
Impact of Job Insecurity and Income Volatility on Social Security of Gig Workers: The Mediating Role of Social Capital

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DOI: <https://doi.org/10.70670/sra.v4i1.2588>

Abstract

This study investigates the relationship between job insecurity, income volatility and social security among gig workers in Pakistan, and explores the mediating effect of social capital in this relationship. A quantitative cross-sectional research design was used. The data were obtained by distributing a questionnaire online to 400 gig workers in Pakistan, and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to evaluate the direct and indirect relationships proposed. The results indicate that job insecurity and income volatility are negatively associated with social capital, while social capital is positively associated with social security. The findings further demonstrate significant indirect effects of job insecurity and income volatility on social security through social capital, highlighting the importance of social networks and relational resources in conditions of precarious platform work. The findings suggest that policymakers should strengthen social insurance arrangements for gig workers and encourage greater platform participation in social protection. Digital labor platforms may also support worker well-being by facilitating community-building and network-based support mechanisms. This study extends research on gig-work precarity by integrating job insecurity, income volatility, social capital and social security within a single empirical model in the Pakistanis context. It also highlights social capital as an important mechanism linking precarious employment conditions with workers' access to social security.

Keywords: *Job Insecurity, Income Volatility, Social Security, Social Capital, Gig Workers*

1. Introduction

The gig economy is growing throughout the world due to advancements in technology and an increase in digital platforms that assist in flexible and short-term arrangements. It means the labor market is based on short-term agreements or freelancing rather than a permanent job. At the dawn of the 21st century, this model is rapidly growing worldwide, transforming traditional jobs into the contemporary labor market (Soni et al., 2025). The modern technological era that has boosted different devices and tools such as smartphones, mobile applications, and various online platforms is a fundamental source of the gig economy. This shift of technological advancement allows workers to develop a network with employers for short-term jobs (Yousef, 2024). The contemporary economic advancement has resulted in a free-market system that enables self-employed workers to serve in various domains without having long-term or permanent employment contracts (Batmunkh, Fekete-Farkas, & Lakner, 2022). The gig economy is rapidly growing internationally, offering advanced job opportunities and reconstituting the economic model (Banik & Padalkar, 2021).

Gig work refers to various temporary and short-term jobs that are created through digital platforms. It is categorized by specific temporary tasks and employment that is not based on formal job contracts with job security and traditional benefits. Moreover, gig workers adopt specific tasks that match their preferences and schedules. The gig economy, therefore, entirely relies on modern technology and is associated with an autonomous, flexible, and performance-based income structure (Malik, Visvizi, & Skrzek-Lubasińska, 2021). In addition, self-branding is an essential component for gig workers, particularly in an economic market where service-based work is prominent, as they have to compete for opportunities in the fiercely competitive market (Curran & Jenks, 2023). The modern era, where gig employment is prevalent, has become the core feature of the contemporary labor market, particularly in urban areas where digital labor is often interconnected with immigrant labor (Van Doorn, Ferrari, & Graham, 2023). All over the world, the gig economy is rapidly growing, offering critical support to countries facing poverty and unemployment challenges, such as India, which provides job opportunities in response to workforce shortages (Mehta, 2023). In Malaysia, the gig economy has revealed significant growth between the years 2016 and 2021, in which the digital platforms played a critical function in fostering economic activities (Ahamad et al., 2023).

Regardless of its advantages, the gig economy has faced various challenges such as a lack of job security, irregular income, and potential for employees' mental breakdown because in the market economy, this model is algorithmically controlled (Lang et al., 2023). The gig economy is affecting different industries and regions in different ways, which requires policies supporting the welfare of workers along with connecting technological advantages for sustainable economic development (Banik & Padalkar, 2021b). The traditional social security structure confronted substantial challenges in addressing the problems of gig workers, mainly due to the nature of gig work. Gig workers usually engage in an informal job structure, lack the predictability and stability attached to the traditional job system. This informal structure of employment contributes to the insecurity, exploitation, and lack of social security benefits of gig workers. In this regard, the gig economy influences unemployment benefits, health insurance, and retirement benefits (Pankaj & Jha, 2024). In addition, the gig workers have to face challenges of entering into the platform, such as poor payment structure and high competition that perpetuate their unstable employment status (Behl et al. 2022).

