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Mapping Functional Competencies for Strategic Readiness in Public Utilities and Telecommunication Governance: A Case Study of Sarawak Civil Service

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Abstract

This study explores a strategic competency mapping initiative within the Ministry of Utilities and Telecommunication (MUT) Sarawak, aimed at enhancing institutional readiness amidst digital transformation and evolving governance challenges. Adopting a qualitative-descriptive design, the study integrates document analysis, focus group discussions (FGDs), and expert panel validation to identify and assess functional competencies across four strategic domains: Digitalization and Data Governance, Utility and Infrastructure Planning, Telecommunication Innovation, and Policy and Regulatory Leadership. The findings reveal substantial competency gaps, particularly in digital literacy, strategic foresight, regulatory agility, and stakeholder engagement. These insights culminate in a context-sensitive competency framework designed to guide workforce development, succession planning, and organizational redesign. The study underscores the importance of aligning competency development with both local governance needs and international standards, providing a replicable model for future-ready capacity building in the public sector.

Key words: *Competency Mapping, Strategic Readiness, Public Sector Governance, Digital Transformation, Utilities and Telecommunication*

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Introduction

The Sarawak government envisions a civil service that is globally competitive, agile, and strategically prepared to navigate the increasing complexity and volatility of the 21st-century governance landscape. In alignment with this aspiration, the Ministry of Utilities and Telecommunication (MUT) launched a functional competency profiling initiative to systematically identify, assess, and develop critical leadership and technical competencies essential for future-ready governance in the utility and telecommunication sectors. This initiative responds not only to Sarawak's developmental goals under the Post-COVID-19 Development Strategy 2030 (PCDS 2030) but also to the broader imperative of strengthening institutional resilience amid digital disruption and global uncertainties (Sarawak Government, 2021).

Malaysia's public sector has previously undertaken strategic transformation efforts, such as the New Public Service Framework, MyDigital Blueprint, and Public Sector Strategic Plan 2021–2025, all aimed at modernizing civil service functions and enhancing delivery effectiveness (MAMPU, 2021; EPU, 2021). However, the MUT initiative is notable for its sector-specific approach, integrating functional mapping with digital, regulatory, and operational demands unique to public utilities and telecommunication governance.

In the wake of the COVID-19 pandemic, the urgency for competency-based human capital development has intensified, particularly in essential service sectors where service continuity, digital infrastructure, and policy agility are paramount (OECD, 2022; UNDESA, 2021). Strategic competency mapping provides a data-driven foundation for talent development, succession planning, and capacity building, enabling public sector organizations to remain adaptive, accountable, and innovation-driven in an era marked by rapid change.

Problem Statement

Despite a series of public sector reform initiatives in Malaysia—including those aimed at enhancing digital governance, public service delivery, and institutional effectiveness—many

government agencies, particularly those overseeing essential infrastructure such as utilities and telecommunications, continue to exhibit significant competency gaps in strategic readiness, leadership agility, and domain-specific functional expertise. A persistent misalignment exists between current workforce capabilities and the rapidly evolving demands of digital transformation, stakeholder-centric service models, policy coherence, and innovation-driven governance (MAMPU, 2021; World Bank, 2022).

This mismatch is further exacerbated by the absence of an integrated and evidence-based framework for assessing functional competencies and anticipating future workforce needs. Without a structured, sector-specific approach to competency profiling and strategic human capital development, ministries risk operational inefficiencies, diminished policy responsiveness, and declining public confidence—particularly in high-impact sectors such as public utilities and telecommunications (OECD, 2022; UNDESA, 2021).

National and regional assessments—including reports by Malaysia's Public Service Department (JPA) and reviews under the Government Transformation Programme (GTP) by PEMANDU—have highlighted ongoing challenges in digital capability maturity, cross-agency coordination, and the institutionalization of evidence-based policy execution at both federal and state levels (PEMANDU, 2020; JPA, 2022). These findings underscore the urgent need for a comprehensive and contextualized competency mapping initiative tailored to Sarawak's unique governance landscape. This study responds to that call by developing a framework to identify, assess, and align functional competencies with the strategic imperatives of the Ministry of Utilities and Telecommunication (MUT), thereby enhancing institutional readiness for future governance challenges.

Literature Review

Strategic Readiness and Public Sector Transformation

Strategic readiness refers to an organization's ability to anticipate, adapt, and respond to emerging challenges, particularly in volatile and complex environments. In the public sector, this involves aligning leadership capabilities, digital infrastructure, and governance

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frameworks with long-term strategic goals (OECD, 2020). The concept is increasingly relevant in sectors managing critical infrastructure, such as public utilities and telecommunications, which face rapid technological advancements and heightened expectations for service delivery and accountability (World Bank, 2019).

