Short-Term Digital Platform Work's Long-Term Impact on Livelihoods: A Global South Literature Review and an Analysis Framework

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Abstract

This review paper explores the interplay between digital platform work and local development, particularly emphasizing the long-term impact of platform-mediated digital work on the Global South workers' livelihood. The study delves into how the variation in local contextual factors changes the livelihood outcomes of platform work in different Global South countries. The study focuses on three key areas endogenous to local development, i.e., access to decent work, employability skills development, and workers' resilience within the ever-changing job market. The findings are utilized to refine a conception of the Sustainable Livelihood Framework, providing a tool that broadens the scope of platform work analysis to account for the diverse structural and contextual factors impacting workers' livelihoods in different regions. This study extends CI literature by highlighting the importance of digital inclusion and access to technology as critical factors for equitable participation in the digital economy. The study calls for a thorough examination of the uneven distribution of platform labor outcomes, focusing particularly on the local contextual factors contributing to this disparity.

Keywords: Digital Platform Labor; Sustainable Livelihoods; Decent Work; Digital Inequalities; Global South Development; Sustainable Livelihood Framework

Introduction

The growing size of the digital platform economy is renewing the discourse on how leveraging global digital labor could create attractive livelihood opportunities and fill institutional gaps in economically disadvantaged regions (Malik et al., 2021a; Rossotto et al., 2018). This development narrative is built on the evidence that digitalization is transforming traditional jobs while creating geographically dispersed employment opportunities with varying levels of quality and stability (Martin & Zysman, 2015). The digital nature of these opportunities carries some potential to help boost service sector employment in developing regions (Elbanna & Idowu, 2021a; Melia, 2020). However, the temporary and precarious nature of these opportunities also demonstrates a decline in employment security (Zhou, 2022). Such a notion of work may leave workers without a meaningful corporative narrative to give to their professional lives (Standing, 2016), deepen global inequalities (Wood et al., 2019), and create new forms of marginalization for developing regions (Graham et al., 2017). Since digitalization is often seen as an influential tool for globalization (Schilirò, 2020), the rapid expansion of

digital connectivity denotes that the Global South development implications of the continually changing global labor market are inevitable as the global skills demand trends and employment quality now has a stronger influence on the local livelihoods among connected regions of the Global South.

There are parallel developments in the reorganization of work, digitalization, and digital connectivity, creating pull and push factors affecting the growth of digital platform labor. On the one hand, digitalization and the emergence of online digital labor platforms have accelerated neoliberal globalization, enabling firms and individuals to break down and frictionlessly outsource tasks to an on-demand global workforce crowd, effectively bypassing the regulatory frameworks that exist within geographic boundaries and the traditional collective labor action that was the hallmark of employment security in the Global North (Graham et al., 2017; Standing, 2019). On the other hand, the growing skilled workforce in the Global South outpaces the local capacity to effectively harness human capital for innovation, partly due to institutional gaps and the hegemony of Western innovation systems (Warhurst et al., 2017). A combination of interrelated developments in the Global South, such as higher education advancements, the expansion of digital connectivity, reduced costs of devices, and yet a persistent scarcity of decent local employment opportunities, has driven individuals towards engaging in digital platform labor (Bonina et al., 2021; De Reuver et al., 2018a; Mika, 2020).

Central to this discourse is the mounting instability and insecurity in labor markets, a trend partly attributed to the proliferation of platform-mediated work arrangements. Some research points out how platform work structure may contribute to the casualization of labor, eroding the stability and protections typically associated with standard employment relationships (De Stefano, 2015). Hence, whether the livelihood opportunities enabled by platforms are a form of decent work, deliver a fair income, security in the workplace, and social protection is a critical and ongoing concern (D'Cruz, 2017; Graham et al., 2019). In response, there are growing yet fragmented bodies of literature emphasizing the need for decent and equitable platform work indicators and measurement projects that serve as a pillar for upholding core labor standards in the ever-evolving digital platform economy (Graham et al., 2019; Heeks et al., 2021; Rothschild et al., 2022). Recently, some platform-side initiatives, e.g., Fairwork (Graham et al., 2019), have attempted to constitute a baseline for what it may take for different types of platform-mediated work arrangements to be considered decent and fair.

However, the labor end of the platform value chain has a local development dimension. Here, the uneven employment opportunities may result in a subjective and relative perception of what constitutes better quality, more desirable, and meaningful work, making the quality of employment contingent on the extent to which it supports achieving individual development aspirations and improves individual capabilities (Fields, 2003). Additionally, the impact of engaging in digital platform work on workers' career progression and skill development can significantly vary across different social contexts (Bonina et al., 2021). Workers may see the livelihood outcomes differently based on how it may or may not

enable them to have more choices to pursue the opportunities that align with their local development landscape (Idowu & Elbanna, 2021b). Central to the policy relevance of these scholarly perspectives is the fragmented nature of literature, necessitating a more integrated approach to better inform and guide policy-making (Bonina et al., 2021; Sutherland & Jarrahi, 2018)

Against the backdrop of these parallel developments, this paper seeks to reduce this fragmentation by utilizing a livelihood lens. It builds on the argument that engaging in digital platform work in the Global South may produce disproportionate livelihood outcomes that problematize the generalizability of platform work's impact in the Global South. These livelihood outcomes are context-dependent, and their recognition requires broader development framing. While acknowledging that access to a fair platform working environment is critical in enabling a healthy macro labor environment, the individual experiences and outcomes may largely depend on local contextual factors such as local labor market conditions and access to capital assets shaped by socio-cultural realities and institutional structures. As a result, the local and long-term livelihood potential of online platform labor in low-resource environments requires a close examination of the narratives of workers in the Global South to understand the range of livelihood outcomes and targeted actions that may improve these outcomes.

In this paper, I first build on this argument by examining the extent to which digital platform work offers a fulfilling and decent livelihood choice for workers in different developing regions, the extent to which engaging in short-term digital platform work influences workers' ongoing skills development and the long-term career development prospects in the platform labor economy. I examine the published empirical studies in the Global South to synthesize arguments by focusing on the variation in local perspectives and different literature bodies. Second, I utilize the findings to refine a capabilities-centered Sustainable Livelihood Framework (SLF) for digital platform work as a transdisciplinary lens to recognize how contextual factors such as local economic conditions, access to capital assets, and socio-cultural arrangements influence platform workers' livelihood outcomes.

This interdisciplinary work advances the field of community informatics (CI). It provides a valuable lens to examine these dynamics, emphasizing how communities utilize information and communication technologies (ICTs) to address local needs and foster development. This paper contributes to CI by exploring how digitalization impacts livelihoods in the Global South, particularly regarding access to decent work, skill development, and worker resilience. It offers a nuanced understanding of how digital platform work can mitigate or exacerbate existing socio-economic inequalities and how community-level interventions can enhance positive outcomes. The Sustainable Livelihoods Framework (SLF) is refined to include digital capital and socio-cultural assets, bridging CI with digital labor studies to provide a comprehensive view of the interplay between technology, work, and community development.

Sustainable Livelihood Approach Towards Digital Platform Work

Fewer examples in the literature examine digital platform work from a livelihood lens. The concept of livelihood is an umbrella term used in literature and development practice to describe what people do to make a living, the context in which they make these choices, and the structural processes that influence them (Natarajan et al., 2022). Chambers and Conway (1992) first defined a livelihood as the capabilities, assets, and activities needed to make a decent living and reach one's potential. Chambers (1995) further described that a livelihood is sustainable when it is resilient against disruptions, supports advancing capabilities and assets, and adds value to other livelihoods at the local and global levels in the short and long term. Over the period, this livelihood approach has transformed into a framework and a methodology that has directed a range of development interventions by state and non-state (Scoones, 2015). Fundamentally, the livelihood framework acknowledges that individual choices related to livelihood strategies and outcomes are influenced by the distinct vulnerabilities individuals encounter and their varying access to capital resources that help cope with those vulnerabilities (Chambers & Conway, 1992).

