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Political Economy: Malaysia's digital economy transformation, challenges and opportunities in the labour market

Irwanmazwan Ibrahim*, Yarina Ahmad
**Corresponding Author*

Universiti Teknologi MARA, Shah Alam, Malaysia

tsirwanmazwanibrahimphd@gmail.com, yarina@uitm.edu.my
Tel: +60 0133867768

Abstract
This research examines the relationship between the labour market demand and the government's digitalisation policy, strategy, and implementation. PEA of the digital economy's progress, challenges, and potential for the digital labour market is conducted. This study examines the most effective methods for multiplier effects in key areas, including expanding or modifying the domestic market, enhancing or mitigating employability in Malaysia's digital economy context, and stimulating skills development in line with the workforce's needs and industry demands, in relation to the dynamics of digitization. A textual analysis identifies the impact of optimising the workforce's potential in the digital economy.

Keywords: political economy; digital economy; labour market; digital literacy

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1.0 Introduction

The purpose of the political economy (PE) analysis is to embed development interventions within an understanding of the dominant, intertwined political-economic processes that permeate virtually every aspect of modern life, including individuals and society. This analysis focuses on the transformation, disruption, and opportunities within the labour market (LM) driven by the digital economy (DE), which has a significant influence on the nation's development outcomes. This paper critically analyses how the interaction between economic, social, and technological drivers, and Malaysia's PE, shaped by the history of political coalitions and institutional legacy, determines the direction, effectiveness, and level of inclusiveness of digital transformation and its implications for the labour market.

PE involves understanding (1) the power and authority of social groups, their interests, and the incentives that motivate them in promoting outcomes, (2) the role that formal and informal institutions play in the allocation of scarce resources, and (3) the influence that values and ideas such as culture, ideologies, and religion have in shaping those outcomes.

The Internet of Things (IoT), blockchains, the metaverse, artificial intelligence (AI), autonomous vehicles (AVs), robotics, and various technologies are transforming the way individuals live, work, and communicate in the twenty-first century. The 4IR disrupts conventional industries, which are characterised by centralised production, a large number of workers, enormous enterprises, and transforms them into digitalised industries. This transformation leads to a shift in the market structure and its impact on the LM. Digitalisation facilitates more decentralised, knowledge-based production. It also enables the development of technologically advanced services. However, not all potentially automated tasks will be mechanised for economic, legal, and social reasons (Walwei, 2016). Notably, this new economy

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"has gone largely unacknowledged in the statistics, principally because the digital technology economy of the 21st century is considerably different from prior inventions that extensively affected the labour market" (Degryse, 2016).

1.1 Problem statement

In identifying research gaps, this analysis identifies areas that can be acknowledged through two perspectives: (1) inherent issues and (2) improvement influences prevailing circumstances in research on digital economy transformation, disruption, and opportunities in LM. This paper discusses that Malaysia's delayed progress influences the lack of competitiveness of the local labour force in digital literacy (DL) in developing its DE. This continuity results in digital incompetence and skill deficiencies of the labour workforce in the 4IR era. Furthermore, since the country's legislative framework strategy for the 4IR and digital economy remains in its infancy, full implementation across all levels of society faces significant challenges, leading to a considerable digital gap between rural and urban areas. Malaysia's major cities are expanding, providing numerous new employment opportunities in the digital economy and e-commerce sectors. However, the jobs available are often inconsistent, uncertain, and do not provide passive income within the existing social safety net.

The digital divide adversely affects the competitiveness of rural populations due to infrastructure limitations in remote areas, particularly in terms of flexibility, competence, education, social development, and economic prospects. Infrastructure issues frequently restrict access in rural regions and even in Malaysia's major cities. Such problems should not occur in the digital domain, which demands a robust infrastructure to boost socioeconomic competitiveness. As of November 2021, Malaysia's average fixed broadband internet speed is 114.08 Mbps, ranking the country 45th globally. Meanwhile, the average mobile connection speed increased to 35.06 Mbps, ranking Malaysia 76th worldwide.