Public service transformation globally has been shaped by New Public Management (NPM) principles, emphasizing efficiency, performance measurement, and citizen-centric services (Pollitt & Bouckaert, 2017). However, critiques of NPM have called for post-NPM approaches that integrate collaborative governance and adaptive capabilities to navigate the digital economy, climate disruptions, and pandemic-related uncertainties (Christensen & Lægreid, 2020). Within this context, competency-based frameworks serve as vital tools for ensuring strategic readiness.

Functional Competencies in Public Utilities and Telecommunications

Functional competencies refer to job-specific knowledge, skills, and behaviors that enable professionals to perform effectively in specialized domains (Spencer & Spencer, 1993). In public utilities and telecommunications, these competencies include technical expertise (e.g., infrastructure planning, digital system design), policy interpretation, regulatory compliance, stakeholder coordination, and service innovation (Asian Development Bank, 2021).

A study by the International Telecommunication Union (ITU, 2021) emphasized the urgent need for workforce reskilling in the telecommunications sector to accommodate 5G implementation, AI integration, and cybersecurity management. Similarly, in utility governance, functional competencies such as risk assessment, energy transition planning, and smart-grid technology management are critical to sustaining performance and public trust (International Energy Agency, 2022). For jurisdictions like Sarawak, where digital infrastructure expansion is pivotal to economic development, a localized competency mapping exercise is essential.

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Competency Mapping in Public Sector Workforce Development

Competency mapping is a systematic process that identifies and assesses required competencies across roles, enabling targeted training, succession planning, and organizational redesign (Boyatzis, 2008). Governments across the ASEAN region have adopted competency mapping to support civil service reform and future-proof public institutions (UNDP, 2022).

Malaysia's Public Service Department (JPA) and national initiatives such as the Public Sector Strategic Plan (2021–2025) have acknowledged gaps in digital leadership, policy adaptability, and data literacy among civil servants (JPA, 2021). Reports by the Performance Management and Delivery Unit (PEMANDU) under the Government Transformation Programme (GTP) further revealed the fragmented coordination between agencies, highlighting the need for cross-functional capability development (PEMANDU, 2017).

In Sarawak, recent administrative reforms emphasize building a future-ready civil service aligned with the Sarawak Digital Economy Strategy (2018–2022), which mandates digital innovation, customer-centric governance, and strategic infrastructure development (Sarawak Government, 2018). Yet, empirical studies evaluating the functional competencies required to meet these objectives, particularly in high-impact sectors like utilities and telecommunications, remain limited.

Objectives of the Study

1. Map the current leadership and functional competencies of officers within the Ministry of Utilities and Telecommunication Sarawak.
2. Identify competency gaps in relation to future governance demands, especially within digitalization, policy and regulatory frameworks, and infrastructure development.

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3. Propose a strategic framework for competency development to enhance readiness and agility in governance and service delivery.

Method

This study adopted a qualitative-descriptive research design with embedded elements of developmental evaluation to explore and map functional competencies for strategic readiness within the Sarawak Civil Service (SCS), specifically in the public utilities and telecommunication governance sectors. The methodological approach aimed to provide a rich, contextualized understanding of current competency gaps and future competency needs. The combination of document analysis, focus group discussions (FGDs), and expert panel validation enabled triangulation of data, enhancing both the depth and trustworthiness of the findings (Creswell & Poth, 2018; Patton, 2011).

Document Analysis

Document analysis was employed to systematically examine official policy documents, strategic plans, organizational structures, and performance reports related to Sarawak's public utilities and telecommunication governance. These documents included the Sarawak Digital Economy Strategy (2018–2022), departmental key result areas (KRAs), annual reports, and competency frameworks from federal and state-level agencies. The purpose of this analysis was to identify the existing governance models, strategic objectives, role delineation, and competency expectations embedded within institutional mandates.

The analysis followed the principles of content analysis—including open coding, thematic categorization, and frequency mapping—to extract competency-related data and align them with the functional domains under study (Bowen, 2009). This step provided foundational insights that informed the structure of the FGDs and the development of the preliminary competency framework.

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Focus Group Discussions (FGDs)

A total of four Focus Group Discussions (FGDs) were conducted, each comprising 6–8 participants selected through purposive sampling. Participants included senior officers, division heads, and key personnel from the following four strategic functional domains:

- Digitalization and IT Management
- Utility Planning and Infrastructure Management
- Telecommunication Policy and Operations
- Policy, Compliance, and Regulatory Functions

The FGDs aimed to uncover role-specific tasks, contextual challenges, and perceived competency requirements. Discussions were guided by a semi-structured protocol developed from prior literature on competency mapping and organizational learning (Spencer & Spencer, 1993; Boyatzis, 2008). Each session lasted approximately 90–120 minutes and was audio-recorded with participant consent.