Gig workers often face distinct vulnerabilities that intensify their lack of social security benefits. They experience low wages, long working hours, and an intensified threat to job security, leading to hazardous living conditions. Several gig workers, particularly those from poor socioeconomic backgrounds, face discrimination that further escalates their vulnerabilities (Pankaj & Jha, 2024). These conditions are intensified by the fragmented nature of gig work, where workers must work independently and may face challenges like a lack of peer support, restricting their ability to support improved benefits and conditions (Yao et al., 2021). For the wellbeing and sustainability of gig workers, it is essential to address social protection gaps. Due to the absence of a formal protection system, gig workers often rely on informal socioeconomic networks, which are unstable and incapable of replacing an inclusive social security mechanism (Ray, 2024). Social protection is not merely essential for gig workers' wellbeing but also for promoting social justice and minimizing the financial gap within society (Au-Yeung & Qiu, 2022).

In essence, the built-in mechanism of gig workers contains substantial challenges for providing traditional social security benefits; moreover, it makes gig workers vulnerable to different forms of insecurity and exploitation. It is essential to address these challenges through an inclusive and innovative policy designed to enhance social security and promote an inclusive labor standard in the gig economy. Identification of the research problem is essential as it describes the focus and scope of the research. Due to the novelty and complexity, some research problems in strategic management cannot be approached using standard hypothetico-deductive reasoning but require a phenomenon-driven approach (Graebner et al., 2023). The current research problem, identified from practical issues and gaps in existing literature, requires investigation. For instance, it is a significant research problem in the context of employee retention to understand how extensive data and prognostic analysis can be applied because these technologies have

varying and complex implications (Singh et al., 2022).

This study explores the profound influence of the gig economy factors on social security workers, highlighting the diminished access these workers have to key social security benefits such as health care, retirement benefits, and unemployment insurance in the context of constant uncertainty. This has, in turn, entrenched a pattern of financial insecurity and social isolation. The study underlines, however, the importance of social capital for workers to deal with uncertainty, manage instability and demand better protection. The research highlights the side-effects of the gig economy through a thorough empirical analysis and suggests possible routes to build resilient social protection systems for policy makers and societies. Finally, this work is meant to make sure that Innovation and economic growth don't affect human dignity in a changing labour landscape. *The detailed introduction is narrated in the first section, followed by the literature review and then the variables, theories and their relation are explained, and finally the model is developed. The methodology is discussed in Section three and the data analysis and interpretation in Section four. At the end of the conclusion, implementation and future insights are given.*

2. Literature Review and Theoretical Framework

2.1 Precarity Theory and Labor Process Theory

The income volatility and Precarity theory, along with Labor process theory, provide important understandings of the gig economy with its attendant issues of job insecurity. Precarity Theory highlights the precariousness and uncertainty of gig work employment. This can often be work that is not covered by the more secure employment categories that are generally accompanied by job safety and benefits. Gig workers are especially at risk of financial instability and exploitation due to their unregulated job positions. The theory puts forward that gig workers experience low incomes and long hours, as well as an ongoing fear of job loss, which reduces their overall comfort and stability (Apouey et al., 2020; Pankaj & Jha, 2024). One of the key characteristics of the gig economy is that it is an intersectional phenomenon, involving sex, socio-economic status and immigration status. Other groups of workers, such as migrant workers and women, face additional layers of risk because of gender bias in the regulatory arena and its lack of inclusion of these groups in labour protection. The technology-driven nature of gig work exacerbates these imbalances as platform and algorithm structures perpetuate current social hierarchies and biases, leading to extra prevarication (Vyas, 2021).

Latest Research has also highlighted precarity as an issue in gig employment, pointing to the fact that although gigs are a concern, they are still secondary sources of income for most participants and thus exacerbate income-poor workers' vulnerabilities (Wood & Lehdonvirta, 2023). The Labor Process Theory examines the transformation of labour process, especially the effect of digital platforms on working conditions and the labour process. But in the gig economy, algorithmic management is the one that is in control, limiting their autonomy and agility – even if they seem to be independent. This creates a relationship of transactions between the workers and the platforms: the performances of workers are judged and constantly monitored by algorithms and accordingly affect the stability of their earnings and the security of their working life (Giustini, 2024).