Infrastructure readiness is crucial in shaping the development of a robust socioeconomic model and enhancing the pace of innovation and interconnectivity. High connectivity and an integrated network serve to reduce data centre complexity and enhance scalability by integrating elements of infrastructure. This integration requires innovation as a key differentiator to accelerate service distribution, high-performance data management, and optimise industrial operations. In Malaysia, connectivity is currently considered the third most important utility and a vital economic necessity.

1.2 Research objectives

Dudovskiy (2022) explains that the most significant component of the thesis is to formulate acceptable research objectives to determine the scope, depth, and overall direction of the study. The study approach consolidates PE analysis of the digital transformation of the economy, challenges and opportunities in the digital LM, with the following objectives: (1) To analyse Malaysia's digital economy transformation, disruption, and LM opportunities, (2) To evaluate the possible constraints and barriers in Malaysia's digital economy and the LM, and (3) To review the important components of the effective processes of constructing a future-ready workforce and creating an inclusive digital society.

1.3 Research questions

The research question, as defined by Monash University (2022), specifies the specific issue or problem the research will address. Priorities and criteria differ depending on the discipline. Three research questions are devised to support the direction of this study. The research questions are (1) What are the methods to analyse Malaysia's digital economy transformation, disruption, and LM opportunities? (2) What are the potential limitations and impediments to employment in Malaysia's digital economy? (3) What are the essential components of the effective processes of constructing a future-ready workforce and creating an inclusive digital society?

1.4 Research significance

This study offers the untapped areas of findings in digital economy transformation, opportunities, and the disruption of LMs. The results of this study are significant for the existing implementation and interventions aimed at improving digital innovation. Adopting a positive perspective, this study offers insights into understanding digital economic systems and political processes. PE forms various efforts to identify synergies and address gaps within the study's context.

A significant contribution to academic research is demonstrated through an association between political decisions and policies and the socio-economic outcomes of the LM, thus making a notable contribution to the body of knowledge in the analysis of policies and practices.

1.5 Scope of research

This analysis examines and reviews the transformation, disruption, and opportunities within LMs driven by the digital economy from a PEA perspective. It seeks to analyse and explore the interrelations and interventions of governmental regulations, policies, investments, and activities that contribute to the development of digitalisation in the job market. Furthermore, analysis was conducted based on the DE transformation, disruption, and opportunities frameworks of the LMs.

2.0 Literature Review

As Malaysia's digitisation may significantly influence the industrial and market processes, considerable ramifications for the economic and LMs are imperative. Emerging technologies have the potential to bring substantial economic benefits, but they require adjustments that entail disruptive changes and necessitate essential policies for the future job market.

On a domestic historical dimension, the Multimedia Super Corridor (MSC) was regarded as the heart of Malaysia's Vision 2020 in the mid-1990s. Malaysia is a major player in implementing policies and approaches that support the country's digitalisation agendas. This effort is based on Malaysia's pioneer tech hub, the MSC; the gigantic objective of the digitalisation of Cyberjaya in 1997 as the hub of 4IR technology, as a response to global climate change, and to a new economic dimension that encourages the growth of E-Commerce by providing the latest platforms for Small and Medium Enterprises (SMEs) and businesses.

Malaysia requires a dynamic environment to facilitate a sustainable digital economic ecosystem. These changes necessitate comprehensive measures in practice, adaptation, risk impact analysis, and socioeconomic readiness for a digital ecosystem response, including regulations, public finance infrastructure, agility, skills, upskilling, and employability preparedness. Additionally, Malaysia has specialised in more complex activities while outsourcing employment and labour-intensive sectors to other nations. Electrical and Electronics (E&E) exports accounted for approximately 38 percent of Malaysia's total exports in 2018, providing nearly 800,000 jobs. Furthermore, long-term factors influence LMs' performance, whereby demographic changes affect the size and composition of the labour force. Globalisation drives nations to specialise in specific products and services, which has significant implications for skill formation and development.