In recent years, the Sustainable Livelihood Framework (SLF) has been tailored and revised for its utility in understanding livelihoods in the digital economy. Among these versions are Duncombe's conceptualization, which focuses on ICT-driven microenterprises (Duncombe, 2007), and Gilger's alternative evaluation framework to understand digital technology's impact on developing populations (Gigler, 2015). The SLF conceptualization presented by Duncombe (2007) holds the most relevance for investigating digital platform work compared to other versions. Notably, Duncombe (2007) distinctly incorporates political capital, acknowledging the disenfranchised groups' difficulties in accessing market opportunities, and asserts that social relations such as gender, culture, and ethnicity critically influence vulnerabilities and shape livelihood strategies.
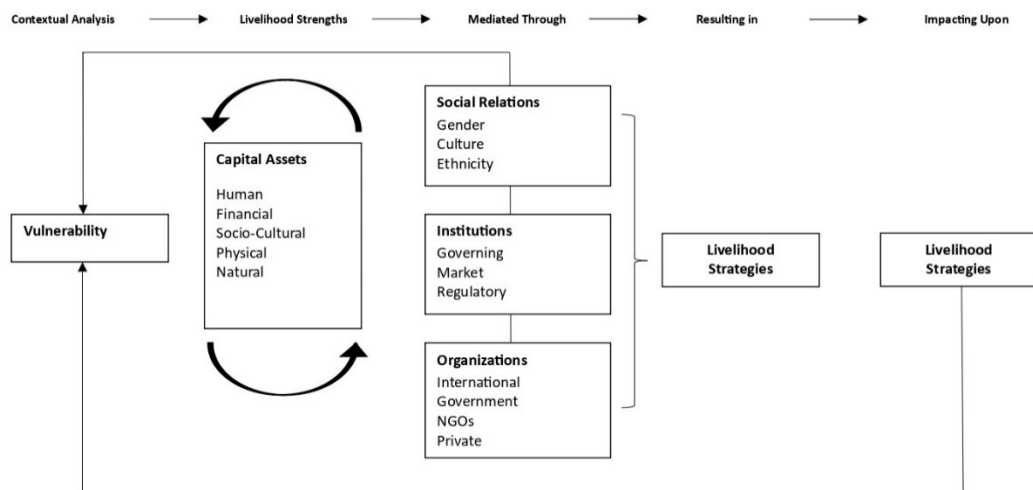

Figure 1: The Livelihoods Framework of Analysis by Duncombe, 2007

Some digital labor studies have utilized this SLF in the study of digital work, e.g., Malik et al. (2017). However, SLF has also received criticism for being too rural and poverty-focused (Mensah, 2011), not capturing the globalized nature of structural influences, and being too presumptuous towards livelihood context as a mere form of vulnerability (Mensah, 2011; Natarajan et al., 2022; Scoones, 2015). Considering this critique, the latter half of this paper builds on the review's findings and the critique of SLF. It extends an Integrated Digital Platform Livelihoods Framework as a starting point for an SLF suitable for analyzing the broader livelihood impact of digital platform work in developing regions.

Two motivating factors inspire the creation of this framework. First, the absence of broader frameworks in the study of platform labor is well-acknowledged in the literature (Bonina et al., 2021; Kenney & Zysman, 2016). Most platform labor studies have employed piecemeal strategies to investigate digital platform work, where specific theories guide analyses without any broader framing of contexts (see Table 1 for a detailed list of theories and frameworks). The application of the livelihood framework could potentially fill this gap, acting as a dynamic tool that widens the spectrum of research by considering a multitude of factors intrinsic to livelihood decisions and outcomes. Second, the livelihood framework is closely linked with the prolonged efforts to improve employment opportunities in Global South development, making it a great tool to bridge the gap between academic research and development practice (Duncombe, 2007; Gigler, 2015).

Methods

I primarily utilize an interpretative qualitative review method to select and analyze relevant empirical studies. This approach amalgamates primary research to interpret and compare findings, fostering new insights and potentially forming new understandings (Seers, 2015). One of the evolving qualitative review methodologies is a realist review or realist synthesis that considers both context and outcomes while compiling appropriate literature to facilitate the review of complex social interventions (Rycroft-Malone et al., 2012). This literature review method considers the context, acknowledging that identical opportunities can yield varying outcomes across different environments or population groups (Edgley et al., 2016; Pawson et al., 2005).

Data Extraction

A comprehensive search of multiple databases was conducted to find relevant empirical studies. It was last updated on the 10th of May 2023. This search was first carried out using the SCOPUS and Web of Science literature databases, which yielded 243 and 518 relevant studies, respectively. Different combinations of the relevant keywords that were used in this search included "online digital labor," "digital platform labor," "platform work," "online gig work," "crowd work," "online freelancing," "microwork," and "development." Due to the interdisciplinary nature of digital platforms, an effort was made to include studies from various disciplines, including but not limited to information systems, labor economics, management, governance, and development studies. Following the suggestion of Mallett et

al. (2012), highlighting the significance of research published by development sector institutes, I included papers from think tanks and development policy institutes to account for development sector research outside the traditional academic journals.

To supplement this search and to capture emerging literature, Google Scholar (32 studies) was also used along with emerging literature forest discovery techniques as described by Sharma et al. (2022), utilizing tools such as ResearchRabbit (68 studies). This process resulted in the discovery of 861 studies in total. After removing 59 duplicates, 802 studies were selected for initial abstract and title screening. 540 irrelevant studies were removed, and 262 were selected for a full-text review. The selection of studies followed specific criteria for inclusion and exclusion. Only empirical studies explicitly focusing on the role of digital platform labor in local development, such as access to work opportunities, skills upgrading, and employment conditions in the Global South countries were included. Studies failing to meet these criteria were excluded. After three rounds of literature selection, this process yielded 29 studies, while 233 were excluded.

Out of the excluded studies, 71 were excluded because they were not empirical. Additionally, 53 studies primarily focused on location-based platforms, making them irrelevant to the study's scope. 29 were related to e-commerce and sharing economy platforms, and 40 concentrated on the Global North or a mix of Global North and South countries. Furthermore, 36 studies exploring a mix of location-based and online platforms were removed due to their mismatch with the study's focus. Lastly, 33 studies primarily focused on the technical structure of digital platforms or emphasized platform statistics without a reasonable human development context were also removed.

Table 1: List of empirical studies examining platform labour in the Global South

	Study	Topic	Countries and Regions	Key Theories/Framework
1	Varanasi et al., 2022	Low-income women's experiences with crowd work	India	
2	Panaligan & Curran, 2022	Racial biases in platform teaching gigs	Philippines	
3	Idowu & Elbanna, 2021a	Crowdwork employment strategies in Nigeria	Nigeria	
4	Idowu & Elbanna, 2021b	Crowd workers' affirmation and identity-building strategies	Nigeria	Social Identity Theory
5	Elbanna & Idowu, 2021	Digital liminality and precarity alternatives	Nigeria	Indigenous Theory of Liminality
6	Gurumurthy et al., 2021	Microwork framing in the Indian context	India	
7	Elbanna & Idowu, 2021	Crowdwork and human capital development in low-resource environments	Nigeria	Sustainable Development Goals and Human Capital Theory.
8	Leung et al., 2021	Freelancing strategies and impact	China, India	Putting-Out System

9	Beerepoot & Oprins, 2022	Online Freelancing and impact sourcing in the context of outsourcing trends	Philippines	
10	Wang et al., 2020	Chinese crowd workers' experience with Platforms and digital work perceptions	China	Job Resources model, the Work Design Questionnaire, the Oldenburg Burnout Inventory, the Utrecht Work Engagement Scale
11	Melia, 2020	Digital employment strategies in low-resource environments	Kenya	
12	Idowu & Elbanna, 2020	The shaping of career paths in the digital platform labor economy	Nigeria	Don Super theory
13	Anwar & Graham, 2020	African gig workers' perspectives towards access and quality of work	South Africa	Resistance, Resilience, and Reworking
14	Nawaz et al., 2020	Part-time e-lancing strategies	Pakistan	Value Proposition Theory.
15	Soriano & Cabañes, 2020	Filipino digital workers' collective strategies	Philippines	
16	Chidoori & Van Belle, 2020	Digital Labor Prevalence in South Africa	South Africa	Technology Acceptance Model (TAM), Self-Determination Theory (SDT)
17	Malik et al., 2021a	Digital labor platforms in rural Pakistan	Pakistan	Institutional Theory and Institutional Voids.
18	Sultana et al., 2019	The impact of IT freelancing in Bangladesh	Bangladesh	Theory of Planned Behavior.
19	Idowu & Elbanna, 2019	Nigerian Crowd Workers Career Trajectory	Nigeria	Life Rainbow Model and Super's Model.
20	Eskelund et al., 2019	Online freelancing training in the Philippines	Philippines	Choice Framework and Choice Theory.
21	Lehdonvirta et al., 2019	Global platform economy growth	Philippines, Vietnam, Malaysia, South Africa, Kenya, Nigeria	Transaction Cost Economics (TCE), Signaling Theory.
22	Soriano & Panaligan, 2019	Influence as a career growth strategy among successful platform workers	Philippines	
23	Romke & Sayed, 2018	Freelancing impact in Bangladesh	Bangladesh	Hypodermic Needle Theory
24	Galpaya et al., 2018	Microwork Potential in Sri Lanka	Sri Lanka	
25	Malik et al., 2018	The institutional push toward digital labor in Pakistan	Pakistan	Sustainable Livelihoods Framework
26	Graham, Hjorth et al., 2017	Digital labor and workers' livelihood strategies	Philippines, Malaysia, Vietnam, South Africa, Nigeria	
27	Graham, Hjorth et al., 2017	Global margins and online gig work	Kenya, Nigeria, South Africa, Vietnam,	

			Malaysia, Philippines	
28	D'Cruz, 2017	Empowerment and work quality complexities in online labor	India	Critical Hermeneutic Phenomenology
29	D'Cruz & Noronha, 2016	Indian crowd workers' multifaceted experiences	India	

Data Analysis

The studies were read in-depth, and key themes and patterns related to digital platform labor and development were identified and categorized. A standardized data extraction form was developed in the first phase to gather consistent information from each included study. The extracted data included the geographical region of focus, theoretical framework, theories used in the empirical studies, and the key findings related to the impact on local development.