Discuss how the gig economy changes the nature of work and highlights the risks involved in the gig economy, such as heightened performance and competition pressures. Elusive elements of the constant when negotiating workload and availability may result in mental fatigue and reduced job satisfaction, blurring the lines between job security and personal health and wellbeing (Glavin, Bierman, & Schieman, 2021). In Emerging Research, the socio-technical aspects of platforms are foregrounded, wherein platforms become sites where worker communities discuss their well-being while dealing with technological effects (Glavin et al., 2021). Both precarity theory and the theory of the labour process have drawn attention to the tremendous income fluctuations and job insecurity of gig workers. Theoretical frameworks show that although gig work can offer some flexibility and autonomy, it can also lead to increased vulnerability and instability in the economic labor

market (Apouey et al., 2020). Existing research indicates that drivers of gig work (including wage factors) can influence these precarious dynamics.

2.2 Social Capital Theory

The Social capital theory is a multidimensional social science, with emphasis on the significance of social network and social relationship, as well as further community involvement. Social capital, in essence, is the robustness of community systems and social ties, which improve inter-personal cooperation and collaboration. They are essential for outcomes in a range of areas from health to education to more economic opportunity (Chetty et al., 2022). Generally, social capital is divided into three categories: bonding, bridging and linking (Abane, Adamtey & Kpeglo 2024; Zhao & Li, 2021).

The Social capital plays a crucial role in reducing precarity, especially for marginalised groups and in the labour market. Precarity is sometimes related to precarious economic situations, insecurity and unequal access to labor markets. Social capital may have implications for these dynamics, through its ability to foster collaboration, resources sharing, and additional collective problem-solving. In disasters or economic crises, for example, communities with high social capital have enhanced access to mobilization of resources and psychological support, which helps to alleviate precarity (Bernados & Ocampo, 2024). Social capital, especially economic capital (bridging and social capital) contributes to a higher level of connectedness that improves Socioeconomic upward movement because it allows disadvantaged groups to access new and promising opportunities, minimizing precarity (Chetty et al., 2022).

Social capital also has the potential to reduce precarity in the labour market by addressing structural inequalities, such as caste-based, class or race. For instance, while the distribution of social capital introduces precarity among marginalized groups, a strengthening of social networks can mitigate inequalities in addition to improving resource distribution more equitably (Soundararajan, Sharma & Bapuji, 2024). The literature reviews in recent systematic reviews on the gig economy reinforce the importance of social capital, indicating that it is intrinsic alongside motivation, significantly fosters job commitment and satisfaction among workers. Moreover, Research on solidarity in gig work indicates that workers' dependency on platforms influences their engagement in collective actions, where social capital acts as a facilitator for building resilience (Soundararajan et al., 2024).

2.3 Job Insecurity and Income Volatility in Gig Work

In understanding the conditions of work with the gig economy, income volatility and job insecurity are decisive factors. These ideas are clear and measured in various ways across existing literature and explored extensively in recent studies. Job insecurity is frequently described by fear or uncertainty regarding the stability and continuity of one's employment. The Gig workers frequently experience job insecurity due to the informal and irregular nature of their employment. This insecurity manifests not only in fears of job loss but also in reduced social security and employment benefits (Jiang, Xu, & Wang, 2021). The Gig workers are prone to income volatility due to the nature of their work, which is often dependent on task availability and precarious platform algorithms. Self-employment, for the most part in the gig economy, is associated with higher risks of fluctuating income and is compounded by lower levels of social insurance (Henley, 2021).

Research emphasizes how the gig economy contributes to a novel form of precarity due to disrupted traditional employment norms. Studies must document increased economic hardships and job insecurity, such as inability to pay bills and food insecurity, especially during crises like the COVID-19 pandemic (Auguste, Roll, & Despard, 2024). The Gig platforms exacerbate reputational insecurity and change the ways of securing and constructing professional reputations, leading to higher levels of uncertainty (Wood & Lehdonvirta, 2023). Despite these difficulties, some gig work is flexible and offers autonomy, which could help to support the environment of the workplace if managed properly (Wan et al., 2024). Empirical Research explores further the difficulties and motivations, finding that wages are a major determinant of entering into gig work and the

low barriers of entry on the digital platforms deepen income volatility. In addition, the stress and isolation that the gig workers suffer due to precarious employment has an effect on their overall quality of life, as Research on precarious employment has shown (Zhou, 2024).

2.4 Social Security and Gig Workers

Social security of gig workers is a complex matter, especially for people working in the gig economy, which presents a unique set of problems. The Gig workers typically do not fit into the old moulds of employment and have been traditionally used to determine eligibility for social security and benefits. This has left these people without the full social security coverage and there is an ongoing battle to achieve this. Gig economy is defined as a labor market model in which work is usually short-term and flexible, but is facilitated through digital platforms and in which work is not performed on the basis of 'work performed for another party' which is understood as a situation in which someone is working for the benefit of the other. That's to say that they are left out of a lot of standards, and therefore do not have the right to many social benefits, like health insurance or retirement or unemployment insurance, if they are offered by their employer. Such a lack of coverage may lead to economic insecurity for the gig workers, especially if they are not able to work because they are sick or during economic downturns (Salmen & Festing, 2021).