Technological advancement is one of the primary factors contributing to the economic growth and performance of Malaysia's e-commerce establishments (DE) in the third quarter of 2021, which totaled RM 279.0 billion, representing a 17.1 percent year-over-year increase. It continued a strong trend in terms of quarter-on-quarter growth, at 4.3%. E-commerce revenue reached RM 801.2 billion from January to September, representing a 23.1 percent year-over-year increase (DOSM, 2021). Furthermore, most of the measured development in the DE has been centred in five states: Selangor, Kuala Lumpur, Putrajaya, Malacca, and Penang. Unless the appropriate regulations are implemented, these patterns risk entrenching existing disparities and limiting the DE's capacity to foster broad-based progress. Moreover, the infrastructure development and connectivity incentives on a massive scale are the most consequential arrangements in building a digital society and fostering entrepreneurship.

To maximise the value and minimise the risks of the rising DE, the government must eliminate barriers to the digital divide, particularly by enhancing infrastructure, access to low-cost, dependable, efficient Internet, and encouraging entrepreneurship, particularly among SMEs, start-ups, and businesses. The government must ensure that sufficient funds are generated without imposing burdens on local businesses, thereby effectively supporting the infrastructural, financial, and educational initiatives that have fueled the expansion of the DE. The current measure of national economic production, GDP, inadequately accounts for the economic contributions of the Internet and struggles to accurately reflect the actual value of technology-enabled services within a broader context.

This analysis presents a PE framework that argues that political solutions and institutional legacies mediate Malaysia's digital transformation and LM outcomes through fragmented governance, uneven resource distribution, and skills mismatches, and aims to fill a literature gap by explaining why digital implementation challenges persist beyond technical and policy descriptive approaches. A key literature and theoretical foundations that guides this PE is presented in Table 1.

Table 1: Key Literature and Theoretical Foundations

Author(s)/Source	Key Focus	Relevance to This Study
World Bank (2025)	Public sector digital transformation (GovTech) and productivity in Malaysia.	Provides current analysis of institutional and skill-based challenges in implementing digital policy.
Tech for Good Institute (2025)	Youth perspectives on digital inclusion and workforce readiness in Malaysia.	Offers ground-level insights into the social and educational dimensions of the digital divide.
Doner (2005)	Coalitional politics and technological upgrading in Malaysia's political economy.	Provides the foundational theoretical lens for analysing how political interests shape economic and technological outcomes.
EVN Report (2019)	Labour market and education challenges of the 4IR.	Contextualizes Malaysia's experience within global 4IR trends affecting skills and employment.

3.0 Methodology

This paper employs qualitative text analysis, based on Critical Policy Discourse Analysis, to examine national policy documents, reports, and recent academic literature (2018–2025). The analysis is conducted iteratively through inductive–deductive coding and source triangulation, revealing the power, institutions, and ideas that frame digital transformation problems, solutions, and policy gaps in implementation by examining their content, themes, and discursive strategies.

3.1 Research design

The research design, which involves triangulating these sources, enables a systematic thematic decomposition of dominant narratives and competing discourses in the digital transformation of Malaysia. This approach critically reveals how discursive formations in the text shape policy responses to the challenges of the digital LMs (Fairclough, 2013). Primary data sources consist of three strategic texts:

1. National Policy Documents include: (i) National E-Commerce Plan (SMEs digital integration guide), (ii) Industry Transformation Plan 4.0 (4IR technology response framework), and (iii) MyDigital Malaysia (2021–2030) (holistic digital economy strategy). These documents represent the government's official discourse on digital vision, investment priorities, and technology governance paradigm.
2. Institutional Reports comprises: (i) World Bank Analysis (2018) on Malaysia's digital readiness, (ii) Official statistics from the DOSM (2021) on ICT penetration, and (iii) Industry white papers by PIKOM (Malaysia Computer and Multimedia Industry Association) and

MDEC (Malaysia Digital Economy Corporation). This secondary material provides empirical evidence of performance and implementation gaps in DE.

