
Quality-of-Life Mapping for Gig Households: A Multidimensional Perspective

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Abstract

Indonesia's gig economy is expanding rapidly, yet debates on its welfare impact remain largely income focused. This paper widens the lens by mapping the quality of life of gig-worker households using nationally representative SUSENAS 2022 microdata and a Quality-of-Life Index (QLI) composed of seven policy relevant dimensions: food security (FIES), housing quality and crowding, access to safe drinking water and adequate sanitation, household energy (electricity and cooking fuel), digital assets and connectivity, children's school attendance, and health insurance coverage. Gig households are identified consistently through three complementary scopes core, extended, and broad classifying a household as gig when at least one member meets the respective criteria. Beyond comparing average QLI scores and dimension level components between gig and non-gig households, we estimate binary logistic regressions to assess the association between gig status and the likelihood of being classified as "well-off." The results indicate that gig-worker households are, overall, less well-off than other households, driven primarily by lower housing quality, more limited ease of access to household energy, and lower health-insurance coverage; by contrast, they display a clear advantage in digital connectivity, and differences in children's school attendance are not consistent. The gap is more pronounced among low-expenditure households, in rural areas, and in female-headed households, while urban and better-educated gig households show narrower differences. Policy directions follow directly from these patterns: prioritize affordable housing quality improvements, ensure easier access to household energy alongside targeted energy assistance for vulnerable gig households, and leverage digital channels to deliver information, skills training, and access to job opportunities more effectively.

Keywords: Gig economy, gig worker, household well-being, quality of life, Indonesia.

1. Introduction

The expansion of the digital economy has given rise to a new and increasingly dominant form of work in Indonesia, namely the gig economy (Yasih, 2023). According to the Indonesian Statistics Agency (BPS), the number of workers engaged in gig-related activities has surged from approximately 35.6 million in 2018 to an estimated 86.6 million by 2025 (see Figure 1). This sharp increase reflects

a structural transformation in the labor market, marked by the proliferation of short-term and part-time jobs facilitated by digital platforms, particularly in transport and service delivery sectors. Such developments illustrate a profound shift in how individuals earn their livelihoods, where temporal flexibility and work autonomy are key attractions. However, this also raises new challenges related to social protection, income stability, and long-term well-being (Vallas & Schor, 2020; Berg et al., 2018).

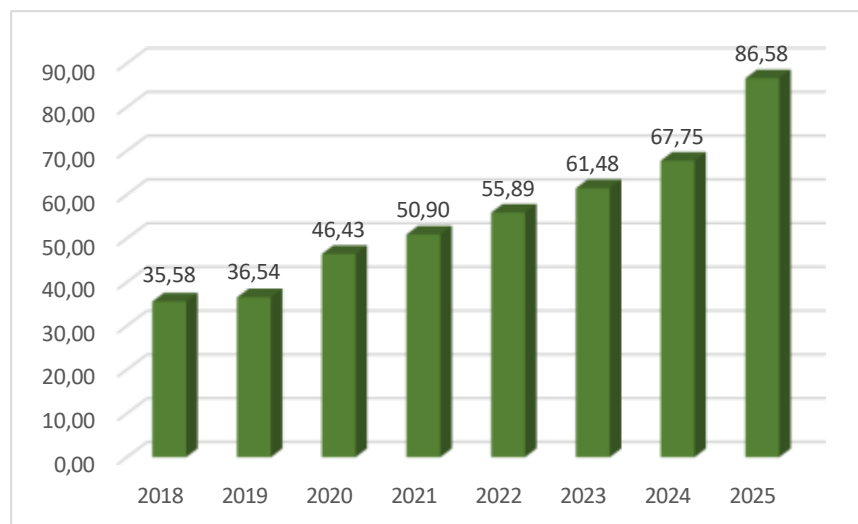


Figure 1. The Number of Gig Workers In Indonesia (Million Workers)

Source: Board of Statistics (BPS)

The gig economy in Indonesia has grown rapidly and increasingly shapes how households earn a living (Kässi & Lehdonvirta, 2018; Stephany et al., 2021; Wood et al., 2019). Despite the flexibility it offers, policy and research debates still tend to focus on income alone, even though recent well-being scholarship calls for multidimensional measurement beyond monetary indicators (Clausen et al., 2022; D’Attoma et al., 2024; Jansen et al., 2024). This narrow lens can obscure everyday conditions that determine quality of life, including housing quality, reliable household energy, safe drinking water and adequate sanitation, children’s school attendance, and health-insurance coverage all of which recent studies link strongly to welfare and health outcomes (Hajdu et al., 2024; Hock et al., 2024; Aweke, & Navrud, 2022; Acheampong et al., 2024; Yu et al., 2022; Pratiwi et al., 2021). When policy relies only on income metrics, interventions risk missing the binding constraints that gig-worker households face, making a broader set of well-being indicators essential (Clausen et al., 2022; D’Attoma et al., 2024).