For the gig workers, the current state of social protection varies widely across countries and sectors. Moreover, some countries have begun to address these gaps by implementing policies aimed at extending social security benefits to gig workers. For instance, introducing portable benefits systems that allow individuals to retain benefits such as retirement savings or health insurance, regardless of their current employment status. Moreover, some jurisdictions must look into redefining the employment status of the gig workers to grant them the same rights and protections as the traditional employee workforce (Van Doorn, Ferrari, and Graham, 2023). The Current report from 2024 to 2025 reveals a persistent desire among gig workers for better health insurance and retirement security, with a significant portion expressing unmet needs in these areas. The policy discussion highlights the high point of competition in extending social assistance and insurance, repeatedly complicated by the misclassification practices that deny workers benefits. Tax obligations for self-employed gig workers further strain their financial security, so they cover together the employee workforce and the manager portion of the social security contributions.

The tests for extending social security coverage to gig workers are numerous. Firstly, there is often resistance from platforms; thus, the benefit from the independent contractor model is that it allows them to avoid reducing operational costs and social security contributions. Secondly, existing legal structures were designed with traditional employment relations in mind and can be easily adapted to the fluid and diverse nature of gig work. Moreover, lastly, there is a need for international collaboration as the gig economy and platforms often operate across borders, further presenting additional layers of complexity in enforcing local labor regulation or the social security systems (Salmen & Festing, 2021).

2.5 Social Capital as a Mediating Factor

There is a significant role of social capital in the labor market, and it is gradually affecting the dynamics of gig work. The incorporation of gig work, especially in the economy of urban areas, identifies the dual function of social capital as both a restrictive and supportive force. Social capital in the context of gig work refers to the networks and relationships that provide access to opportunities and resources (Abane, Adamtey, & Kpeglo 2024). Social capital plays a significant role in determining outcomes of the labor market by influencing income levels, job access, and job stability. For example, those migrant workers are an important part of the gig economy, usually using their social networks to find job opportunities and manage the uncertainties of gig work. According to the Research that identifies the urban economic requirements, comprehensive policies are often needed to mitigate the problems of migrant employees, highlighting the need for both institutional support and social capital to enhance labor conditions (Van Doorn, Ferrari, and Graham, 2023).

Social capital in the gig economy is revealed through several mechanisms. Gig workers form a network of relationships to access opportunities and improve bargaining power. For instance, it is proposed by platform cooperativism that the use of social capital for shared social capital enhances worker governance and autonomy. It includes creating employee-owned cooperative platforms that empower employees by giving them control over projects and tasks (Christiaens, 2025). In addition, gig workers are significantly influenced by workplace stability and satisfaction through job autonomy, which is mediated by emotional well-being and social networks (Wan et al., 2024).

2.6 Research Gaps in Understanding Social Capital's Mediating Effects

The literature shows that multiple research gaps exist related to the mediating effects of social capital in a gig economy. Specifically, the interrelation between social capital and migration status, occupational norms, and governance of institutions is under-researched. The existing evidence suggests the necessity of the policies and empirical Research that should focus on the interaction of family influence and economic hardship in priority areas in times of crisis, like the COVID-19 pandemic, increasing precarity among gig workers (Auguste, Roll, and Despard 2024b). In addition, the process of algorithmic management and its impact on worker autonomy is a highly relevant field of study, requiring an examination of the role of social capital as a remedy to the controlling effects of management (Au-Yeung & Qiu 2022b; Keşâne & Spuriņa, 2024). The recently updated systematic reviews highlight the lack of analysis of the mediating role of social capital between precarity and well-being; however, there is a need to focus more on interdisciplinary perspectives of policy implications in the digitalized gig environment.

