

DIGITAL DIVIDE, TECHNOLOGY AND MARKET INEQUALITY

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Abstract

Digital technology has become a central driver of economic activity, reshaping markets, employment patterns, and modes of participation in the global economy. Although technological progress is often associated with efficiency, innovation, and economic growth, its benefits are not distributed equally across society. The unequal access to digital infrastructure, digital skills, and technological resources has resulted in a persistent digital divide. This divide plays a significant role in shaping market inequality by determining who can effectively participate in digital markets and who remains excluded.

This paper examines the impact of the digital divide on market inequality by analysing how technological disparities influence economic opportunities and market participation. Individuals and businesses with access to advanced technology are better positioned to benefit from digital platforms, online marketplaces, and data-driven decision-making. In contrast, those lacking access or digital literacy face barriers to entry, reduced competitiveness, and limited access to information and markets. As a result, technology can reinforce existing economic inequalities rather than reduce them.

The study further explores how digital technologies contribute to the concentration of market power. Large firms with strong technological capabilities are able to dominate digital markets through automation, platform control, and data accumulation, while small enterprises and informal sector participants struggle to compete. These dynamics are particularly evident in developing economies, where infrastructural gaps, affordability issues, and regulatory challenges deepen market inequality.

By adopting a socio-economic and policy-oriented approach, this paper argues that technology is not inherently inclusive. Its impact on market equality depends on the surrounding legal, regulatory, and institutional frameworks. The paper concludes that addressing the digital divide is essential for ensuring fair competition and inclusive economic growth. Targeted investment in digital infrastructure, education, and regulatory safeguards is necessary to ensure that technological advancement contributes to reducing market inequality rather than exacerbating it.

Keywords–Digital Divide; Technology; Market Inequality; Digital Economy; Access to Technology; Competition; Economic Inclusion; Socio-Economic Disparities

1. Introduction

In the contemporary global economy, digital technology has become a central force shaping markets, economic relationships, and social structures. The integration of digital tools into production, distribution, and consumption has

transformed traditional market systems into technology-driven ecosystems. E-commerce platforms, digital payment systems, artificial intelligence, automation, and data analytics now influence how businesses operate and how consumers engage with markets. While

technological progress is often associated with innovation, efficiency, and economic growth, it has also created new forms of inequality rooted in unequal access to digital resources.

The concept of the digital divide captures the gap between individuals, communities, and businesses that have access to digital technology and those that do not. This divide is not limited to internet connectivity alone; it also includes disparities in digital literacy, affordability, quality of access, and the capacity to use technology productively. As markets increasingly depend on digital infrastructure, those excluded from technology face structural disadvantages in economic participation. Consequently, the digital divide has become a significant contributor to market inequality.

Market inequality refers to the unequal distribution of economic opportunities, income, market power, and access among participants within a market system. In a digital economy, market inequality is shaped not only by capital and labour but also by access to data, technological capabilities, and digital platforms. Firms and individuals with advanced digital resources are able to dominate markets, reduce costs, and expand rapidly, while digitally excluded groups struggle to compete or even participate.

This paper examines the relationship between the digital divide, technological development, and market inequality. It argues that technology is not a neutral force and that, without inclusive governance and regulation, it tends to reinforce existing socio-economic disparities. By analysing the impact of the digital divide on labour markets, entrepreneurship, competition, and consumer participation, this paper highlights how digital exclusion deepens market inequality. The study also emphasises the role of law, policy, and public investment in ensuring that technological progress contributes to equitable and inclusive market development.

2. Conceptualising the Digital Divide

The digital divide is a multidimensional concept that has evolved alongside technological advancement. In its early formulation, the divide was understood primarily as a gap in access to computers and internet connectivity. Over time, scholars and policymakers have recognised that access alone does not ensure meaningful participation in the digital economy. As a result, the digital divide is now understood as encompassing multiple layers of inequality.²³¹⁵

The first level of the digital divide relates to physical access to digital infrastructure, such as broadband connectivity, smartphones, computers, and reliable electricity. Economic status plays a decisive role in determining access, as digital technologies often remain unaffordable for low-income households. Geographic factors also contribute significantly, with rural and remote areas experiencing limited infrastructure development compared to urban centres.²³¹⁶