Figures 2 and 3 illustrate the varying scales of research participation and study numbers across developing countries. The average number of participants per study is approximately 39. The number of participants per country ranges from as low as 8 in Malaysia to as high as 389 in the Philippines, indicating a substantial variation in the size of research participants. Interestingly, this does not correlate directly with the number of studies conducted in each country. For instance, despite not having the highest participant count, Nigeria leads in studies conducted with 9. In contrast, with a significantly higher participant count, China only has 2 studies.
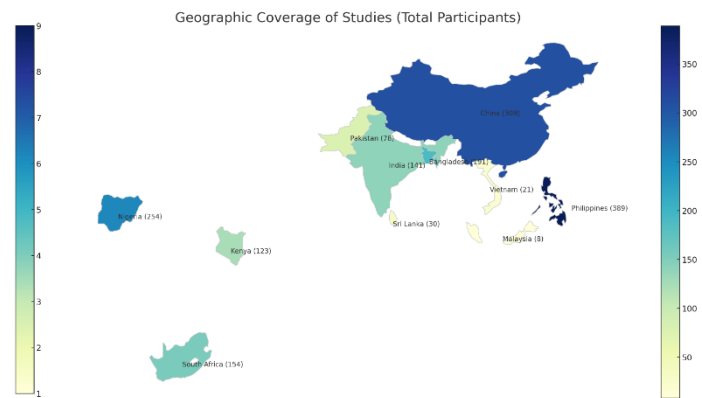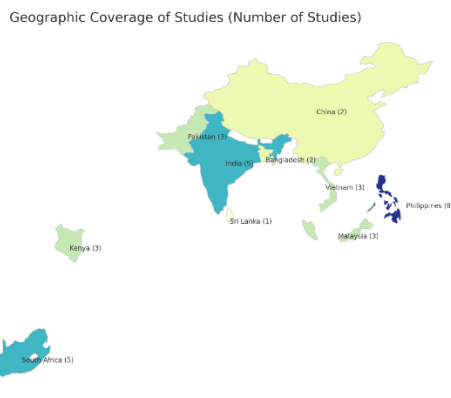

Figure 2: Geographic coverage (# of studies)   Figure 3: Geographic coverage (#of participants)

In the second data analysis phase, NVivo software was used to systematically construct relevant themes within the collected studies pertinent to the three core focus areas - decent and meaningful work, opportunities for career development, and employability skills development. NVivo facilitated an in-depth textual analysis, allowing the extraction of emergent sub-themes, patterns, and trends. This process involved scanning statements and

phrases while using the Sustainable Livelihoods Framework by Duncombe (2007) as the analytical lens to form arguments on how and which contextual factors may shape experiences in the digital platform labor economy. As a result, the analysis underscored the interconnectedness of these themes and their unique characteristics within the context of different study regions.

Findings

The analysis of these 29 empirical studies unveils considerable diversity in worker experiences and a varied ecosystem of platform labor across developing countries, differing notably in the type of work accessed through digital platforms, workers' skills, motivations, and how local and external socio-economic structures shape experiences in the platform economy. Dissecting the nuanced differences and similarities across different developing regions, the analyses below illustrate the key themes related to decent and meaningful work, career development prospects, and skills development by building on the narratives that emerged during the analysis.

Access to Decent and Meaningful Work in Digital Platform Labor Economy

Adequate access to decent work opportunities significantly varies by sector and region. Notably, the notion of adequacy is often not about the opportunity volume but largely depends on individual needs. While some workers in South Asia and Kenya see digital platform work as a supplement to full-time employment or studies (Galpaya et al., 2018; Melia, 2020), others view it as their primary income source. Despite the instability concerning work availability, workers often leverage their socio-cultural capital to overcome the precarious nature of platform work, forming collaborative networks to secure a larger volume of work (Idowu & Elbanna, 2021; Melia, 2020).

As highlighted in Table 2, several studies suggest that barriers to entry for platform work are significant, especially for individuals lacking higher education credentials. Studies from sub-Saharan Africa and South Asia highlight these challenges, where the initial promise of abundant work often fails to materialize for many individuals who train to become platform workers (Anwar & Graham, 2020; Malik Fareesa et al., 2018). Furthermore, new platform workers frequently face significant difficulties in showcasing their skills and may spend months without securing any work opportunities (Anwar & Graham, 2020).

Table 2: Key empirical studies examining Global South platform workers' access to decent work

Notable Observation	Studies	Core Argument
Barriers to entry for platform work	Anwar & Graham (2020); Fareesa et al. (2018)	Lack of higher education credentials hampers initial access to work opportunities

Challenges in showcasing skills	Anwar & Graham (2020)	New workers face significant difficulties in securing work without client ratings
Global platforms perceived as a better option	Chidoori & Van Belle (2020)	Global platforms are seen as offering more accessible work compared to local platforms with smaller market bases
Dependence on platform work due to local employment market instability	Graham, Hjorth et al. (2017); Tintiangko & Soriano (2020)	Local employment instability drives reliance on platform work
Intermittent platform work is the only knowledge work option for some migrants	Graham, Hjorth et al. (2017)	Some migrants in medium-income countries often rely on platform work to bypass legal barriers to access knowledge work
Shared unpredictability in employment	Beerepoot & Oprins (2022)	Instability is common in both online and offline work in regions and markets that depend on outsourcing
Varied perspectives on the adequacy of platform work	Galpaya et al. (2018); Melia (2020)	Depending on whether workers see platform work as a primary or supplementary source of work opportunities, there are significant differences in how workers view platform work's adequacy
Sociocultural capital aiding work precarity	Idowu & Elbanna (2021); Melia (2020)	In some regions, collaborative social networks at the local level help secure more work when direct access to work is precarious

Literature suggests that the success of platform workers can be influenced by the platform's own ability to attract clients. Workers in different African countries often perceive global platforms as offering better work opportunities than local digital platforms (Chidoori & Van Belle, 2020). This perception is crucial, as the local employment market in many developing regions is unstable, pushing individuals to rely on global platforms to fill employment gaps (Graham, Hjorth et al., 2017; Tintiangko & Soriano, 2020).

Platform work, though precarious, could bypass opportunity inequalities in some unique ways. For instance, in some medium-income countries, intermittent platform work is the only earning option for migrants who cannot secure formal employment in the knowledge work economy due to legal status issues (Graham, Hjorth et al., 2017). Yet the division between platform work and locally available jobs is often not straightforward as locally available knowledge work jobs and platform work are more closely intertwined in some countries than others. This trend is more pronounced in regions like the Philippines, where platform labor and local employment are both contingent upon outsourced projects, creating a landscape of unpredictability and inconsistency in work availability (Beerepoot & Oprins, 2022).

Wage Conditions and Employment Quality

Fairness of wage is a critical determinant of the quality of work on digital platforms and otherwise. Table 3 below highlights the empirical studies examining the wage disparities and compromises in the platform work economy. The geographic position of work workers greatly

influences relative wage satisfaction. For instance, workers in India and China recognize that they are paid less than their Western counterparts for the same work and skill sets. However, some find the remuneration attractive due to the currency conversion rate, which makes relative wages acceptable (D'Cruz, 2017; Leung et al., 2021). Conversely, this currency conversion advantage can also cause frustration, leading to wage competition among workers from different developing countries (Malik et al., 2021b; Wang & Huang, 2022).