Household well-being challenges among gig workers arise from a combination of volatile earnings, incomplete social protection, and uneven access to essential services (Wood et al., 2019; Schor, 2020; Behrendt et al., 2019). Earnings fluctuations make medium-term budgeting difficult for inelastic expenses such as rent, electricity, and school fees, a pattern widely observed under algorithmic management and variable platform demand (Wood et al., 2019; Veen et al., 2020; Schor, 2020). Housing conditions are often substandard or overcrowded, heightening health risks and reducing children’s study space (Hock et al., 2024). Reliable household energy both dependable electricity and safe cooking fuel remains uneven and costly for many, lowering the efficiency of daily activities (Aweke & Navrud, 2022). Safe drinking water and adequate sanitation remain fragile in some

areas, adding health burdens and unexpected costs. At the same time, gaps in health-insurance coverage leave families exposed to financial shocks when illness strikes. These constraints are typically harsher for low-expenditure households, in rural settings, and among female-headed households, reflecting structural disparities in labour markets and public services (Schor, 2020).

The available knowledge indeed demonstrates progress in capturing platform-based work and its implications for earnings and poverty status. However, current literature still leaves important gaps. Many studies rely on platform surveys or urban samples only, limiting their representativeness at the national level (Permana & Izzati, 2023). Welfare measures used are often unidimensional and seldom examine household quality of life comprehensively for example housing adequacy, safe water and sanitation access, energy security for cooking and lighting, and children's school continuity (Noak et al., 2024). Definitions of gig workers also remain inconsistent, frequently relying on single-profession proxies that fail to capture broader freelance non-platform work (Annazah et al., 2023). Moreover, systematic analysis by sub-groups such as low-expenditure households, rural versus urban households, and female-headed households remains rare, even though these factors often drive major inequalities. Many findings have yet to be connected to policy-relevant thresholds, making translation into concrete programme priorities difficult. At the same time, the digital advantages possessed by gig-households have been insufficiently linked with their deficiencies in basic services, producing a fragmented and sometimes contradictory empirical picture (Al Ayyubi & Asrofi, 2023).

This study seeks to address the persisting analytical gaps by extending the scope of welfare assessment beyond conventional income indicators. Rather than limiting measurement to monetary outcomes, the framework adopted in this research evaluates household quality of life across multidimensional aspects that are directly relevant for policy, encompassing basic living conditions, productivity-enabling factors, and access to social protection (Kim et al., 2023). By adopting this approach, comparisons between gig-worker and non-gig households become more equitable, allowing for the identification of structural advantages and vulnerabilities unique to gig households (Wood et al., 2019). This broader conceptualization is particularly important in contexts where gig work blurs the boundaries between formal and informal employment, resulting in ambiguous access to social security and unstable income streams (Vallas & Schor, 2020). Hence, expanding the assessment lens to multidimensional well-being is essential for understanding how digital labour markets reconfigure welfare risks across social groups, rather than merely redistributing earnings (Kässi & Lehdonvirta, 2018).

The novelty of this research lies in two core contributions. First, it shifts the analytical focus from narrow income-based evaluation toward a holistic understanding of household well-being that integrates both material and non-material dimensions of livelihood (Stephany et al., 2020). Second, it develops a more consistent and context-sensitive identification of gig households, aligned with the diverse and hybrid work practices observed in the digital labour market (Kuhn & Maleki, 2017). This dual innovation allows for a finer mapping of inequality by tracing outcomes across expenditure classes, rural–urban typologies, and demographic characteristics such as gender of the household head and dependency ratio (Wood et al., 2019). As a result, the empirical picture that emerges moves beyond aggregate averages, revealing the spatial and social contours of well-being disparities—where and

among whom they are most pronounced—and offering critical insights for policy responses that aim to balance flexibility with fairness in the future of work (Vallas & Schor, 2020; Kim et al., 2023).