To enhance data richness, the sessions employed projective techniques (e.g., role simulation scenarios, hypothetical problem-solving exercises) to elicit deeper reflections on behavioral competencies. Data from the FGDs were transcribed verbatim and analyzed thematically using NVivo software, following Braun and Clarke's (2006) six-phase method for thematic analysis. Emergent themes were clustered into behavioral, technical, and strategic competencies across the functional domains.

Expert Panel Review

To validate the initial competency framework derived from document analysis and FGDs, an expert panel review was conducted using a modified Delphi technique (Hsu & Sandford, 2007). The panel consisted of ten experts, including senior state administrators, sectoral consultants, policy scholars, and digital governance specialists. The validation process occurred in two iterative rounds:

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- Round 1 involved independent review of the proposed competency domains and their behavioral indicators. Experts provided written feedback on clarity, relevance, and completeness.
- Round 2 was a structured deliberation session (via Zoom and in-person), during which consensus was built around core and functional competencies, key performance indicators (KPIs), and indicators of behavioral proficiency.

Criteria such as content validity, contextual relevance, and applicability across organizational levels were emphasized during review (Lynn, 1986). The result was a refined competency map aligned with Sarawak's strategic goals and operational realities.

The data were thematically analyzed using open and axial coding to identify recurring patterns, language use, and indicators linked to strategic, operational, and tactical competencies. Coding reliability was ensured through inter-rater checks among three independent coders, with consensus built through iterative review. The resulting competency sets were then categorized and structured according to their level of strategic impact. Each competency was rated and prioritized based on current mastery and projected future relevance.

Findings

The competency mapping exercise conducted in this study revealed four critical clusters of functional competencies necessary for enhancing strategic readiness within Sarawak's public utilities and telecommunication governance sectors. These clusters were identified through thematic synthesis of document analysis, focus group discussions (FGDs), and expert panel validation. They reflect the evolving functional roles required to meet the state's developmental and digital transformation goals.

Cluster 1: Digitalization and Data Governance

This cluster encompasses competencies related to digital architecture design, data science, cybersecurity, and enterprise systems integration. Participants highlighted the growing necessity for public sector officers to understand and manage digital platforms, automate

workflows, and safeguard digital assets. With the emergence of the Fourth Industrial Revolution (4IR), proficiency in data-driven decision-making, cloud computing, and interoperability of systems is increasingly vital (World Economic Forum, 2020). However, significant competency gaps were noted in digital literacy and advanced analytics, indicating a pressing need for upskilling in areas such as AI applications, digital ethics, and cybersecurity frameworks (Mergel et al., 2019; OECD, 2020).

Cluster 2: Utility and Infrastructure Planning

This domain includes competencies such as sustainable planning, utility systems design, risk assessment, and infrastructure lifecycle management. Stakeholders emphasized the importance of integrating environmental, social, and technological considerations into utility development projects. As Sarawak expands its green energy agenda and urban infrastructure, officers must master tools for geospatial planning, asset management, and service continuity (Asian Development Bank, 2021). Despite policy alignment, capability shortfalls were observed in long-term scenario planning, project finance, and technical audit expertise, particularly among mid-level planners.

Cluster 3: Telecommunication Innovation

Competencies under this cluster include network expansion strategies, telecommunications R&D, regulatory compliance, and spectrum management. With 5G deployment and rural connectivity as strategic priorities in Sarawak, the need for innovation in telecommunications governance is urgent. Officers are expected to liaise with private sector vendors, assess technology feasibility, and navigate overlapping regulatory frameworks (ITU, 2021). However, discussions revealed gaps in R&D management, cross-agency coordination, and technology adoption readiness, which could hinder efforts to expand digital inclusivity and infrastructure innovation.

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Cluster 4: Policy and Regulatory

This cluster involves competencies in policy formulation, statutory interpretation, regulatory enforcement, and legislative compliance. Officers in this domain are required to bridge the gap between political direction and administrative execution. They must demonstrate competence in stakeholder consultation, policy impact analysis, and legal drafting. Nonetheless, the study found deficits in policy advocacy, interagency negotiation, and public engagement strategies, which are crucial for translating strategic intent into enforceable outcomes (Pollitt & Bouckaert, 2017; UNDP, 2022).