Table 3: Wage quality and conditions in the platform economy

Notable Observation	Studies	Core Argument
Fairness of wage based on the relative and comparative lens	D'Cruz (2017); Leung et al. (2021)	Lower wages in developing countries but often seen as acceptable by workers due to currency conversion
Frustration with wage differences	Malik et al. (2021b); Wang & Huang (2022)	Currency conversion benefits some Global South workers more than others, resulting in wage competition among workers from different developing countries
Classification of workers into categories	Malik et al. (2018)	Dividing workers into distinct groups based on skill and experience demonstrates how wage conditions and employment quality are experienced differently and often contingent upon workers' broader profiles
Challenges for medium-skill platform workers	Sison & Lavilles (2018)	Oversupply of medium-skilled workers results in challenging market dynamics, and workers struggle with low wages and poor work conditions
Career progression through platform work	Elbanna & Idowu (2021b); Idowu & Elbanna (2019)	The goal of securing stable income through platforms requires going through a demanding and underpaid path to learning new in-demand skills
Proactive initiatives by workers	Idowu & Elbanna (2021b); Melia (2020)	Workers' strategies to circumvent platform policies and improve work conditions show how worker agency materializes differently in some regions
Relational power imbalance	Graham & Anwar (2017); Soriano (2021)	Platform work may be global, but social and geographical inequalities continue to impact work conditions

Some studies classify digital platform workers into skill and experience categories to understand the varied quality of employment conditions and wage differences. For instance, Malik et al. (2018) divided potential digital workers in Pakistan into 'sinkers, strugglers, survivors, and swimmers,' illustrating the spectrum of experiences from struggling to find work to establishing a strong portfolio with reasonable earnings. Similarly, the categorization by Sison and Lavilles (2018) in the Philippines reflects stages from 'noob' to 'super-rockstar,' highlighting the cyclical process required to maintain a rewarding work environment.

Workers' financial reliance on platform work significantly influences their experience and income stability. Those with the flexibility to not entirely depend on platforms may gradually transition into full-time platform work without excessive hardship. On this subject,

the studies by Elbanna and Idowu examining the work conditions of Nigerian platform workers viewed as a liminal journey through stages of untrusted worker, trusted professional, veteran, and post-career stage' (Elbanna & Idowu, 2021b; Idowu & Elbanna, 2019). However, following such a path often requires patience, substantial time, and continuous skills training. Yet, these transitional strategies may not represent all workers, with some workers not compromising their desired pay and relying solely on good work ethic and skills (D'Cruz, 2017).

Worker agency is limited in this type of work but not absent. Some platform workers undertake proactive initiatives to improve their work conditions, such as circumventing platform policies by directly exchanging contact details with clients for future jobs, thereby avoiding platform fees (Idowu & Elbanna, 2021b). These strategies are seen as essential in counteracting the imbalanced relational power between clients, global platforms, and workers, which often results in social and geographical inequalities (Graham & Anwar, 2017). Scholars also point to the differences in global platforms in compassion to local platforms, where in regions with more developed outsourcing markets, local digital platforms may provide better work conditions aligned with local welfare needs (Soriano, 2021).

Conditions of Equity and Respect and Non-discrimination

The highlighted observations in Table 4 show how, similar to the traditional employment market, gender inequality and patriarchy significantly impact women's participation in digital platform work. Unsurprisingly, these disparities are more pronounced in countries with higher levels of patriarchy. For instance, studies examining women platform workers' local work conditions in Pakistan and India suggest how securing social and cultural approval for engaging in formal work and managing gender-based domestic responsibilities can lead to increased work-related stress and obstruct participation in the platform labor market (Malik Fareesa et al., 2018; Varanasi et al., 2022). However, engaging in paid employment may also cultivate a sense of self-empowerment and enhance personal agency at the local level, helping to reshape cultural norms (Varanasi et al., 2022).

Table 4: The state of equity and non-discrimination in platform work economy

Notable Observation	Studies	Core Argument
Multilayered gender inequality and patriarchy	Fareesa et al. (2018); Varanasi et al. (2022)	Significant local challenges for women platform workers in patriarchal societies
Increased work-related stress for women	Varanasi et al. (2022)	Gender-based domestic responsibilities put heightened pressure on women platform workers
Online work stigma in some countries	Elbanna & Idowu (2021)	Social disapproval for digital work in some regions is gendered but applies specifically to men in some regions, e.g., Nigeria
Global biases and platform inequalities	Gurumurthy et al. (2021); Idowu & Elbanna (2021b); Lehdonvirta et al. (2019)	Location and ethnicity continue to affect and dictate opportunity access

Significant discrimination and harassment from employers	Holtgrewe (2014); Pinto (2018); Cini (2023); Malik et al. (2021b)	Widespread equality and discrimination issues on digital platforms, mostly from employers but sometimes from fellow workers due to excessive competition
Discrimination faced on platforms differs by region	Leung et al. (2021); Wang et al. (2020)	Less racial and gender discrimination faced by certain minority groups compared to others
Role of local platform market conditions	Wang et al. (2020)	The strength of Local platforms may result in lower discrimination and better work conditions for local workers

The legacy of how online work has evolved in different regions may play a vital role in the social acceptance of platform work. For instance, in Nigeria, societal norms and perceptions about digital work can lead to social disapproval for male digital platform workers, often associating their work with internet fraud (Elbanna & Idowu, 2021). This stigma, compounded by a lack of institutional support and social awareness, pushes digital platform workers to keep their work out of public visibility (Elbanna & Idowu, 2021). These social landscapes highlight the constraints of associating empowerment universally with certain types of work, as the dignified and equitable nature of work is also measured by how it is experienced within unique societal and cultural contexts.

There is a consensus among scholars that global biases and platform-based inequalities constrain opportunities based on workers' location and ethnicity. Platforms may limit registrations from specific geographic areas and systematically exclude workers based on native language requirements, regardless of their skill level (Gurumurthy et al., 2021; Idowu & Elbanna, 2021b; Lehdonvirta, et al., 2019). This stereotyping extends beyond language skills, creating an environment of distrust toward the technical competence of workers from specific regions (Graham, Lehdonvirta, et al., 2017). Discrimination and harassment in the digital platform labor economy often manifest as a new form of neocolonialism facilitated by the anonymity of digital networks (Holtgrewe, 2014; Pinto, 2018). Excessive competition and an oversupply of workers exacerbate hostilities among platform participants (Cini, 2023; Malik et al., 2021b). Interestingly, some comparative studies suggest that Chinese platform workers report comparatively less racial and gender discrimination, potentially due to a robust domestic demand-side platform market that reduces the imbalanced power of global platforms (Leung et al., 2021; Wang et al., 2020).

Workers' Agency in the Digital Labor Market

Table 5 points out the limits and complexity of exercising agency in the platform agency. Workers in the digital labor market may exercise agency by altering their online identities to overcome cultural, racial, and gender biases. For example, women in the Philippines may suppress their ethnic identities to secure teaching gigs, while workers in Nigeria and Kenya may buy accounts registered in more privileged countries or create multiple profiles to secure work (Panaligan & Curran, 2022; Idowu & Elbanna, 2021b; Melia, 2020). These strategies reflect a utilitarian approach to online identities, where the primary goal is to enhance economic capabilities rather than displaying personal achievements (Idowu & Elbanna, 2021b; Melia, 2020).

Table 5: Notable studies examining workers' agency

Notable Observation	Studies	Core Argument
Altering online identities to overcome biases	Panaligan & Curran (2022); Idowu & Elbanna (2021b); Melia (2020)	Workers may revert to altering platform identities to overcome cultural, racial, and gender biases
Utilitarian use of online identities	Idowu & Elbanna (2021b); Melia (2020)	Platform profiles are often more about enhancing economic capabilities rather than displaying personal achievements
Leveraging cultural understanding to secure stable work	Panaligan & Curran (2022)	Workers' level of cultural awareness may help them navigate the biases in the digital labor market

Leveraging cultural understanding and anticipating client biases are critical for workers navigating the digital labor market. By altering their online personas, workers in various regions may increase their chances of securing stable and well-paying jobs, effectively overcoming selection biases and networked discrimination (Panaligan & Curran, 2022; Idowu & Elbanna, 2021b; Melia, 2020).

Employability Skills Development

Faced with the pressures for rapid industrialization, much of the developing world has to address the accompanying skill constraints and deskilling by promoting continuous skills development and reskilling to ensure ample formal employment opportunities (Cunningham et al., 2006). Rapidly growing population[1] further necessitates creating a delicate balance between increasing economic efficiency and reducing high employment. Unsurprisingly, the potential of digital platform work in reconfiguring the skills landscape is a significant area of discussion in the empirical works examined. Research unveils diverging narratives on the range of skill acquisition landscapes, with some empirical studies highlighting varying levels of improvement while others emphasize potential constraints. Evidently, full-time platform workers may develop their technical skills more than those working part-time (Wang et al., 2020). Although this should be an obvious assertion, it is still an important consideration as there is a significant variation in the work hours of different platform workers in different regions and work domains (Kässi et al., 2021).