2.7 Gaps in Current Understanding

Although there is considerable Research on income volatility and job insecurity at a global level, significant gaps remain, particularly concerning. The impact of local economic, regulatory environments, and cultural factors on job insecurity and income volatility remains underexplored. For instance, the interplay between the gig economy and local welfare systems in Australia shows unique form of accidental flexicurity, emphasizing how these factors can differ significantly across contexts (Veen et al., 2024). The empirical evidence highlights that there are variations between the experiences and job satisfaction of female and male gig workers, with various motivations and constraints influencing their experiences in different societies (Sarker et al., 2024). To develop policies that are inclusive, an understanding of the role of gender role and inequalities in gig work is essential. The consequences of gig working on job insecurity and the governance mechanisms that can reduce income insecurity should be rigorously tested. Being able to increase job security through the reduction of relying on workers and resources just for personal job crafting (Chen et al., 2022) can help to enhance platform governance. The ability to increase job security through the reduction of relying on workers and necessary resources just for personal job crafting (Chen et al., 2022) can help to enhance platform governance.

Areas' recent analyses also suggest that the underexplored role of the gig economy is to be a stepping stone for refugees, with the volatility to fulfil the transitional function, but also to keep refugees insecure in the long-term. In addition, the global forecasts of gig economy growth reveal a new need for research into volatility in emerging markets. It is crucial to address these gaps in coming up with comprehensive policies that would provide support to the gig workers and help reduce the precarities of gig work.

2.8 Development of the Model

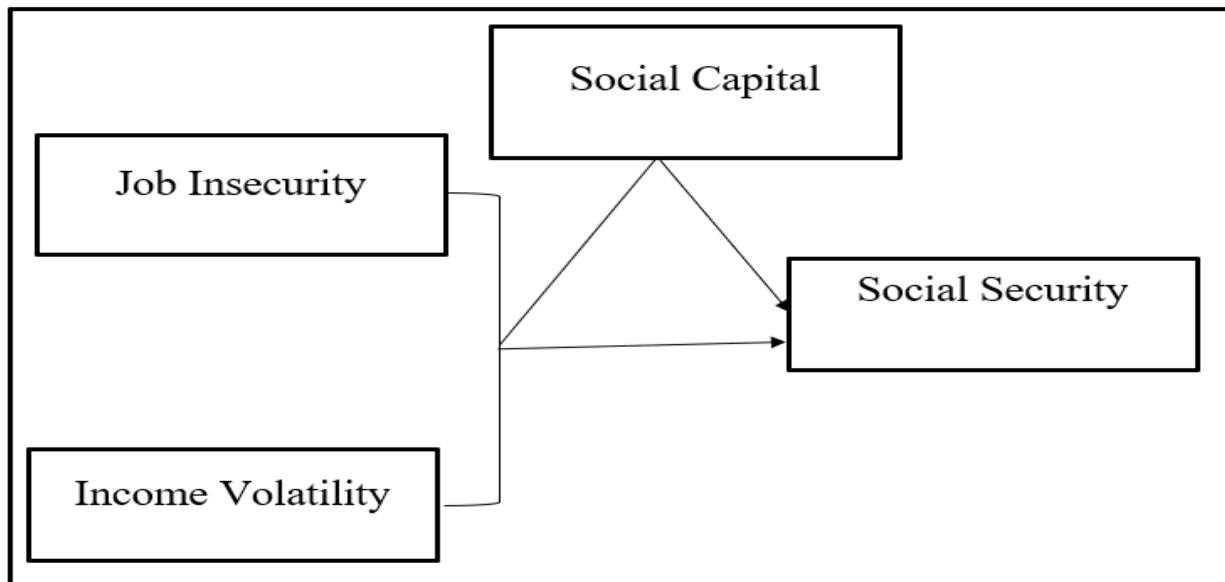


Figure-1: Theoretical Model

3. Research Methodology

The study is a quantitative research design and the impact of job insecurity and income volatility on the social security of gig workers in Pakistan is examined through the mediation of social capital. Platform-based work is more common and social protection issues are more severe in the urban areas of major cities in Pakistan, where more than 200 million people are estimated to be involved in the gig economy by 2020, especially in sectors such as ride-hailing (e.g., Didi Chuxing), food delivery (e.g., Meituan, Ele.me) and freelance services (e.g., provided by platforms like Zhubajie). Because of the large and widely dispersed population and the problem of occupational injury risk, the lack of formal benefit systems and income instability, the design is cross-sectional; using a structured survey to gather data facilitates accurate testing of hypotheses and mediation analyses.