3. Academic Works; include a collection of highly reputable journal articles and scientific monographs (1990–2023) that discuss the evolution of the DE and the transformation of the LMs. This literature serves as a theoretical lens to contextualise findings within existing academic debates on digital neoliberalism, skills gaps, and the political ecology of digital innovation.

4.0 Findings

4.1 Lack of infrastructure and digital literacy

The study's results reveal a digital divide and structural asymmetry in digital access, with 62% of rural enterprises having Internet access compared to 99.9% in Putrajaya (DOSM, 2021). The average broadband speed of 114.08 Mbps (45th Global Rank) fails to penetrate 40% of rural areas (MyDigital, 2021), indicating a failure of the geo-digital diffusion model. The findings of a digital literacy deficit and competence gaps reflect a systemic human capacity crisis, influencing the LMs. Specifically, 73% of Malaysian SMEs lack data and AI-related experts, while 68% of formal sector workers fail basic digital literacy tests (World Bank, 2018). This phenomenon reflects a misalignment between the education ecosystem and the requirements of Industry 4.0. Three-dimensional deficits are identified, which are (i) Functional literacy, (ii) Technical competence, and (iii) Strategic expertise. This competence gap threatens Malaysia's competitiveness in achieving the status of a high-income DE nation.

4.2 Policy fragmentation and labour market effects

Formation from policy disruptions that influence the LMs, including aspects of: (i) Job polarisation: The growth of e-commerce (RM279 billion, Q3 2021) creates "platform" jobs (e.g., e-hailing, delivery), but 89% are temporary without social protection (MDEC, 2022). (ii) Corporate impact: Capital A Berhad automates 35% of cargo operations (2022), reducing the need for "routine" jobs, but invests RM50 million in an AI upskilling program for 5,000 employees (Annual Report, 2023). The study findings are presented systematically, effectively linking the empirical evidence to the research objectives. The data presented in tabular form synthesizes the primary textual evidence, thus allowing for a more precise and focused elaboration of the identified challenges and impacts.

Table 2: Synthesis of Key Findings on DE Challenges

Research Objective	Key Finding	Illustrative Evidence from Textual Analysis
RO1	Growth is geographically and sectoral concentrated, limiting inclusive development.	E-commerce revenue reached RM 279.0 billion in Q3 2021, but development is cantered in five advanced states (Selangor, KL). Digital economy contributed 23% of GDP in 2022, driven largely by large enterprises and tech giants investing in data centres.
RO2	A tripartite digital literacy deficit severely constrains human capital readiness.	*1) Functional Literacy:* 68% of formal sector workers lacked basic digital skills (World Bank, 2018). *2) Technical Competence:* 73% of SMEs lacked data/AI experts. *3) Strategic Expertise:* Shortages in managing digital transformation are widely noted in policy critiques.
RO2	Infrastructure access remains unequal, creating a foundational digital divide.	While national fixed broadband speed is 114.08 Mbps, only 62% of rural enterprises have internet access versus 99.9% in Putrajaya. MDEC notes 92% of urban households are connected vs. 68% in rural areas.
RO3	The labour market is polarizing, with a rise in precarious "gig" work alongside high-skilled roles.	Platform jobs (e-hailing, delivery) constitute 89% of new e-commerce roles and are largely temporary. Conversely, high-value jobs in AI, cybersecurity, and data science are in critical shortage.
RO3	Policy implementation is fragmented across multiple agencies, diluting impact.	Digital governance is split between the Ministry of Digital, Ministry of Communications, MOSTI, and the Prime Minister's Office, leading to coordination challenges.

5.0 Discussions

The Malaysian case indicates that in the context of a middle-income, multi-ethnic democracy, effective and inclusive digital transformation in Malaysia and developing regions demands a PE approach that goes beyond mere technology investment by addressing the constraints of basic political organization, strengthening institutional capacity, developing human capital, and managing vested interests to build broad public support.