For some workers, platform work may create attentiveness to shifting skill demand. For instance, Melia (2020) shares the experiences of Kenyan workers moving from non-technical opportunities, such as working as a security guard, to creative and knowledge-intensive occupations in the platform economy, such as content writing on emerging technologies and

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[1] The countries examined in these empirical studies, including India, Nigeria, and Indonesia, are also the top countries by population growth estimated for next thirty years (United Nations, 2022).

trends. In such scenarios, platform work may provide an early mover advantage where workers may be able to leverage the remoteness of their geographic location to establish industry-specific knowledge and skills, resulting in them establishing their niche.

For some workers, a superior level of human capital through good-quality education and professional training is a pre-request for building new skills through digital platform work. The literature demonstrates the critical utility of foundational skills and capabilities that provide the foundation for learning new skills through diverse platform tasks (Elbanna & Idowu, 2021a). However, regarding self-directed learning and development, some research studies show that those with health concerns and lower education levels may be advantaged. The study by Wang et al. (2020) in China demonstrates that workers without a postgraduate degree scored higher in their motivation and ability to utilize platform work as a source for self-development than those with a graduate degree. Their work also demonstrates that workers in high-income groups and with higher education may have a less fulfilling experience on platforms as they may have already acquired sufficient knowledge and expertise through their formal education, which would weaken the skills-development potential of digital platforms. How this assumption compares to other countries is relevantly unclear as fewer studies have taken a similar quantitative approach to study this subject. That said, these arguments do reflect the ceiling of platform work's skills development potential at a macro level.

Opportunities for skills development may be restrained or even absent in the context of microwork, primarily due to the repetitive nature and limited scope of such work (Idowu & Elbanna, 2019; Rani & Singh, 2019). However, the potential for skills development in this context is closely intertwined with the existing degree of local human capital. More specifically, as the previous section highlighted the role of education levels on skills development prospects, the possibilities for skill advancement are also contingent on whether microwork is undertaken by individuals who already possess superior digital and informational skills or by those with little to no digital capital. For instance, studies examining the skills development potential of microwork in India (Varanasi et al., 2022) and Namibia (Keskinen et al., 2022) demonstrate how the structured approaches to introducing microwork may cultivate digital and informational capabilities among those grappling with more significant digital inequalities and skill gaps. Some scholars suggest that the process of scanning work opportunities and navigating digital platform structure may help increase informational and digital capabilities, which is particularly important to reduce barriers for novice workers (Elbanna & Idowu, 2021a).

A notable distinction in these viewpoints is the varying levels of existing digital capital and the differentiated local technology landscapes, which may noticeably alter the potential for skills advancement in this form of work and the effectiveness of accompanying skill development programs.

Entrepreneurial and Management Skillset Development

Digital platform work has the potential to develop entrepreneurial skills, but this is contingent on the type and complexity of tasks, local organization of platform work, and individual attributes. While such work may build resilience, continuous instability can lead to burnout, decreasing resilience over time (Nawaz et al., 2020). Literature suggests that digital platform work may foster entrepreneurial skills, particularly in the IT sector. In Bangladesh, skills and mindsets, such as risk-taking and proactiveness, are positively associated with worker performance and success (Sultana et al., 2019). Attracting clients and building solid portfolios also requires an entrepreneurial mindset, as seen in studies from Pakistan (Malik et al., 2021). Workers may enhance these skills by independently managing projects, solving problems, and meeting deadlines (Elbanna & Idowu, 2021a)

Table 6: Literature examining entrepreneurial skill development through platform work

Notable Observation	Studies	Core Argument
Positive association with entrepreneurial skills	Sultana et al. (2019)	IT sector work in Bangladesh shows a positive association between entrepreneurial skills development and platform work engagement
Independent management of projects	Elbanna & Idowu (2021a)	All platform work enhances management skills such as project management and problem-solving skills
Building social capital	Leung et al. (2021)	Engaging with international clients and networking help build social capital critical for entrepreneurial ventures
Supporting off-platform ventures	Chidoori & Van Belle (2020); D'Cruz & Noronha (2016)	Platform workers routinely utilize networks built through platforms to enhance business prospects outside the platform ecosystem
Risks of complacency	Rani & Singh (2019); Nawaz et al. (2020)	Entrepreneurial skills development contingent on task complexity. Low-skilled, repetitive platform work tasks can hinder entrepreneurial skills
Resilience and multitasking	Elbanna & Idowu (2021b); Sultana et al. (2019)	Adapting to irregular income and workloads may build workers' resilience to unpredictability
Creativity and innovative thinking	Galpaya et al. (2018)	Competitive platform work markets necessitate and improve creativity and innovative thinking

The observations in Table 6 suggest that building resilience and multitasking skills are essential for platform workers due to irregular income and unpredictable workloads (Elbanna & Idowu, 2021b; Sultana et al., 2019). Creativity and innovative thinking are also necessary to

distinguish oneself in competitive markets, further supporting entrepreneurial growth (Galpaya et al., 2018). Continuous efforts to improve social capital are crucial for digital platform workers to enable swift engagement with international clients and expand networking opportunities. This social capital may support off-platform ventures, with workers utilizing their networks to enhance their business prospects (Chidoori & Van Belle, 2020; D'Cruz & Noronha, 2016). However, the nature of work still plays an essential role, as the repetitive nature of low-skilled tasks may lead to complacency, hindering entrepreneurial skill development (Rani & Singh, 2019).

Domain-Focused Skills Upgrading

Full-time digital platform workers develop their technical skills more than part-time workers, as seen in China (Wang et al., 2020). This trend is significant in developing regions such as East Africa, where workers may transition from non-technical jobs to knowledge-intensive occupations such as content writing on emerging technologies (Melia, 2020). However, foundational skills and good-quality education are still crucial for building new skills through digital platform work, underscoring the importance of a solid educational background (Elbanna & Idowu, 2021a).

Table 7: Empirical studies examining domain-specific skills upgrading in the platform economy

Notable Observation	Studies	Core Argument
Technical skills development is uneven and depends on the workload	Wang et al. (2020)	Full-time workers enhance technical skills more than part-time workers
Awareness of skill demand among workers	Melia (2020)	Workers constantly learn new skills and switch between knowledge-intensive occupations to remain competitive
Foundational skills and capabilities	Elbanna & Idowu (2021a)	Regardless of degree requirements, good-quality education and training are still crucial for platform workers to be successful
Self-directed learning	Wang et al. (2020)	Lower education levels may show higher motivation to learn new skills
Constraints of microwork	Idowu & Elbanna (2019); Rani & Singh (2019)	Limited skills development potential in microwork
Digital and informational skills	Varanasi et al. (2022); Keskinen et al. (2022)	Most workers enhance digital capabilities through microwork
Vocational training systems	Malik Fareesa et al. (2018); Lehdonvirta et al. (2019); Wood et al. (2019)	Support from state and non-state actors for platform work-related skills training is noticeable in several developing countries, but outcomes are mixed
Social media and online forums	Soriano & Cabañes (2020); Elbanna & Idowu (2021b)	Collaborative learning spaces show local skills development ecosystems where experienced workers' support enables new workers to be successful

Firm-supported HR development	Elbanna & Idowu (2021a); Leung et al. (2021)	The practice of sub-contracting platform work may provide functional upgrading opportunities
Platform-provided training programs	Margaryan (2016)	Formal platform work training programs' broader and long-term Impact on livelihood capabilities is inconclusive

Table 7 demonstrates how scholars have approached the topic of skills development from different standpoints. Although learning new skills to find new and better gigs is common, motivation among workers differs. Self-directed learning is more prominent among workers with lower education levels, who often exhibit higher motivation to utilize platform work for self-development (Wang et al., 2020). However, the potential to learn new skills is limited when workers primarily do microwork tasks because such work typically involves repetitive tasks (Idowu & Elbanna, 2019; Rani & Singh, 2019). Despite this limitation, some scholars suggest that microwork can still enhance digital and informational skills, particularly for workers grappling with significant digital inequalities (Varanasi et al., 2022; Keskinen et al., 2022)

Many studies point to how the vocational training systems supported by state and non-state actors play a vital role in skill development in developing regions. Examples include sponsored training centers in Pakistan, Kenya, and Malaysia, which work with international development organizations to facilitate skills training for digital platform workers (Malik Fareesa et al., 2018; Lehdonvirta et al., 2019; Wood et al., 2019). Beyond such formal skills development ecosystems, social media groups and online forums also serve as collaborative learning spaces, enabling seasoned and novice workers to share strategies and support each other (Soriano & Cabañes, 2020; Elbanna & Idowu, 2021b).

Due to the short-term nature of work contracts, firm-supported human resource development is not common in the platform work economy. However, some functional upgrading opportunities still exist as workers forming informal SMEe and sub-contracting work may provide learning space to novice workers, as observed in studies examining such work redistribution trends in Nigeria and India (Elbanna & Idowu, 2021a; Leung et al., 2021). Additionally, some digital platforms offer training and certification programs. However, the impact of these credentials on improving workers' livelihood capabilities remains inconclusive (Margaryan, 2016).