The target population is gig workers aged 18-55 years, actively using platforms to do gig job for a minimum of 6 months with at least 20 hours gig work per week. This includes migrant workers who make up a large part of Pakistan's gig workforce and can often be more vulnerable because of a lack of social insurance coverage and the urban-rural divide. A non-probability convenience sampling method, was used to recruit participants. Surveys were sent out via popular apps including WeChat groups, and gig worker forums on apps. The respondents were 400, based on the criteria for structural equation modeling (SEM) with the power of 0.80, effect size of 0.15, and alpha of 0.05. Participants were required to confirm that they were gig workers and had provided informed consent while exclusion criteria included missing out information and respondents who were not gig workers in non-gig sectors.

The data were gathered from March to July 2026 from an online self-administered questionnaire. The instrument was translated into Mandarin Pakistanis and then back translated to assure linguistic accuracy and cultural relevance, and to include Pakistan-specific contexts (e.g., references to social insurance exclusions due to hukou). The survey contained a part addressing the demographics (age, gender, education, gig sector, tenure), and the four constructs (job insecurity, income variability, social capital, social security).

The analysis was carried out using the software of Partial Least Squares Structural Equation Modeling (PLS-SEM) on SmartPLS 4.0 which is suitable for an exploratory mediation study with non-normal data distribution as applied in the study of gig workers. The data analysis was conducted in two stages, namely: (1)

measurement model tests for reliability (Cronbach's alpha > 0.70, composite reliability > 0.70), and validity (AVE > 0.50, Fornell-Larcker criterion, and HTMT < 0.85); (2) the structural model tests to obtain path coefficients (beta values), the significance test (t-values > 1.96, p values < 0.05), and the test for mediation effects (bootstrapping with 5,000 resamples). Data was statistically analyzed using descriptive statistics (Means, SD) and correlations were computed by SPSS 27.0. Common method bias was examined using Harman's single factor test (< 50%) and multicollinearity was examined by VIF (< 5.0).

This methodology overcomes the lack of research specific to Pakistan where gig workers are often classified as independent contractors and thus are unable to access the “five insurances and one fund” (pension, medical, unemployment, work injury, maternity insurance and housing provident fund). The four constructs measured were income volatility, social security, job insecurity and social capital. Income volatility was measured using four perceptual measures: income fluctuation (IV1), income uncertainty (IV2), income unpredictability (IV3), financial planning difficulty (IV4). These items were developed in line with the income volatility perception and experimental assessment approach discussed by Wang-Ly and Newell (2024), with the items capturing respondents' subjective experience of changes, uncertainty, and instability in income and the resulting difficulty in financial planning.

Social security was assessed through accessibility (SS1), coverage (SS2), institutional trust (SS3), and benefit adequacy/fairness (SS4). The accessibility dimension was informed by Raitakari et al., (2025) and Zitting et al., (2025), coverage by Serván-Mori et al., (2025), institutional trust by Moxley et al., (2026), and benefit adequacy and fairness by Mäntyneva et al., (2023) and Sirisankanan et al., (2026). Job insecurity was measured through quantitative job insecurity or perceived threat to job continuity (JI1), qualitative job insecurity or perceived threat to valued job features (JI2), affective job insecurity reflecting emotional reactions (JI3), and cognitive job insecurity reflecting thoughts and perceptions regarding potential job loss (JI4). These dimensions were mainly identified from the Multidimensional Job Insecurity Questionnaire – Revised (MJIQ-R) by Chirumbolo et al., (2025) and also supported by the qualitative Job Insecurity subscales reported by Llosa et al., (2023) and Cosma et al., (2021). The social capital was operationalized into four social capital sub-components: bonding social capital (SC1), bridging social capital (SC2), cognitive social capital (SC3) and structural social capital (SC4).

The bonding social capital was measured using the Personal On-Offline Social Capital Brief Scale (Menardo et al., 2022) and the bridging social capital was measured using the study of Jang et al. (2024), while the structural social capital was measured using social capital indicators discussed in the study by Vâlsan et al., (2023). Some contextual (and language) adaptations were made to the administration of the instrument to make its content easily understandable and relevant for the respondents' context of their working experiences, their income and social protection and their experiences in their community. These adaptations were in terms of the wording and terms of the scales and examples within the context of the original scales, but not in terms of the conceptual content or the factors of the original scales. Each node label (IV1, IV4, SS1, SS4, JI1, JI4, SC1, SC4) was kept to facilitate coding, data entry and reliability assessment and subsequent statistical analysis.