The objective of this study is to provide a comprehensive assessment of the quality of life among gig-worker households compared to non-gig households, to identify the dimensions that contribute most to emerging disparities, and to evaluate how the association between gig status and decent living opportunities varies by household purchasing capacity, geographic location, and demographic characteristics. The accompanying aim is to establish an empirical foundation that remains robust under different operational definitions of gig work, ensuring that policy recommendations remain valid even when conceptual boundaries shift (Wood, Graham, Lehdonvirta, & Prassl, 2019). This goal reflects the growing demand for multidimensional evidence that captures the real welfare trade-offs embedded in digital and informal labour markets (Kim, Chung, & Woo, 2023).

Conceptually, this study reinforces the importance of mainstreaming non-income indicators when assessing gig workers' household welfare, recognizing that well-being encompasses both material and social dimensions (Vallas & Schor, 2020). Empirically, it provides a more complete and traceable mapping of household living standards, allowing comparisons across expenditure tiers, settlement types, and demographic groups (Stephany, Dunn, Sawyer, & Lehdonvirta, 2020). Practically, the results aim to assist policymakers in setting tangible priorities such as improving affordable housing conditions, expanding reliable household energy access, strengthening universal health protection, and leveraging digital platforms as effective channels for information, training, and access to job opportunities (Kuhn & Maleki, 2017; Kässä & Lehdonvirta, 2018). Through these contributions, the research aspires to enrich public discourse and provide a firmer foundation for designing inclusive and evidence-based policies that enhance the well-being of gig-worker households.

2. Research Method

2.1. Data

This study employs household-level data from the *National Socio-Economic Survey (Survei Sosial Ekonomi Nasional, SUSENAS)*, conducted annually by Statistics Indonesia (*Badan Pusat Statistik*). The SUSENAS provides nationally representative microdata on household composition, education, employment, expenditure, and living conditions, making it one of the most comprehensive sources for socioeconomic analysis in Indonesia. The analysis uses the March 2023 wave, which offers the most up-to-date cross-sectional information on post-pandemic household welfare and labor participation. The SUSENAS adopts a two-stage stratified sampling design. In the first stage, *Primary Sampling Units* (PSUs) are selected systematically within each stratum; in the second stage, a fixed number of households are randomly selected within each PSU. The sampling frame covers all 34 provinces of Indonesia and distinguishes between urban and rural areas, ensuring representativeness at both the provincial and district (*kabupaten/kota*) levels. All estimations in this study apply household sampling weights (*FWT*) provided by BPS to account for unequal selection probabilities and complex survey design.

2.2. Variabel Measurement

This study operationalizes *multidimensional household well-being* through six outcome dimensions, one main explanatory variable capturing *gig employment*, and a set of household-level controls. All variables are defined at the **household level**. Table 1 summarizes the definitions and measurement scales. The six outcome indicators capture complementary aspects of household welfare, aligned with the multidimensional poverty framework of Alkire and Foster (2011) and Indonesia's national SDG indicators.

1. Food Security

Food security reflects the household's ability to ensure sufficient and stable access to food throughout the reference period. Following the *Food Insecurity Experience Scale (FIES)* classification developed by FAO, households are categorized as *food secure* or *food insecure* based on self-reported experiences of food shortage, dietary reduction, or skipped meals.

2. Energy Access

Energy access measures the household's capability to meet both traditional and modern energy needs. A composite index is formed by averaging five binary components: access to electricity, clean cooking energy, household appliances (e.g., refrigerator), information and communication devices (computer or smartphone), and sufficient power capacity.

3. Education Ratio

Educational attainment is proxied by the ratio of school-age children (7–18 years) who are currently enrolled in school to the total number of children in that age group within the household. This indicator represents the household's success in sustaining children's education and preventing early school dropout. The ratio ranges from 0 (none enrolled) to 1 (all enrolled).

4. Health Insurance Coverage

Health protection is measured by the proportion of household members covered by any form of health insurance—public, private, or community-based. This ratio captures the household's access to formal health protection and is particularly relevant in the context of Indonesia's *Jaminan Kesehatan Nasional (JKN)* expansion. Higher values indicate broader insurance coverage within the household.