Career Development and Upward Mobility Prospects

In the traditional organization of work, career advancement is commonly associated with climbing the hierarchical ladder through job performance and superior work ethics or transitioning into higher roles in other firms (Carmeli et al., 2007; Stroh & Reilly, 1997). In the realm of digital platform labor, growth opportunities are highly uneven, self-supported, and less structured, but they do exist. Some digital platform workers are able to utilize their experience on platforms to progressively increase their income each year by increasing the

sophistication of work they perform and moving towards a higher value-added work chain (Beerepoot & Oprins, 2022; D'Cruz, 2017). For this group of workers, career development opportunities may resemble that of a traditional worker (Elbanna & Idowu, 2021a). However, opportunities for upward mobility are more constrained in certain work domains and regions than others. For instance, language teachers on digital platforms in the Philippines may envision fewer opportunities to develop their careers further or gain pay progression through experience (Panaligan & Curran, 2022).

While having a broad skill set as an indication of human capital is helpful, individual attributes and interests play an essential role in realizing a fulfilling livelihood on platforms. Harnessing a specific skill niche is crucial in fostering upward mobility and a strategic move to enhance career trajectory, as Melia (2020) noted in one study focusing on Kenyan workers' various strategies to achieve success in the platform labor economy. However, platforms also present an employment ecosystem that theoretically enables the pursuit of unique, specialized work that may not have any local demand or, arguably, may not even command a high demand on a global scale, possibly amounting to only a few hours per week. In addition to the typical platform work career path characterized by portfolio enhancement leading to higher-paying roles, the studies indicate the adoption of diverse entrepreneurial strategies by workers across different regions. As evident from the examples below, these strategies, both within and outside digital platforms, may include assuming leadership roles in projects, functioning as subcontractors, initiating off-platform business ventures, and cultivating themselves as skill builders in the digital platform economy.

Sub-Contracting as a Career Progression Approach

The observations in Table 8 reflect that sub-contracting in the platform work ecosystem may serve as a critical career progression approach for some workers. This horizontal expansion allows workers to subcontract tasks to other workers, effectively becoming intermediaries who handle substantial projects through their more robust platform profiles network of relationships (Idowu & Elbanna, 2021b; Melia, 2020). This process is often compared to that of project management roles in specialized teams, where workers organize and oversee work assignments, demonstrating their competence in navigating complex projects (Wood et al., 2019; Melia, 2020).

Table 8: Empirical studies examining sub-contracting practices in platform economy

Notable Observation	Studies	Core Argument
Horizontal expansion of work opportunities through sub-contracting	Idowu & Elbanna (2021b); Melia (2020)	Career advancement through subcontracting in Kenya and Nigeria is common, where acquiring more of the same work and redistributing it may provide a career advancement pathway

Platform intermediation and reintermediation complexities	Chen & Sun (2020); De Reuver et al. (2018b)	Experienced platform workers may opt to become intermediaries to handle substantial projects and manage other platform workers on behalf of clients
Virtual SMEs in Africa	Wood et al. (2019); Melia (2020)	Transitioning from intermittent gigs to established enterprises through sub-contracting work may be considered an organic career progression
Formal Platform Work SMEs and social capital	Beerepoot & Oprins (2022); Malik Fareesa et al. (2018)	Building formal SMEs and powering outsourcing networks through platform work is common among platform workers in Pakistan
Physical SMEs and Local Adaptation of Platform Work	Idowu & Elbanna (2021b)	Renting physical workplaces to transform virtual platform work into work that resembles traditional work done in offices is common in countries such as Nigeria
Sub-contracting as a form of exploitation	Chidoori & Van Belle (2020); Graham Hjorth et al. (2017)	Sub-contracting ethics is a grey area, and the risks and challenges of subcontracting remain vague

As highlighted in Table 8, the empirical studies suggest how digital platform work can lead to the creation of virtual small and medium-sized enterprises (SMEs). Experienced platform workers, particularly in knowledge-intensive domains such as tech and software development, transition from intermittent gigs to established enterprises by subcontracting work to meet client demands or increase profit margins (Wood et al., 2019; Melia, 2020). This transition is facilitated by the robust social capital and professional networks built through digital platforms (Beerepoot & Oprins, 2022; Malik Fareesa et al., 2018).

The concept of platform intermediation and reintermediation is a livelihood strategy in the platform work economy where workers may secure work opportunities to become visible or shadow intermediaries. This involves leveraging their platform profiles to assemble specialized teams capable of handling substantial projects, effectively operating as virtual SMEs (Chen & Sun, 2020; De Reuver et al., 2018b). Additionally, in countries such as Nigeria, groups of digital platform workers may rent physical workplaces, creating informal physical SMEs that provide structured work environments and support career growth (Idowu & Elbanna, 2021b).

While sub-contracting offers significant career progression opportunities, it also presents risks and challenges. Some studies view subcontracting as a form of exploitation, where subcontracted workers struggle to showcase their experience, limiting their career growth prospects (Chidoori & Van Belle, 2020; Graham Hjorth et al., 2017). These contrasting perspectives highlight the complexity of subcontracting outcomes and the need for balanced regulation to protect workers from potential exploitation.

Off-Platform Career Growth opportunities

Literature highlights how platform work may lead to workers often pursuing off-platform career growth opportunities, such as becoming independent trainers within their communities. For instance, in Nigeria and Kenya, experienced workers guide and support aspiring platform workers, sharing their knowledge and expertise (Elbanna & Idowu, 2021b). Similarly, as pointed out in Tabe 9, successful digital workers in regions with a more significant presence of development agencies frequently find employment as formal trainers with skills development institutions, bridging the gap between development agencies and local communities (Malik et al., 2021b; Malik Fareesa et al., 2018).

Table 9: Studies Examining Workers' Career Growth Opportunities Beyond Platform Work

Notable Observation	Studies	Core Argument
Platform workers becoming independent trainers in communities	Elbanna & Idowu (2021b)	Guiding new and struggling workers is seen as a career next step among some digital platform workers in Nigeria
Formal trainers and employment	Malik et al. (2021b); Fareesa et al. (2018)	Successful Pakistan workers may become trainers employed by development agencies and skills development institutions
Personal branding for career growth	Soriano & Panaligan (2019); Soriano (2021)	Monetizing platform work success through social media is a common trend linking knowledge work and influencer work segments of the platform work economy
Transferability of skills and experience between the platform and traditional employment market	Beerepoot & Oprins (2022); D'Cruz (2017); Leung et al. (2021)	Varied levels of acceptability of experience and skills gained through platform work
Hybrid entrepreneurs and dream chasers	Idowu & Elbanna (2020); D'Cruz & Noronha (2016); Elbanna & Idowu (2021a)	The practice of leveraging platform work to support individual entrepreneurial ventures shows the ambitious nature of many who choose to work as platform workers
Correlation between digital workers and entrepreneurship	Burke & Cowling (2019); Sultana et al. (2019)	Short-term freelancing as a strategy for new entrepreneurs
Challenges of local economic stability	Desai (2011); Naudé et al. (2011)	The long-term success of workers still depends on the strength of the local economy and the stability of the employment market
Self-marketing strategies and social acceptance	Bogatyreva et al. (2022); Malik et al. (2021b)	The personality traits, ability to build a personal brand, and social acceptance to do so are essential for off-platform career success

Personal branding has become a vital career growth strategy for digital platform workers. Self-marketing strategies and social acceptance are crucial for off-platform career success, highlighting the need for robust personal branding and networking skills (Bogatyreva et al., 2022; Malik et al., 2021b). For example, by monetizing their success through social media, workers in the Philippines may utilize the influencer economy to promote digital work and offer training materials to followers (Soriano & Panaligan, 2019; Soriano, 2021). This intertwined relationship between digital gig work and the influencer economy highlights the potential for additional income streams and career diversification.

Literature suggests a significant correlation between digital platform work and entrepreneurship, with short-term freelancing serving as a strategy for new entrepreneurs to mitigate risk and enhance productivity (Burke & Cowling, 2019; Sultana et al., 2019). Workers may leverage their platform experience to become 'hybrid entrepreneurs' using accumulated financial and social capital to pursue entrepreneurial ventures (Idowu & Elbanna, 2020; D'Cruz & Noronha, 2016; Elbanna & Idowu, 2021a). However, the success of such ventures still depends on local economic stability, which is often challenged by stringent lending criteria, limited infrastructure, and regulatory hurdles (Desai, 2011; Naudé et al., 2011).