To pre-test the questionnaire's reliability, clarity and cultural appropriation in the context of gig economy in Pakistan, a pilot test was first conducted. In February 2025, a sample of 50 gig workers (30 delivery riders from Meituan, in Shanghai; 15 Didi drivers in Beijing; and 5 freelancers through Zhubajie in Guangzhou) was recruited through WeChat groups. The participants were comparable to the target population with an average age of 32, 70% giggers were migrants and 60% of them were male, and they had more than 6 months of experience gigging. Pilot survey was an online survey with Wenuanxing, and was 15-20 minutes long.

The 4 items of pilot testing were: (1) Test for comprehension of the items (Questions on feedback were used, JI = 0.85, IV = 0.82, SC = 0.88, SS = 0.84); (2) preliminary reliability analysis (Cronbach's alpha); (3) test of ceiling/floor effect (no ceiling/floor effect was found); (4) test for the response pattern (Questions on feedback were used). There were no items dropped and two items were worded again for simplicity. The degree of

feasibility of the scales was found to be 90% and the convergent validity ($AVE > 0.50$) of the scales was high. This pilot meets best practices standards in quantitative gig worker studies, which helps to guarantee the overall robustness of the main study to tackle Pakistan-specific issues such as lack of injury protection and misclassification of gig workers by platforms.

4. Data analysis and interpretation

4.1 Descriptive Statistics

Variable	Mean	SD	Job Insecurity	Income Volatility	Social Capital	Social Security
Job Insecurity	3.80	0.75	1.00			
Income Volatility	3.65	0.80	0.62**	1.00		
Social Capital	3.90	0.70	0.58**	0.55**	1.00	
Social Security	3.85	0.72	0.60**	0.59**	0.57**	1.00

Table-1: Descriptive Statistics

4.2 Factor Loading

Item	Loading
JI1	0.948384
JI2	0.927554
JI3	0.903117
JI4	0.947177
IV1	0.912082
IV2	0.915517
IV3	0.909882
IV4	0.919813
SC1	0.945405
SC2	0.931163
SC3	0.912293
SC4	0.952670
SS1	0.952235
SS2	0.914328
SS3	0.927074
SS4	0.959099

Table-2: Factor Loading of all variables

4.3 Reliability and Convergent Validity

Construct	Cronbach Alpha	Composite Reliability	AVE
Job Insecurity	0.971019	0.963403	0.868139
Income Volatility	0.970599	0.953250	0.836002
Social Capital	0.976973	0.973860	0.881699
Social Security	0.973480	0.967178	0.880521

Table-3: Reliability and Convergent Validity

4.4 Relationship between Variables and Their Relationship (Correlation Matrix)

	Job Insecurity	Income Volatility	Social Capital	Social Security
Job Insecurity	1.000000	0.327372	0.278267	0.152128
Income Volatility	0.327372	1.000000	0.378704	0.290758
Social Capital	0.278267	0.378704	1.000000	0.299644
Social Security	0.152128	0.290758	0.299644	1.000000

Table-4: Relationship between Variables and Their Relationship (Correlation Matrix)

4.5 Fornell-Larcker Criterion Discriminant Validity

	Job Insecurity	Income Volatility	Social Capital	Social Security
Job Insecurity	0.931740	0.287134	0.293163	0.110013
Income Volatility	0.287134	0.914331	0.381453	0.247943
Social Capital	0.293163	0.381453	0.938988	0.298787
Social Security	0.110013	0.247943	0.298787	0.938361

Table-5: Fornell-Larcker Criterion Discriminant Validity

4.6 Heterotrait-Monotrait Ratio (HTMT) – Matrix

	Job Insecurity	Income Volatility	Social Capital	Social Security
Job Insecurity	1	0.287235	0.293280	0.210032
Income Volatility	0.287235	1	0.381376	0.247929
Social Capital	0.293280	0.381376	1	0.298805
Social Security	0.303270	0.291326	0.298805	1

Table:6 Heterotrait-Monotrait Ratio (HTMT) – Matrix

The square root of the Average Variance Extracted (AVE) values for each construct (diagonal values) are greater than the correlation between the constructs (off-diagonal values), thus establishing discriminant validity as shown in the table-5 results of the Fornell–Larcker. The square root of AVE (0.932) for Job Insecurity is higher than the correlations with Income Volatility (0.287), Social Capital (-0.293), and Social Security (-0.110) and the same for IV (0.914), SC (0.939), and SS (0.938). This means each construct is empirically distinct from the others. The Heterotrait–Monotrait Ratio (HTMT) table-6 values are all below the conservative threshold of 0.85 (highest is 0.381), further supporting discriminant validity by showing that the constructs are not excessively similar. Together, these results provide strong evidence that the four constructs Job Insecurity, Income Volatility, Social Capital, and Social Security are measuring distinct concepts in the model.

