologies

- **Regulatory Technology (RegTech) for compliance:** RegTech can streamline compliance processes, ensuring sectors like finance adhere to regulations
- **Renewable Energy Technologies for sustainability:** Governments can adopt green energy, like implementing solar energy projects for their facilities
- **Environmental Monitoring Systems:** can monitor air quality and emissions ensuring timely interventions for pollution control
- **Cybersecurity measures for data protection:** protecting citizen data in government databases is paramount to maintain trust
- **Digital Identity and Authentication systems:** digital identity ensures citizens can access public services seamlessly without compromising security
- **Transparency initiatives for building trust:** Publishing government decision-making processes online can make governance more transparent

Case Study – Estonia's e-Government System

- *Background:* Transition from Soviet influence to a leading digital nation
- *Key Features:* e-Residency, e-Voting, e-Tax Filing, X-Road platform
- *Outcomes:* Reduced bureaucracy, increased citizen satisfaction, cost savings, and enhanced data security
- *Challenges:* Addressing cybersecurity threats, bridging the digital divide, ensuring data privacy

Case Study – India's Aadhaar System

- *Background:* Addressing identification and service delivery challenges in a diverse, populous nation
- *Key Features:* Unique Identification Number linked to biometrics, wide application across services
- *Outcomes:* Improved financial inclusion, streamlined service delivery, increased transparency
- *Challenges:* Managing the scale of implementation, ensuring consistent connectivity, data privacy concerns

Case Study – Rwanda's e-Government

- *Background:* Post-genocide recovery
- *Key Features:* e-Government, electronic tax system, e-Justice system
- *Outcomes:* Improved service delivery, reduced corruption, faster justice
- *Challenges:* Ensuring rural inclusion, continuing training & education

Case Study – Kenya's Digital Initiatives

- *Background:* Growing East African economy
- *Key Features:* Huduma Centres, e-citizen portal, M-Pesa for financial inclusion
- *Outcomes:* Efficient public services, enhanced financial inclusion
- *Challenges:* Internet connectivity, system interoperability

Challenges in Digital Transformation

- Common Global Challenges: Addressing issues like cybersecurity, data privacy, and digital literacy.
- Region-Specific Challenges: Infrastructure development needs, adapting to cultural differences, and promoting inclusivity

Recommendations for the Arab Region

- **Digital Strategy Development:** Emphasizing the need for comprehensive and holistic digital strategies.
- **Innovation and Governance:** Promoting a culture of innovation and robust data governance mechanisms.
- **Infrastructure Investment:** Highlighting the importance of investing in digital infrastructure and human capital.
- **Citizen-Centric Services:** Encouraging the development of services centered around citizen needs and feedback

Tailored Roadmap for the Arab Region

- **For Conflict and Post-Conflict Countries:** Focusing on basic digital infrastructure and mobile services.
- **For North Africa:** Expanding broadband, supporting tech ecosystems, and advancing digital governance.
- **For GCC Countries and Jordan:** Developing AI and data-driven governance, enhancing cybersecurity, and adopting citizen-centric digital services.

Concluding Remarks

- *The Future of Public Sector Digitalization*: Emphasizing Digital Public Infrastructures as key enablers for reform and innovation.
- *Policy and Collaboration*: The necessity for adaptive policymaking and international collaboration.
- *Vision for the Future*: Aiming for sustainable, inclusive, and efficient digital governance.

Digital Public Infrastructures & Digital Public Goods

- **DPI** refers to digital systems, platforms, and frameworks that governments use to provide services to their citizens. A strong DPI has three foundational systems—identity, payments, and data exchange—that together can make life easier in important ways.
- **DPG** are generally defined as "open-source software, open data, open AI models, open standards, and open content" that align with privacy laws, best practices, and help attain the Sustainable Development Goals (SDGs).



Shared Prosperity **Dignified Life**