Skills and Experience Transferability between Platform Work and Local Markets

The empirical literature listed in Table 10 suggests that the transferability of skills and experience gained from digital platform work significantly varies across regions and sectors. In the Philippines, workers often find their platform-based experience less valuable in local job markets, whereas in India and China, platform work is viewed positively by local employers (Beerepoot & Oprins, 2022; D'Cruz, 2017; Leung et al., 2021). In some regions, such as sub-Saharan Africa and South Asia, local job markets often do not fully recognize the value of skills developed through platform work (Graham et al., 2017; Lehdonvirta et al., 2019). This limited recognition poses a challenge for platform workers seeking formal employment opportunities, as local employers may undervalue their experience (Malik et al., 2021b; D'Cruz, 2017).

Table 10: Studies examining skills and experience transferability

Notable Observation	Studies	Core Argument
Skill transferability varies across regions and sectors	Graham et al. (2017); Lehdonvirta et al. (2019)	Significant Differences in how skills to work on platform-provided jobs are valued in local job markets
Limited recognition of platform work in local job markets	Malik et al. (2021b); D'Cruz (2017)	Local employers may undervalue platform work experience
Mismatched expectations between platform work skills and local market demands	Beerepoot & Oprins (2022); Wood et al. (2019); Sultana et al. (2019)	There is a disconnect between skills developed through and for digital platform work and local market needs

Valued skills in local markets	Wood et al. (2019); Sultana et al. (2019)	Tech skills and digital literacy through platforms are generally highly valued locally
Challenges in translating platform success to local employment	Rani & Singh (2019); Idowu & Elbanna (2019)	Difficulty in demonstrating success on platforms to local employers
Hybrid career paths	Galpaya et al. (2018); Leung et al. (2021)	Combining platform work with traditional employment is a common middle ground for many workers
Regulatory and institutional barriers	Graham & Anwar (2017); Desai (2011)	Significant and long-term constraints for platform workers entering formal employment

Studies reflect how there is often a disconnect between the skills developed through platform work and the demands of local economic markets. For instance, while tech skills and digital literacy are highly valued, other skills acquired through platform work may not align with local market needs, leading to mismatched expectations (Beerepoot & Oprins, 2022; Wood et al., 2019; Sultana et al., 2019). This mismatch can result in difficulties for platform workers trying to translate their success on digital platforms to traditional job settings (Rani & Singh, 2019; Idowu & Elbanna, 2019). Despite these challenges, some platform workers successfully combine platform work with traditional employment, creating hybrid career paths. In regions such as South Asia and China, workers leverage their digital skills to enhance their employability in local markets, effectively bridging the gap between platform work and formal employment (Galpaya et al., 2018; Leung et al., 2021).

Sustainable Livelihood Approach Towards Digital Platform Work

The empirical studies examined here present a wide variety of viewpoints underlining the multifaceted nature of digital platform work and its wide-ranging implications for workers, societies, and economies. The diversity of disciplinary approaches, while highlighting a fragmented view of the platform labor realities, provides the opportunity to apply transdisciplinarity to enrich multifaceted development agendas that focus on livelihood development and gains in human capabilities as the end outcome. Nevertheless, the question remains: which theoretical frameworks are adequately equipped to support this complex process?

Notably, some studies have applied broader development frameworks such as Sustainable Development Goals (Elbanna & Idowu, 2021), Sustainable Livelihoods Framework (Fareesa Malik et al., 2018), and Choice Framework (Eskelund et al., 2019), signifying the interest in the potential of a capabilities-driven research agenda to understanding the implications of platform work for development in low-resource environments. However, a noticeable number of studies (12 out of 29) have not employed an explicit theory or framework while providing valuable empirical insights (Table 1). This decision could be seen as a potential gap in the theoretical landscape, suggesting the need to develop more suitable frameworks that specifically address the unique characteristics and implications of digital

platform work and associated micro-data. To support this discourse, the synthesis of these empirical studies provides an opportunity to leverage nuanced differences in how individual experiences of workers are shaped for conjecturing a detailed representation of the relationships that shape livelihood outcomes.

In Figure 4, I have proposed an Integrated Digital Platform Livelihood Framework that builds on the learnings from this empirical analysis and previous works and critiques of sustainable livelihood framework, i.e. (Duncombe, 2007; Gigler, 2015; Mensah, 2011; Natarajan et al., 2022). This adaptation of SLF integrates the principles of community informatics, emphasizing the importance of socio-cultural and digital capital in shaping livelihood outcomes (Williams & Durrance, 2008). Similar to other concepts of SLF, the proposed framework is strongly influenced by the Capability Approach, which signifies the importance of enhancing people's capabilities, which refers to their real freedom to choose a life they would value (Nussbaum, 2005; Sen, 2001). It does not take a normative position on the strength or direction of interconnections between livelihood, contexts, resources, and outcomes. Instead, it offers an approach to reduce oversights in fully recognizing the environment in which workers make a living within the platform economy and how it may affect their development aspirations.
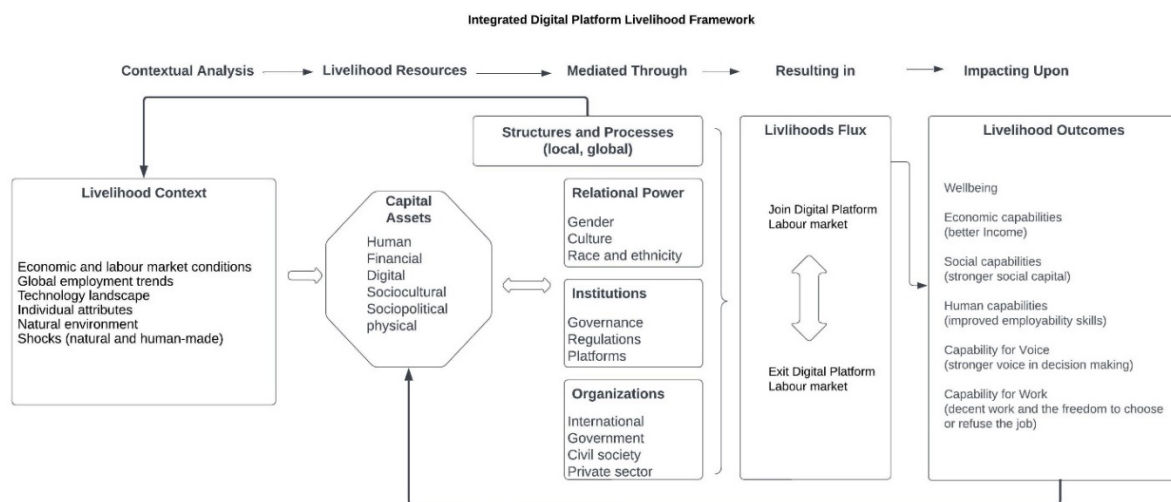

Figure 4: Integrated Digital Platform Livelihoods Framework, modified from Duncombe (2007)

Livelihood Contextual Analysis

The Integrated Digital Platform Livelihoods Framework emphasizes examining a range of livelihood contextual factors from a local lens as the starting point for recognizing the push and pull factors that shape workers' livelihood outcomes in the platform work economy. The proposed framework broadens the perception of livelihood context as a form of vulnerability (Solesbury, 2003) to account for the versatility and historical composition of socio-economic and labor market systems, technology landscapes, and resource environments representing

different ways of being and doing. Following the philosophical approach towards livelihood analysis by Natarajan et al. (2022), this approach towards contextual factors does not take a normative position towards the function of platforms labor in improving or impeding local labor market systems and economic structures. Instead, it offers openness and flexibility to examine such linkages through empirical evidence and theory to recognize the uneven distribution of livelihood outcomes and not just the vulnerabilities but also the opportunities local socio-economic systems have to offer.

This approach emphasizes examining local market conditions in relation to global employment trends to recognize the nuanced linkages between local livelihood strategies and global labor and skill-demand change (Melia, 2020). While some factors, such as global employment trends in the platform labor economy, may be generalizable, the diverse configurations of local economic and labor markets, individual attributes of workers, and the varying levels of digital divides resist the generalizability of platform' livelihood impact on workers (Idowu & Elbanna, 2019; Van Deursen & Helsper, 2015). Furthermore, the contextual analysis could also consider environmental factors and shocks, whether natural or human-induced, as these elements can make platform-mediated work a relatively better earning option or limit an individual's access to such work. For instance, the prevalence of shocks such as armed conflict and political unrest may result in recurrent internet shutdowns (Mukeredzi, 2017), restricting earning opportunities that largely depend on digital connectivity. These aspects hold particular significance for developing regions as the remoteness of some regions often results in inadequate access to traditional market opportunities despite the presence of skilled human resources (Malik et al., 2021b).