The second level of the digital divide concerns digital skills and literacy. Individuals may have access to technology but lack the knowledge required to use digital tools effectively for education, employment, or entrepreneurship. Educational inequality directly influences digital capability, creating a situation where technology benefits those who are already advantaged.²³¹⁷

The third level of the digital divide focuses on outcomes. This level examines how different groups derive varying economic and social benefits from technology use. While some users leverage digital tools to increase income, productivity, and market reach, others experience minimal gains. This outcome-based divide has direct implications for market

²³¹⁵ Mark Warschauer, *Technology and Social Inclusion: Rethinking the Digital Divide* 8–10 (MIT Press 2003)

²³¹⁶ Organisation for Economic Co-operation and Development (OECD), *Bridging the Digital Divide: Issues and Policies in OECD Countries* 9–12 (OECD Publ'g 2001)

²³¹⁷ Paul DiMaggio & Eszter Hargittai, *From the "Digital Divide" to "Digital Inequality": Studying Internet Use as Penetration Increases*, 19 *Princeton Ctr. for Arts & Cultural Pol'y Stud.* 4, 7–9 (2001)

inequality, as it determines who benefits from digital transformation.²³¹⁸

Thus, the digital divide is not merely a technological issue but a structural socio-economic problem that shapes participation in digital markets and the distribution of economic power

3. Technology and the Transformation of Markets

Digital technology has fundamentally altered the structure and functioning of markets. By reducing transaction costs, enabling instant communication, and expanding market reach, technology has created new opportunities for economic activity. Online marketplaces allow businesses to reach global consumers, while digital payment systems facilitate faster and more efficient transactions. Automation and artificial intelligence enhance productivity by streamlining production and decision-making processes.²³¹⁹

However, the benefits of these transformations are unevenly distributed. Firms with access to advanced technology can scale operations rapidly, optimise supply chains, and personalise consumer experiences through data analytics. These advantages allow technologically advanced firms to dominate markets and outcompete smaller or less digitally equipped businesses.

Digital platforms have also redefined market relationships by acting as intermediaries between producers and consumers. Platform-based markets concentrate power in the hands of platform owners, who control access, pricing mechanisms, and data flows. Businesses operating on these platforms often depend heavily on algorithms that determine visibility and consumer engagement. This dependency

creates unequal bargaining power and reinforces market inequality.²³²⁰

Therefore, while technology has expanded market possibilities, it has also introduced new hierarchies based on digital capability, contributing to unequal market outcomes.

4. Digital Divide and Labour Market Inequality

The impact of digital technology on labour markets is one of the most visible manifestations of market inequality. Automation, artificial intelligence, and digital platforms have reshaped employment patterns, skill requirements, and income distribution. Workers with digital skills benefit from higher wages, job mobility, and access to remote and global employment opportunities. In contrast, workers lacking digital skills face job displacement, underemployment, and income insecurity.²³²¹

Automation disproportionately affects routine and manual occupations, which are often held by economically vulnerable populations. Without access to reskilling or digital education, displaced workers struggle to adapt to changing labour market demands. This results in widening income gaps between skilled and unskilled workers.

The rise of the gig economy further illustrates digital labour inequality. Digital platforms provide flexible employment opportunities but often lack job security, social protection, and collective bargaining mechanisms. While digitally connected individuals can access these opportunities, those excluded from technology are entirely left out of emerging labour markets. This creates a dual labour market divided along technological lines.²³²²

Thus, the digital divide contributes to labour market stratification, where access to technology determines employment quality,

²³¹⁸ Alexander J.A.M. van Deursen & Jan A.G.M. van Dijk, The Digital Divide Shifts to Differences in Usage, 34 *New Media & Soc'y* 507, 511–14 (2014)

²³¹⁹ World Economic Forum, The Future of Jobs Report 2020 12–15 (2020)

²³²⁰ Shoshana Zuboff, The Age of Surveillance Capitalism 75–79 (PublicAffairs 2019)

²³²¹ David H. Autor, Why Are There Still So Many Jobs? The History and Future of Workplace Automation, 29 *J. Econ. Persp.* 3, 6–10 (2015)

²³²² International Labour Organization (ILO), World Employment and Social Outlook 2021: The Role of Digital Labour Platforms in Transforming the World of Work 52–57 (2021)

income stability, and long-term economic security.