Discussion

The findings of this study underscore the critical need for embedding a forward-looking, competency-based framework within the human resource development strategies of Sarawak's Ministry of Utilities and Telecommunication (MUT). The convergence of digital transformation, rapidly evolving technologies, and rising citizen expectations for efficiency and responsiveness necessitates a workforce equipped with a dynamic blend of technical, strategic, and relational competencies (Mergel, Edelmann, & Haug, 2019; OECD, 2020).

As Sarawak advances its digital economy agenda, competency development must be tailored to the state's distinctive governance context—marked by its semi-autonomous administrative structure, multi-ethnic population, and stark rural-urban development differentials (Sarawak Government, 2018). These unique characteristics demand a localized and culturally responsive approach to public sector capacity-building. For instance, competencies related to stakeholder engagement, community consultation, and localized infrastructure planning are particularly crucial for ensuring equitable service delivery across geographically dispersed and infrastructurally varied regions.

At the same time, aligning competency standards with international frameworks and best practices ensures global benchmarking, cross-jurisdictional learning, and adaptability to

transnational challenges, such as climate change, data security, and regulatory harmonization (UNDP, 2022; World Bank, 2019). The study's identification of competency gaps in areas such as digital literacy, policy advocacy, and evidence-based decision-making further confirms the need for sustained investment in future-ready skills and governance agility (Asian Development Bank, 2021).

Moreover, the interdependence between strategic alignment and policy execution reflects a systems-level understanding of public service performance. Effective service delivery in high-impact sectors—particularly utilities and telecommunications—relies not only on individual capabilities but also on organizational cohesion and inter-agency collaboration (Christensen & Lægreid, 2020). In this regard, competency development should be integrated into broader frameworks of organizational learning, strategic foresight, and cross-sectoral governance, enabling ministries such as MUT to navigate policy complexity and resource constraints more effectively.

Ultimately, cultivating a contextualized, competency-driven workforce can empower the Sarawak Civil Service to bridge service delivery gaps, foster inclusive development, and enhance public trust—thereby contributing to a resilient and future-proof governance ecosystem.

Conclusion

This study presents a comprehensive and context-sensitive roadmap for competency-based workforce development within Sarawak's Ministry of Utilities and Telecommunication. Through the identification of four functional competency clusters—Digitalization and Data Governance, Utility and Infrastructure Planning, Telecommunication Innovation, and Policy and Regulatory Leadership—the research delivers actionable insights into the strategic capacity needs of a public sector facing rapid digitalization, complex policy environments, and infrastructural demands (OECD, 2020; UNDP, 2022).

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The findings reveal that while technical competencies are well recognized, there remain substantial gaps in digital literacy, stakeholder engagement, advocacy strategy, and data-informed policymaking. These gaps pose challenges to efficient service delivery, policy execution, and long-term infrastructure development (Asian Development Bank, 2021; Mergel et al., 2019). The mismatch between existing functional capabilities and emerging governance expectations underscores the urgency of targeted and structured capacity-building interventions.

The proposed competency framework offers more than a diagnostic mechanism. It functions as a strategic enabler for enhancing evidence-based decision-making, aligning human resource development with strategic goals, and supporting adaptive public governance. By proactively addressing functional gaps and preparing for future competency demands, the framework contributes to more sustainable and performance-oriented public sector management (Boyatzis, 2008; Spencer & Spencer, 1993).

To ensure institutionalization and impact, policymakers and senior administrators are encouraged to integrate this competency framework into key government systems and practices, including:

- Human capital planning: aligning recruitment, training, and promotion with competency benchmarks;
- Performance management: incorporating competency metrics into appraisal and evaluation systems;
- Organizational redesign: leveraging competency insights for job structuring and functional realignment;
- Succession planning: using competency data to support leadership pipeline development.

For long-term sustainability, it is recommended that the framework's implementation be supported by:

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- Continuous monitoring and evaluation to track competency development and strategic alignment (Lynn, 1986);
- Iterative reviews to ensure responsiveness to emerging technologies and governance challenges (Creswell & Poth, 2018);
- Inclusive stakeholder engagement, involving inter-agency cooperation, external experts, and community inputs (UNDP, 2022).

Institutionalizing this framework as a core governance instrument will support Sarawak's aspiration to build a world-class civil service—one that is competent, accountable, and future-ready in the governance of public utilities and telecommunications.

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References

Asian Development Bank. (2021). *Public service delivery and digital transformation: Implications for capacity development*. ADB Publishing.