5.1 The political economy dilemma of digital transformation

The analysis revealed three PE tensions associated with the DE in Malaysia. First, resource allocation of digital investments is concentrated in urban corridors (e.g., MSC, Cyberjaya), bridging socioeconomic gaps (Leu & Masri, 2019). Second, labour governance faces regulatory challenges in protecting "gig economy" workers under the 1955 Employment Act (Rahim et al., 2021). Third, actor conflict arises from the resistance of major technology companies (e.g., Grab, Shopee) to digital tax regulations, which reduces government revenues for infrastructure (Degryse, 2016).

5.2 Opportunities for reshaping the labour market

Digital innovation leads to productivity transformation; this mechanism involves the creation of high-value jobs in areas such as semiconductors, electric vehicles (EVs), and ICT professionals, while reducing reliance on cheap labour-intensive models. However, this potential transformation mechanism depends on overcoming the productivity paradox. Even as technology investment increases, its impact is limited without a concerted effort to enhance rural digital infrastructure and align educational curricula with industry requirements. By creating an inclusive and economically viable model for the platform, MDEC's eRezeki represents a framework for reshaping the LMs, training 120,000 rural workers (2020–2023) in e-commerce and increasing participants' income by 34% (PIKOM, 2022).

This initiative leverages crowdsourcing platforms to reduce information asymmetry, geographical barriers, and division, while integrating the B40 group into the digital value chain through two main mechanisms. First, decentralisation of employment opportunities through eRezeki Centres and eRezeki Representatives in 22 locations, providing access to digital tools and cyberguru training. Second, the employment paradigm shifts towards the gig economy, which includes 3.1 million self-employed workers (2024), reflecting the flexibility of the post-pandemic LMs. The effectiveness of this model lies in its alignment with the Shared Prosperity Strategy (WKB 2030) and the UN Sustainable Development Goals (SDGs), particularly SDG 1 (No Poverty) and SDG 8 (Decent Work and Economic Growth).

6.0 Conclusion and Recommendation

Disparity in infrastructure, a digital divide, literacy deficit, and an outdated regulatory framework continue to hinder the transformation of Malaysia's DE. While e-commerce and automation drive growth, the benefits are not inclusive without strategic political intervention. The policy recommendations in this research paper involve infrastructure development by increasing rural fibre optic investment through public-private partnerships (PPP), targeting a minimum internet speed of 50 Mbps in all regions by 2030.

Education reform will be implemented by integrating STEM curriculum with data literacy at the school level, and tax incentives for corporate reskilling and upskilling programs (e.g., Singapore's upskilling subsidy model). Aspects of the social safety net can be expanded by amending the Labour Act 1955 to protect platform workers (e.g., sale-based direct deduction, scheduled pensions, compulsory health insurance), promoting basic harmonization, and coordinating MyDigital with the 12th Malaysia Plan to avoid duplication of resources. Further studies need to assess the effectiveness of digital incentives for SMEs and the impact of AI automation on job quality.

Consequently, future research is recommended to employ a mixed-methods approach by combining this PE framework with quantitative surveys at the firm level regarding the level of digital adoption, as well as ethnographic studies of gig workers and required to assess the causal impact of specific digital incentives on SME productivity, as well as to assess the quality of employment and the level of social protection in new platform-based jobs created by the DE.

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Paper Contribution to the Related Field of Study

This paper presents a comprehensive political economy analysis of the challenges faced by the Malaysian labour market in adapting to digital transformation. The paper identifies and describes the political and institutional roots of persistent issues, including the digital divide, skills mismatch, and policy fragmentation. In doing so, the study provides policymakers and scholars with a diagnostic framework that connects surface-level symptoms to systemic causes, thereby emphasizing that sustainable and inclusive DE transformation requires addressing not only technological gaps but also the deeply embedded PE constraints within existing structures.

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