5. Entrepreneurship, Innovation, and Small Businesses

Digital technology has the potential to democratise entrepreneurship by lowering entry barriers and enabling innovation. Online platforms allow entrepreneurs to market products, access customers, and manage operations with minimal physical infrastructure. Digital tools also facilitate access to information, networking, and business development resources.²³²³

However, the benefits of digital entrepreneurship are not evenly distributed. Entrepreneurs lacking digital literacy, capital for technology adoption, or reliable internet connectivity face significant challenges in establishing and sustaining businesses. Small and medium enterprises (SMEs), particularly in developing economies, often struggle to adopt digital tools due to cost constraints and lack of technical support.

Large corporations, with greater financial and technological resources, are able to invest in automation, data analytics, and platform-based sales strategies. This enables them to capture larger market shares and marginalise smaller competitors. As a result, market concentration increases, reducing diversity and competition.²³²⁴

The digital divide also affects access to finance. Many financial services rely on digital platforms and data-driven credit assessment models. Entrepreneurs without digital footprints or access to online financial systems are excluded from formal credit markets, reinforcing economic inequality and limiting business growth.

6. Market Power, Data, and Digital Platforms

In digital markets, data has emerged as a critical economic resource. Firms that collect and analyse large volumes of data gain significant competitive advantages, including improved decision-making, targeted marketing, and predictive capabilities. Data-driven dominance often leads to market concentration and reduced competition.²³²⁵

Digital platforms accumulate vast amounts of user data, allowing them to influence consumer behaviour, pricing strategies, and market trends. Smaller firms and new entrants lack access to comparable data, making it difficult to compete on equal terms. This creates entry barriers and reinforces unequal market structures.²³²⁶

The digital divide exacerbates these inequalities by excluding certain populations from data-driven markets. Consumers without digital access are unable to benefit from competitive pricing, personalised services, or market transparency. Similarly, businesses that are digitally excluded cannot generate data necessary for market participation.

Without regulatory oversight, data concentration and platform dominance risk entrenching market inequality and undermining fair competition.

7. Digital Divide and Inequality in Developing Economies

The effects of the digital divide on market inequality are particularly pronounced in developing economies. Limited infrastructure, high costs of connectivity, and educational disparities restrict access to digital technology. Rural populations, women, and informal sector workers are disproportionately affected by digital exclusion.

In many developing countries, markets are increasingly digitised through online services,

²³²³ Organisation for Economic Co-operation and Development (OECD), *Entrepreneurship at a Glance 2017* 18–21 (OECD Publ'g 2017).

²³²⁴ Jonathan B. Baker, *Market Power in the U.S. Economy Today*, 17 Wash. Ctr. for Equitable Growth 1, 6–9 (2017)

²³²⁵ Maurice E. Stucke & Allen P. Grunes, *Big Data and Competition Policy* 45–49 (Oxford Univ. Press 2016)

²³²⁶ European Commission, *Competition Policy for the Digital Era* 28–32 (2019)

digital payments, and e-governance systems. While these initiatives aim to improve efficiency, they often exclude populations without digital access or literacy. As a result, digitalisation can unintentionally marginalise vulnerable groups and limit their participation in economic activities.²³²⁷

Global digital markets also favour firms from technologically advanced economies. Multinational corporations with access to capital, technology, and global platforms dominate international markets, making it difficult for developing-country businesses to compete. This reinforces global market inequality and economic dependence.

Addressing the digital divide in developing economies is therefore essential for achieving inclusive growth and reducing market inequality.