5. Housing Quality

Housing conditions are assessed through four indicators: (i) the quality of roof, wall, and floor materials; and (ii) the adequacy of living space, defined as at least 8 square meters per capita. The index is calculated as the average of these four binary components. A higher value (closer to 1) indicates better housing quality and less overcrowding.

6. Water and Sanitation Access

This dimension combines indicators of improved drinking water, water availability, and private sanitation facilities. A composite index is created by averaging these binary indicators, producing a continuous measure between 0 and 1. Higher values denote households with reliable access to clean water and sanitation infrastructure.

The principal explanatory variable in this study is gig employment of the household head, which serves as a proxy for household participation in digital or platform-based livelihoods. The concept of gig work refers to income-generating activities performed independently, often mediated by digital technologies, and typically characterized by flexible or task-based arrangements rather than permanent contracts. Such work increasingly represents a bridge between the formal and informal economies, especially in developing contexts where self-employment and digitalization intersect. In operational terms, a household is classified as a gig household if the household head is identified as a gig worker. This classification requires that the head is currently working, operates as a self-employed worker without permanent employees, is engaged in the service sector, and uses the internet for work-related purposes—such as remote work, online trading, or digital content creation. This definition follows the conceptual frameworks of Heeks (2020) and the International Labour Organization (2021), which highlight gig work as an emergent form of *digital self-employment* that blurs traditional boundaries between wage work and entrepreneurship.

To isolate the relationship between gig employment and multidimensional well-being, the regressions include household-level controls capturing demographic, educational, spatial, and financial characteristics. Demographic factors consist of the household head's age and marital status, reflecting life-cycle stability and family structure. Human capital is proxied by years of schooling, which influences productivity and access to digital or formal jobs. Household size accounts for dependency burden and intra-household labor capacity. A binary indicator for residence in Java captures spatial disparities between Indonesia's economic core and peripheral regions. Financial variables include access to savings and credit, representing liquidity and the ability to smooth income fluctuations, particularly relevant for gig workers facing unstable earnings.

2.3. Empirical Analysis

The empirical analysis investigates the association between gig employment of the household head and multiple dimensions of household well-being using a regression framework that accommodates both continuous and binary outcomes. Ordinary Least Squares (OLS) is applied to continuous indices such as energy access, education ratio, health insurance coverage, housing quality, and water and sanitation, while a logistic link is used for the binary indicator of food security. This unified approach ensures that each dimension of welfare is modeled consistently according to the statistical nature of its outcome variable. The general econometric specification can be expressed as:

$$y_{ij} = \alpha_j + \beta_{1j} \text{GigHead}_i + X_i' \gamma_j + \varepsilon_{ij},$$

where y_{ij} represents the welfare outcome j for household i ; α_j is a constant term; GigHead_i is a binary variable equal to one if the household head is engaged in gig work and zero otherwise; X_i is a vector of control variables capturing household characteristics such as age, marital status, education, household size, access to savings and credit, and locational attributes including urban–rural status and regional location; γ_j is the corresponding vector of coefficients; and ε_{ij} denotes the error term. The coefficient β_{1j} measures the conditional difference in each welfare dimension between gig and non-gig households, controlling for observed household characteristics.

To assess heterogeneity across economic sectors, the model is further extended by introducing an interaction term between gig employment and sector of activity as follows:

$$y_{ij} = \alpha_j + \beta_{1j} \text{GigHead}_i + \beta_{2j} \text{Sector}_{is} + \beta_{3j}(\text{GigHead}_i \times \text{Sector}_{is}) + X_i' \gamma_j + \varepsilon_{ij}.$$

Here, Sector_{is} is a dummy variable indicating whether the household head is employed in a particular service sector (transport, education, health, hospitality, or professional services), while β_{3j} captures the interaction effect reflecting the differentiated association of gig employment across sectors.

Descriptive statistics of the main variables used in the analysis are presented in Table 1. Table 1 compares the mean and standard deviation of key welfare indicators and household characteristics between gig and non-gig households.