Livelihood Resources

Livelihood resources are the assets and strengths that empower individuals to make livelihood choices. The analysis of livelihood assets in the form of capital(s) provides an opportunity to recognize measurable and interrelated strengths of individuals in relation to their livelihoods (Duncombe, 2007; Mensah, 2011). These assets may include human capital, financial capital, socio-cultural and sociopolitical capital, physical capital, and, in the case of the platform economy, access to digital capital.[2] The studies in this review paper underscore the significance of human capital, characterized by skillsets, knowledge, and health in determining workers' well-being, economic opportunities on digital platforms, and career growth prospects (Eskelund et al., 2019; Malik, Fareesa et al., 2018). As discussed in the previous sections of this paper, some studies, e.g., Idowu & Elbanna (2021a) and Melia (2020), illustrate how workers often utilize their unique socio-cultural strengths to influence their livelihood outcomes and exercise agency, pointing to the significance of adequately accounting for workers' unique socio-cultural resource banks. The importance of socio-

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[2] The concept of Digital Capital, as defined by Ragnedda (2018) is the accumulation of digital competencies (information, communication, safety, content-creation, and problem-solving) and access to digital technology. It is considered a form of capital because, similar to other forms of capital, it can be accumulated and transferred from one arena to another.

cultural capital is also evident in promoting future career growth as these assets may provide access to networks that enhance opportunity discovery, foster resilience against platform inequalities, and help improve the quality of the work environment (Soriano & Cabañes, 2020).

A significant consideration related to different developing regions is the varying levels of the minimum financial and physical capital required to make the necessary investments for participating in platform labor, such as obtaining access to devices, renting a workplace, or initiating a new entrepreneurial venture (Elbanna & Idowu, 2021b; Gurumurthy et al., 2021; Panaligan & Curran, 2022). Some evidence points to the utility of physical capital and how it shapes the experiences of digital platform workers, e.g., having access to an independent or communal workspace is linked with well-being and career growth (Idowu & Elbanna, 2020). Moreover, recognizing the relationship between the level of the local digital divide and platform work outcomes is critical, as digital capital is a significant determinant of how digital disparities in access and digital skills influence the ability to gain consistent work and potential for career growth prospects (Keskinen et al., 2022; Varanasi et al., 2022).

Recognizing the nature of platform workers' cultural and sociopolitical capital is paramount for understanding workers' actions (or lack thereof) to improve their platform livelihoods. For instance, the lack of sufficient unionization options and the dispersed nature of digital platform labor reveal that workers' agency and voice greatly depend on alternative forms of sociopolitical capital (Wood et al., 2018). An exploration of how workers establish and employ such capital, for instance, through social media groups, online forums, and informal support groups, illuminates localized strategies may suggest that the absence of formal civil society structures does not equate to a lack of collective action (Malik et al., 2021b; Melia, 2020; Soriano & Cabañes, 2020).

Structures and Processes

All livelihoods are affected by an array of social relations and structural powers that shape and reshape one's access to livelihood resources (Ashley & Carney, 1999). The framework emphasizes that the transnational character of many digital labor platforms creates a livelihood environment in which workers are exposed to social relations and structural powers at both local *and* global levels. Consequently, the framework suggests examining institutions, organizations, and relational power dynamics at both scales to accurately capture the essence of platform work in distinct geographies.

Relational power dynamics such as gender, culture, and race carry significant implications within the global platform economy since this form of work still builds on the legacy of existing structures of inequalities that shape individual experiences (Graham, Hjorth, et al., 2017). For instance, as the empirical evidence unveiled, local gender and cultural dynamics may drastically shape access to digital work opportunities (Malik et al., 2021b). Similarly, racial and gender relational power imbalances disproportionately impact different developing regions (Panaligan & Curran, 2022). An important consideration is recognizing the

layered nature of local and global relational power dynamics affecting platform workers. In a global platform economy, gender, racial, and cultural differences may still influence workers' experiences and access to platform work opportunities. However, workers live and complete work tasks in specific geographic localities where local norms, gender roles, and cultural factors significantly shape their work experiences and access. In certain instances, this interaction between local and global relational power may reveal a novel positive impact, necessitating a cautious evaluation by researchers and policymakers (Varanasi et al., 2022)

Empirical studies highlight the varied nature of governance and regulatory regimes that interface with platform work ecosystems. For instance, the absence of institutional support may push some platform workers to perform platform work in hiding and face legal difficulties, e.g., transferring platform earnings to a local bank (Idowu & Elbanna, 2021b). The diversity of institutional support or revulsion may require targeted local research to emphasize the role of local and global institutions in improving the livelihood of platform workers. The framework also envisages platforms as institutions emphasizing their broad yet not fully defined role in shaping livelihoods in developing regions (Bonina et al., 2021; Kenney & Zysman, 2016). This viewpoint towards public or private-sector platforms acknowledges that, in some instances, platforms may step in to fill institutional gaps, functioning as social institutions themselves (Malik et al., 2021b). Similar to relational power, the distinction between local and global platforms is also noteworthy, as livelihood outcomes for workers may significantly vary depending on whether the platform operates locally or globally (Beerepoot & Oprins, 2022).

The framework suggests scrutinizing the unique roles that local and global organizations play across various regions and how these roles either enhance or hinder workers' experiences. This analysis is crucial as certain regions witness substantial government and civil society engagement in advocating for and facilitating the expansion of digital platform work. (Graham, Lehdonvirta, et al., 2017; Lehdonvirta et al., 2019). Lastly, the role of the private sector, though often less discussed, is a curial topic in the discourse of social and ethical responsibility at the client end of the platform work ecosystem.

Livelihood Flux

The notion of flux in the proposed framework indicates the turbulent nature of platform workers' livelihoods, which constantly evolve due to the short-term nature of work opportunities and the ongoing transformations in the macro labor market and technology landscape (Natarajan et al., 2022). This shift could motivate individuals to choose a range of strategies on the continuum of joining and leaving digital platform work, depending on how much their capital assets permit decision-making and the level at which structures and processes operate to facilitate better worker choices.

Livelihood Outcomes

This framework offered an opportunity to recognize how specific contextual factors and access to resources enable opportunities and shape individual choices to join or leave platform work. The framework also emphasized how such choices and livelihood outcomes are mediated through global and local relational power, institutions, and organizations. While the examination of the specific livelihood outcomes may differ based on specific research questions, a broad development perspective on the impact of digital platform work could envision these outcomes as a function that promotes access to decent and meaningful work, improves well-being, enhances workers' social and economic capabilities, offers opportunities for skill development, and fosters a stronger voice in decision-making. This flexibility enables the potential to conduct empirical examination through a spectrum of theoretical perspectives, such as the capability approach towards work and workers' voice (Bonvin, 2012) or a decent work agenda for digital platform work and well-being (Heeks et al., 2021).

Conclusions

This review examined the diversity of digital platform workers' livelihood conditions across various developing regions. Integrating community informatics perspectives provided a deeper understanding of the structural and contextual factors shaping platform workers' livelihood outcomes in various parts of the Global South. The findings indicate a complex development impact of digital platform ecosystems where platform workers are simultaneously empowered and disempowered by platform structures, socio-relational power, and institutional arrangements at both local and global levels. The layered nature of gendered, cultural, and racial relational power and local institutional constraints highlight region-specific barriers to exercising worker agency in the platform economy.

These insights highlight leverage points for improving the livelihood outcomes of those facing marginalization in both local and platform labor economies. The digitally connected but isolated work environment and the often-concealed nature of digital platform workers' livelihoods in the Global South underscore the need for integrated support systems involving government agencies, NGOs, digital platforms, and the private sector. A targeted approach towards strengthening these systems could help provide continuous training, access to financial resources, and legal support to digital platform workers.

As this review indicated, much of the digital platform work literature is built on empirical studies that are relatively small in size, underscoring the limitations in forming broader perspectives that could adequately represent entire population groups. The broad range of participant selection in the examined studies also highlights the critical need to better understand the impact of digital platform work on traditionally marginalized groups, including women, ethnic minorities, and individuals in remote areas. This research gap is particularly pronounced in regions undergoing large-scale development interventions to leverage platform labor to reduce widespread employment deficits.

As a proposed tool for evaluating the livelihoods of digital platform workers, the Integrated Digital Platform Livelihoods Framework emphasizes examining livelihood contexts as the

starting point for recognizing how platform workers' livelihood outcomes may transpire and differ for different groups. Future research should prioritize in-depth, localized studies considering specific skill sets and cultural and institutional contexts to avoid overgeneralization and provide insights into platform workers' unique challenges and opportunities in different developing regions. Expanding the participant base could provide a more representative understanding to help policymakers with statistically significant data that accounts for community contexts. Reducing this research gap could also support the development of localized policy frameworks that address the multifaceted nature of digital platform work, promoting forward-looking skills development opportunities, social protection, and equitable access to livelihood opportunities in different developing regions.

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