8. Role of Law, Regulation, and Public Policy

Technology does not operate in a vacuum; its impact on markets is shaped by legal and regulatory frameworks. Effective governance is essential to ensure that digital transformation promotes fairness and inclusion rather than inequality.²³²⁸

Competition law plays a critical role in addressing platform dominance, data monopolisation, and anti-competitive practices. Regulatory oversight can prevent abuse of market power and promote fair competition. Labour laws must also adapt to protect workers in digital economies by ensuring fair wages, job security, and social protection.²³²⁹

Data protection and privacy regulations are essential for preventing exploitation and ensuring equitable use of digital resources. Public investment in digital infrastructure,

education, and skill development is crucial for bridging the digital divide.²³³⁰

Inclusive policy design ensures that technological progress benefits all segments of society and contributes to equitable market development.

9. Conclusion

The relationship between the digital divide, technological advancement, and market inequality is neither linear nor incidental; rather, it is deeply structural and shaped by broader socio-economic and legal contexts. While digital technologies have undeniably enhanced efficiency, innovation, and global connectivity, their benefits remain unevenly distributed. This unevenness has transformed access to technology, digital literacy, and data into critical determinants of economic participation and market power. Consequently, technology has emerged not merely as a neutral tool of progress but as a factor capable of reproducing and intensifying existing inequalities within market systems.

This study has demonstrated that the digital divide significantly influences multiple dimensions of market functioning, including labour markets, entrepreneurship, competition, and consumer participation. In labour markets, digital skills increasingly determine employability, wage levels, and job security, thereby marginalising workers lacking access to education and technological resources. Similarly, in the entrepreneurial sphere, digital platforms and data-driven business models favour firms with advanced technological capacity, limiting market entry for small enterprises and informal sector participants. These dynamics contribute to market concentration, reinforce asymmetries of power, and weaken competitive neutrality.

The impact of digital exclusion is particularly pronounced in developing economies, where infrastructural limitations, affordability

²³²⁷ Organisation for Economic Co-operation and Development (OECD), *Going Digital in Developing Countries* 41–45 (OECD Publ'g 2021)

²³²⁸ Organisation for Economic Co-operation and Development (OECD), *Digital Transformation and Public Policy: The Path Forward* 9–13 (OECD Publ'g 2020)

²³²⁹ International Labour Organization (ILO), *Work for a Brighter Future: Global Commission on the Future of Work* 41–45 (2019)

²³³⁰ United Nations, *The Role of Digital Government in Sustainable Development* 19–24 (UN Dep't of Econ. & Soc. Affs. 2020)

constraints, and educational disparities restrict meaningful participation in digitised markets. Marginalised groups—such as rural populations, women, elderly individuals, and informal workers—face compounded disadvantages due to limited digital access and skills. As markets increasingly rely on online platforms, digital payments, and algorithmic decision-making, exclusion from digital systems translates directly into economic exclusion. Thus, market inequality in the digital era cannot be understood solely through traditional economic indicators but must also be examined through the lens of technological access and governance.

The paper further underscores the crucial role of law and regulation in shaping the outcomes of technological transformation. Markets do not operate in isolation from legal frameworks; rather, regulatory choices determine whether digitalisation fosters inclusivity or entrenches inequality. Competition law plays a vital role in preventing excessive market concentration and addressing the dominance of digital platforms that control data and network effects. Labour law must evolve to protect workers in platform-based and gig economies by ensuring fair wages, social security, and decent working conditions. Likewise, robust data protection and privacy regimes are essential to prevent the exploitation of personal data and to ensure equitable participation in data-driven markets.

Bridging the digital divide is therefore not merely a technological challenge but a policy and governance imperative. Public investment in digital infrastructure, affordable internet access, and digital literacy programmes is essential for expanding participation in modern markets. Equally important is the development of inclusive regulatory frameworks that balance innovation with social justice and economic equity. Policies that promote universal access, skill development, and fair competition can transform digital technology into a catalyst for inclusive growth rather than a source of structural inequality.

In conclusion, an inclusive digital economy is both a social necessity and a foundational requirement for sustainable market development. Addressing the digital divide is essential for ensuring that technological progress aligns with principles of fairness, equity, and inclusive growth. Without deliberate and coordinated intervention, digital markets risk reinforcing existing hierarchies of power and wealth. Conversely, with inclusive governance and equitable regulation, digital technology can serve as a powerful instrument for reducing market inequality and promoting long-term economic and social development.

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