Table 1. Summary Statistics

Variable	Gig Households		Non-Gig Households	
	Mean	SD	Mean	SD
Welfare Indicators				
Food security (1 = secure)	0.847	0.360	0.783	0.412
Energy adequacy index	0.760	0.088	0.609	0.207
Education ratio (7–18 yrs enrolled)	0.952	0.189	0.921	0.240
Health insurance ratio	0.685	0.501	0.717	0.483
Housing quality index	0.971	0.085	0.946	0.131
Water and sanitation index	0.890	0.229	0.772	0.321
Household Characteristics				
Age of household head (years)	41.99	9.86	48.82	13.28
Years of schooling (head)	11.30	3.27	8.87	4.15
Married (1 = yes)	0.800	0.400	0.804	0.397
Household size	3.57	1.40	3.63	1.61
Located in Java (1 = yes)	0.535	0.499	0.306	0.461
Has savings (1 = yes)	0.799	0.401	0.488	0.500
Has debt (1 = yes)	0.283	0.451	0.209	0.406

3. Results and Discussion

3.1. Result of Gig Employment and Multidimensional Quality of Life

The relationship between gig employment and multidimensional well-being has become a central issue in contemporary labour economics, as digital work continues to reshape household livelihoods across both developed and emerging economies. While gig work is often celebrated for expanding flexible employment opportunities, its welfare implications remain contested, particularly in countries with limited social protection infrastructure (Boeri et al., 2020; Kim, 2023; Schor et al., 2020). Understanding whether gig participation enhances or constrains household living standards thus requires a multidimensional perspective that accounts not only for income but also for basic services, security, and human development outcomes (Vallas & Schor, 2020).

The empirical findings presented in Table 2 indicate that gig employment is associated with modest but statistically significant improvements in several dimensions of household well-being, particularly in energy access, housing quality, and water and sanitation, while exhibiting weaker or even negative associations with health-insurance coverage. This pattern aligns with recent international studies emphasizing the dual nature of gig work simultaneously enabling economic participation while reproducing welfare vulnerabilities (Vallas & Schor, 2020; Wood et al., 2019). The positive effects on infrastructure-related dimensions suggest that the income flexibility derived from platform-based work can enhance short-term consumption capabilities, allowing households to maintain access to basic utilities such as electricity, clean water, and housing improvements (Hall & Krueger, 2018). These results corroborate findings from Southeast Asia and Latin America showing that digital labour income often translates into immediate improvements in living conditions but not necessarily into long-term security (Kim et al., 2023; Stephany et al., 2021).

Table 2. Gig Employment and Multidimensional Quality of Life

Panel	Outcome	Full Sample	Poor/Vulnerable Household	Rural Household	Female-Headed Household
A	Food security	0.058 (0.047)	0.086 (0.073)	0.256*** (0.099)	0.066 (0.053)
B	Energy access	0.068*** (0.002)	0.071*** (0.003)	0.102*** (0.004)	0.062*** (0.002)
C	Education ratio	0.006 (0.004)	0.003 (0.006)	0.002 (0.009)	0.004 (0.004)
D	Health insurance	−0.034*** (0.008)	−0.038*** (0.012)	−0.091*** (0.016)	−0.028*** (0.009)
E	Housing quality	0.010*** (0.001)	0.009*** (0.002)	0.021*** (0.003)	0.010*** (0.002)
F	Water & sanitation	0.898*** (0.119)	1.008*** (0.173)	0.814*** (0.174)	0.881*** (0.131)

*Notes: All regressions control for the age, years of schooling, and marital status of the household head, as well as household size, Java dummy, disability status within the household, savings ownership, and household debt. Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.*

However, the persistently negative association between gig employment and health-insurance coverage underscores a critical institutional gap. Gig workers often operate outside formal employment systems and therefore lack access to statutory social protection schemes a trend widely observed across emerging economies (Boeri et al., 2020). The results confirm that while gig work can raise material aspects of welfare, it does not necessarily secure social rights or health security. Similar conclusions were reached by Wood et al. (2019), who found that despite improved autonomy, gig workers in African and Asian digital platforms faced persistent exclusion from health insurance and pension programs. This reinforces the argument that welfare enhancement among gig households depends less on earnings alone and more on policy frameworks that extend coverage to non-standard forms of employment.

From a distributive perspective, the heterogeneity analysis shows that rural and poor/vulnerable households experience relatively larger gains from gig participation in basic needs fulfilment, especially energy access and water, compared to their urban counterparts. This finding is consistent with cross-country evidence that digital labour markets have become new income-diversification channels for marginalized groups in areas with limited formal jobs. Yet, the female-headed households in this study continue to display lower gains in health and education dimensions, suggesting that gendered barriers in digital access and time allocation persist (van Doorn, 2017). Thus, the findings collectively point to a multidimensional trade-off: gig work can buffer consumption vulnerability but remains insufficient to secure structural well-being without complementary institutional safeguards.