Boyatzis, R. E. (2008). Competencies in the 21st century. *Journal of Management Development, 27*(1), 5–12. https://doi.org/10.1108/02621710810840730

Pegem Journal of Education and Instruction, Vol. 15, No. 4, 2025 (pp. 2531-2546)

Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, *9*(2), 27–40. https://doi.org/10.3316/QRJ0902027

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Christensen, T., & Lægreid, P. (2020). *The COVID-19 crisis and public administration*. Public Organization Review, 20, 1–20. https://doi.org/10.1007/s11115-020-00460-7

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). Sage Publications.

Economic Planning Unit. (2021). *MyDigital: Malaysia Digital Economy Blueprint*. Prime Minister's Department. https://www.mydigital.gov.my

Hsu, C.-C., & Sandford, B. A. (2007). The Delphi technique: Making sense of consensus. *Practical Assessment, Research & Evaluation*, *12*(10), 1–8.

International Energy Agency. (2022). *Digitalisation and energy*. https://www.iea.org/reports/digitalisation-and-energy

International Telecommunication Union (ITU). (2021). *Digital skills insights 2021*. ITU Publications.

Joiner, B., & Josephs, S. (2007). *Leadership agility: Five levels of mastery for anticipating and initiating change*. Jossey-Bass.

JPA (Jabatan Perkhidmatan Awam Malaysia). (2021). *Public Sector Strategic Plan 2021–2025*. Putrajaya: Government of Malaysia.

JPA. (2022). *Laporan Tahunan Perkhidmatan Awam*. Jabatan Perkhidmatan Awam Malaysia.

Lynn, M. R. (1986). Determination and quantification of content validity. *Nursing Research*, *35*(6), 382–386.

MAMPU. (2021). *Public Sector Strategic Plan 2021–2025*. Malaysian Administrative Modernisation and Management Planning Unit.

Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government Information Quarterly, 36*(4), 101385.

Pegem Journal of Education and Instruction, Vol. 15, No. 4, 2025 (pp. 2531-2546)
https://doi.org/10.1016/j.giq.2019.06.002

OECD. (2022). *Public Employment and Management 2022: Building Resilient Public Services*. OECD Publishing. https://doi.org/10.1787/75f79012-en

OECD. (2020). *Building a resilient public sector*. OECD Public Governance Reviews.

OECD. (2022). *Building a Resilient Public Service: New Approaches for Human Resource Management*. OECD Publishing. https://doi.org/10.1787/9789264735988-en

Patton, M. Q. (2011). *Developmental evaluation: Applying complexity concepts to enhance innovation and use*. Guilford Press.

PEMANDU. (2020). *Government Transformation Programme (GTP) Review: Enhancing Delivery in Public Service*. Performance Management and Delivery Unit.

PEMANDU. (2017). *Annual Report: Government Transformation Programme (GTP) Review*. Performance Management and Delivery Unit.

Pollitt, C., & Bouckaert, G. (2017). *Public Management Reform: A Comparative Analysis – Into the Age of Austerity* (4th ed.). Oxford University Press.

Sarawak Government. (2018). *Sarawak Digital Economy Strategy 2018–2022*. Kuching: Chief Minister's Department.

Sarawak Government. (2021). *Post COVID-19 Development Strategy 2030 (PCDS 2030)*. Ministry of Finance and Economic Planning, Sarawak.

Spencer, L. M., & Spencer, S. M. (1993). *Competence at work: Models for superior performance*. John Wiley & Sons.

UNDP. (2022). *Future of Work and the Public Sector in ASEAN: Competency Frameworks for Public Service Innovation*. United Nations Development Programme.
https://doi.org/10.1016/j.giq.2019.06.002

UNDESA. (2021). *Compendium of Digital Government Initiatives in Response to the COVID-19 Pandemic*. United Nations Department of Economic and Social Affairs. https://publicadministration.un.org

UNDESA. (2021). *Compendium of Digital Government Initiatives in Response to the COVID-19*

Pegem Journal of Education and Instruction, Vol. 15, No. 4, 2025 (pp. 2531-2546)

Pandemic. United Nations Department of Economic and Social Affairs. https://publicadministration.un.org

UNDP. (2022). *Future of Work and the Public Sector in ASEAN: Competency Frameworks for Public Service Innovation*. United Nations Development Programme.

Van Der Wal, Z. (2020). *Being a public manager in times of crisis: The art of managing stakeholders, political masters, and collaborative networks*. Public Management Review, 22(7), 1–9.

World Bank. (2019). *Doing more with less: Smarter public sector for efficiency and equity*. World Bank Group.

World Bank. (2022). *Reshaping Public Sector Capability in the Post-Pandemic Era: Malaysia Country Report*. World Bank Publications.