3.2. Result B

The estimates indicate that households with gig workers tend to perform better on basic utility dimensions, such as energy access, housing quality, and water and sanitation—while exhibiting lower coverage of health insurance. This configuration is consistent with international evidence showing that platform work expands access to liquid, short-cycle earnings that are well suited to pay-as-you-go household expenses without the need for long-term employment contracts (Burtch, Carnahan, & Greenwood, 2018; Hall & Krueger, 2018). Yet, because platform-mediated labor is typically organized as non-standard or independent contracting, workers are not automatically enrolled in employer-provided benefits, a gap that plausibly manifests as lower health insurance coverage (De Stefano, 2016; Eichhorst, Rinne, & Tobsch, 2018; Spasova, Ghailani, & Vanhercke, 2022).

Two mechanisms in the international literature help explain the positive coefficients on core utility outcomes. First, temporal flexibility allows household members to scale labor supply in response to near-term liquidity needs, smoothing cash flows for recurrent utility payments and incremental home improvements (Hall & Krueger, 2018). Second, low entry barriers into platform work in urban markets create rapid access to supplementary earnings that households often channel toward basic living standards, especially where utility infrastructure is already in place (Wood, Graham, Lehdonvirta, & Hjorth, 2019; Veen, Goods, & Barratt, 2020). This dovetails with your findings on housing and water–sanitation and is also compatible with the observed urban concentration of online labor opportunities (Kassi, Lehdonvirta, & Stephany, 2021).

By contrast, the negative association with health insurance aligns with a well-documented social-protection gap for non-standard workers. Comparative studies across Europe and the United States show that independent contractors and platform workers face fragmented eligibility rules, voluntary contribution regimes, and income volatility, all of which depress participation in contributory insurance schemes (De Stefano, 2016; Eichhorst et al., 2018; Johnston & Land-Kazlauskas, 2019; Spasova et al., 2022). Your estimate therefore mirrors a broader pattern of benefit exclusion that arises from employment misalignment rather than from worker preferences alone.

The near-zero association with children’s schooling ratios is also coherent with recent evidence. While flexible scheduling and incremental income could support educational continuity, algorithmic management and uncertain workloads introduce substantial earnings volatility that can offset these gains, yielding small short-run effects on schooling investments (Wood et al., 2019; Schor, Attwood-

Charles, Cansoy, Ladegaard, & Wengronowitz, 2020). In short, the international literature predicts precisely the ambivalence your model captures for education outcomes.

Table 3. Gig Employment and Multidimensional Quality of Life

Variable	Food Security	Energy Access	Educatio n Ratio	Health Insuranc e	Housing Quality	Water & Sanitatio n
Gig Workers	0.058 (0.047)	0.068*** (0.002)	0.006 (0.004)	-0.034*** (0.008)	0.010*** (0.001)	0.898*** (0.120)
Control Variables						
Age (years)	0.007*** (0.000)	-0.001*** (0.000)	-0.002*** (0.000)	0.004*** (0.000)	0.001*** (0.000)	0.019*** (0.001)
Years of Schooling	0.061*** (0.001)	0.010*** (0.000)	0.005*** (0.000)	0.010*** (0.000)	0.003*** (0.000)	0.084*** (0.002)
Married (1 = Yes)	0.338*** (0.012)	0.044*** (0.001)	0.036*** (0.002)	0.049*** (0.002)	0.010*** (0.001)	-0.034* (0.019)
Household Size	-0.078*** (0.003)	-0.002*** (0.000)	0.002*** (0.000)	-0.020*** (0.001)	-0.013*** (0.000)	0.009* (0.005)
Java Region (1 = Yes)	0.455*** (0.010)	0.051*** (0.001)	0.002 (0.001)	-0.067*** (0.002)	0.004*** (0.000)	0.951*** (0.019)
Has Savings (1 = Yes)	0.509*** (0.010)	0.089*** (0.001)	0.018*** (0.001)	0.058*** (0.002)	0.020*** (0.000)	0.609*** (0.016)
Access to Credit (1 = Yes)	-0.238*** (0.011)	0.025*** (0.001)	0.005*** (0.001)	0.000 (0.002)	0.003*** (0.001)	0.254*** (0.019)
Constant	0.146*** (0.027)	0.490*** (0.002)	0.908*** (0.004)	0.461*** (0.005)	0.920*** (0.001)	0.397*** (0.043)
Observation s	322,350	322,350	176,971	322,350	322,350	322,350

Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Finally, the pattern on controls positive roles of savings and credit access, and location effects consistent with urban service availability reinforces the internal validity of the main estimates and aligns with established findings on household welfare under labor-market precariousness (Kalleberg & Vallas, 2018; Kassi et al., 2021). Taken together, the results suggest that gig work can function as a household income stabilizer for essential utilities, yet it does not substitute for portable social protection.

3.3. Result C

Interpreting sectoral heterogeneity is essential for understanding how gig employment translates into household well-being. Platforms do not simply “add income”; they embed distinct cost structures, temporal rhythms of demand, and governance practices that condition whether short-cycle cash flows can be converted into durable improvements in basic needs. Your sector-by-sector estimates provide an opportunity to read these mechanisms directly in the data.

The transport results are consistent with what is now well documented for ride-hailing and delivery: drivers face high and largely non-discretionary operating costs—fuel, maintenance, depreciation, insurance—that compress disposable earnings and make monthly surpluses fragile. Micro-evidence and detailed cost diaries show that net margins are thin and highly exposed to demand swings, which helps explain why the positive baseline association of gig work with utilities (energy, housing, water/sanitation) weakens once transport is singled out (Henao & Marshall, 2019; Tirachini, 2020). At the same time, participation persists because flexibility has measurable value to workers who need to smooth liquidity between fixed expenses, a point corroborated by causal evidence on the option value of flexibly adjustable hours (Chen, Chevalier, Rossi, & Oehlsen, 2022). The combination of valuable flexibility and razor-thin margins fits the pattern you observe: persistence in transport gigs without commensurate gains in utility-related outcomes, and only dimension-specific exceptions where institutional intermediaries or group arrangements temporarily improve access to benefits.

Findings for the health/care segment plausibly differ because tasks are closer to regulated or credentialed services and often intersect with agencies, client audits, or compliance checks. Platformised care work is associated with tighter screening and documentation, and with client expectations that nudge workers toward more formal arrangements, including health-coverage uptake, even when standard employment is absent (Ticona & Mateescu, 2018; Kaine & Josserand, 2019). Such institutional spillovers provide a coherent explanation for the comparatively favorable interaction you estimate on health-insurance coverage in the health sector, despite the broader gig context.

Hospitality-linked gigs, especially food delivery, typically share the volatility of transport but add intensified competition and task-batching that transfer operational risk to workers. Small policy changes or demand seasonality can produce large swings in effective hourly pay, limiting households’ ability to channel earnings into lumpy upgrades such as durable housing improvements or water-sanitation fixes. International syntheses and city-level studies describe precisely these dynamics, which align with your negative interactions for basic utilities in hospitality (Tirachini, 2020; Henao & Marshall, 2019).

For professional online freelancing, the mixed pattern is consistent with two well-established frictions. First, returns are strongly segmented by reputation capital: established contractors with verified histories command higher rates and steadier pipelines, while new entrants experience long ramp-up periods and high earnings volatility (Kokkodis & Ipeirotis, 2016; Agrawal, Horton, Lacetera, & Lyons, 2015). Second, market design and policy shocks—such as fees or minimum-price rules—can reshape matching and effort in ways that dampen short-run household spillovers even when

median task prices are higher (Horton, 2017). Together, these frictions explain why the professional segment need not show immediate gains in basic-needs indicators, despite its higher skill content.

Table 4. Sectoral Heterogeneity of Gig Employment Effects on Multidimensional Well-being

Variable	Food Security	Energy Access	Education Ratio	Health Insurance	Housing Quality	Water & Sanitation
Panel A. Transport Sector						
Gig Workers	0.055 (0.049)	0.073*** (0.002)	0.006 (0.004)	−0.039*** (0.009)	0.011*** (0.001)	0.926* ** (0.125)
Transport Sector	−0.157*** (0.022)	0.046*** (0.001)	0.008*** (0.002)	0.004 (0.004)	0.002* (0.001)	0.755* ** (0.047)
Gig × Transport	0.090 (0.173)	−0.070*** (0.007)	−0.010 (0.014)	0.060** (0.028)	−0.017*** (0.006)	−0.756 * (0.440)
Panel B. Health Sector						
Gig Workers	0.063 (0.047)	0.069*** (0.002)	0.006 (0.004)	−0.034*** (0.008)	0.010*** (0.001)	0.891* ** (0.120)
Health Sector	0.213*** (0.035)	−0.008*** (0.002)	0.003 (0.003)	0.061*** (0.005)	0.000 (0.001)	0.050 (0.061)
Gig × Health	0.082 (0.546)	−0.055*** (0.018)	0.021 (0.017)	0.169*** (0.045)	−0.018 (0.016)	0.000 (.)
Panel C. Hospitality Sector						
Gig Workers	0.074 (0.050)	0.070*** (0.002)	0.008* (0.004)	−0.037*** (0.009)	0.011*** (0.001)	0.880* ** (0.124)
Hospitality Sector	0.050* (0.028)	0.068*** (0.001)	0.002 (0.003)	0.012** (0.005)	0.006*** (0.001)	0.964* ** (0.069)
Gig × Hospitality	−0.173 (0.145)	−0.053*** (0.005)	−0.019 (0.016)	0.015 (0.023)	−0.015*** (0.005)	−0.496 (0.474)
Panel D. Professional Sector						
Gig Workers	0.058 (0.047)	0.069*** (0.002)	0.006 (0.004)	−0.034*** (0.008)	0.010*** (0.001)	0.916* ** (0.121)
Professional Sector	0.376*** (0.087)	0.034*** (0.003)	0.014** (0.006)	0.021* (0.013)	0.008*** (0.002)	0.567* ** (0.169)
Gig × Professional	−0.202 (0.451)	−0.044*** (0.010)	0.004 (0.017)	−0.012 (0.058)	0.007 (0.007)	−1.403 * (0.795)

A cross-cutting interpretation emerges from these sectoral contrasts. Where variable costs are high and passed through to workers (transport, hospitality), the liquidity of gig income is largely absorbed before it can be invested in household utilities. Where tasks are intertwined with regulated services and third-party oversight (health/care), specific social-protection dimensions—for example, insurance coverage—can improve relative to other gigs. Where revenue depends on accumulated reputation and search frictions (professional freelancing), benefits arrive more slowly and unevenly across workers. The estimates in your table map cleanly onto this triad of mechanisms, reinforcing the view that the welfare effects of gig work are real but contingent on sectoral cost structures, institutional intermediation, and reputation dynamics.

4. Conclusion and Recommendations

Using nationally representative SUSENAS 2022 microdata and a multidimensional Quality-of-Life framework, the paper shows that gig employment is not uniformly detrimental nor uniformly beneficial for household welfare. On average, gig households exhibit clear advantages in basic utilities—notably energy access, housing quality, and water–sanitation—consistent with the liquidity and flexibility of platform earnings that ease pay-as-you-go expenditures. At the same time, gig status is negatively associated with health-insurance coverage, indicating a persistent protection gap typical of non-standard work arrangements. Schooling and food-security differences are small or statistically weak, suggesting limited short-run effects on human-capital investments. The effects are sectorally heterogeneous: transport and hospitality attenuate the utility gains because of high operating costs and demand volatility; health/care gigs are relatively more compatible with insurance uptake; and professional online freelancing shows mixed results consistent with reputation and market-entry frictions. Overall, gig work can function as a household stabilizer for essential services, but its welfare dividends remain dimension- and sector-specific and are constrained by institutional gaps in social protection.

Prioritize portable, pro-rata social protection for non-standard workers (with micro-contributions, default enrollment via platforms, and targeted subsidies for low-expenditure, rural, and female-headed gig households), stabilize take-home earnings in transport and hospitality through cost-indexed pay guidance and pooled vehicle insurance/maintenance schemes, leverage credentialing and agency partnerships in care platforms to auto-link workers to health coverage, accelerate income stability for online freelancers via verified skills passports and cross-platform reputation transfer coupled with concise digital-skills support, and use data-driven targeting to convert documented gains in utilities into durable housing, water, and sanitation upgrades—while instituting light, sector-specific monitoring of effective hourly earnings and coverage outcomes to iteratively adjust these policies.

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