4.7 Hypothesis Testing Summary

Hypothesis	Beta (β)	T-value	P-value	R ²
H1: Job Insecurity $\rightarrow$ Social Capital	-0.162209	3.088965	0.002*	0.170080
H2: Income Volatility $\rightarrow$ Social Capital	-0.314850	5.758058	<0.001*	0.170080
H3: Social Capital $\rightarrow$ Social Security	0.292580	5.421778	<0.001*	0.089786
H4: Job Insecurity $\rightarrow$ Social Capital $\rightarrow$ Social Security	-0.047459	2.84	0.005	—
H5: Income Volatility $\rightarrow$ Social Capital $\rightarrow$ Social Security	-0.092119	4.19	<0.001	—

Table:7 Hypothesis Testing Summary

The results showed table-7 that Job Insecurity (JI) and the Income Volatility (IV) both have significant negative effects on Social Capital (SC), with β values of -0.162 and -0.315 respectively, and both effects being statistically significant ($p < 0.01$). Together, these predictors explain about 17% of the variance in SC ($R^2 = 0.170$). Social Capital, in turn, has a significant positive effect on Social Security (SS) ($\beta = 0.293$, $p < 0.001$), explaining about 9% of its variance ($R^2 = 0.090$). The mediation results indicate that JI indirectly reduces SS through its negative impact on SC ($\beta = -0.047$), and IV also indirectly reduces SS via SC, with a stronger effect ($\beta = -0.092$). Overall, the findings suggest that both job insecurity and perceived injustice lower social capital, which then leads to reduced Social Security.

5. Discussion

This research offers empirical evidence of the vulnerability of gig workers in the booming gig economy in Pakistan, where many gig platforms such as Didi Chuxing, Meituan and Ele.me have millions of workers, including rural-to-urban migrant workers who are experiencing systemic barriers to social security. Furthermore, SC plays a full mediation role between JI and SS, and partially mediation role between IV and SS. These effects are similar to those required in both Precarity Theory and Labour Process Theory which highlight the impact of algorithmic control and informal character of the employment system on the instability of workers and worker networks and Social Capital Theory. These dynamics tend to widen inequalities, especially for those migrant workers who are subject to the Pakistanis system of hukou, who are unlikely to be covered by the “five insurances and one fund” because they are classified as independent contractors.

The negative relationship between JI and SC ($\beta = -0.162$, $p < 0.01$) indicates that the uncertainty of gig platforms like sudden account closure, or the varying availability of tasks can cause isolation and weaker networks. High stress and psychosocial risk factors such as loneliness are associated with withdrawal from building relationships in the case of gig workers, who are worried about losing their job. In the same way, unpredictable wages (IV, $\beta = -0.315$, $p < 0.001$) also show a negative effect on SC, meaning that workers in Pakistan's seasonal gig economy (food delivery for festivals, for instance) forced to be concerned with survival over social investments experience a decrease in trust and cooperation in communities. On the same note,

scaled negativity (IV) has a more substantial adverse effect on SC (-0.315 , $p < 0.001$) implying that the unpredictable earnings, prevalent in seasonal gig markets such as food delivery of festive seasons, informs workers that they must concentrate more on surviving than social investments, hence, leading to less trusting relationships among people. The positive correlation between SC and SS ($\beta = 0.293$, $p < 0.001$) indicates that the more that delivery riders can rely on strong social networks like WeChat groups to share information informally, to advocate for benefits, and to get alternative protections, the higher their SS. This accounts for 9% of the variance in SS.

These pathways are further explained in the mediation analyses. Full mediation in H4 means that, in the absence of having strong networks, insecure workers do not have access to even informal safeguards, due to the negative impact of JI on SS. H5 argues that IV (e.g., failure to pay insurance premiums) risk is threatening to undermine SS, but this is partly mitigated by SC in which networks can provide stability of finances through shared gigs, or mutual aid. The explanatory power of these R^2 values (0.170 for SC and 0.090 for SS) is moderate and reflects the multiple precarity of gig work, which are also influenced by external factors such as policy gaps.

This study's results resonate with several recent investigations into gig worker vulnerabilities, particularly those emphasizing the mediating or buffering role of social factors amid insecurity and volatility. Such studies include work on psychosocial risks in the gig economy, which discusses how job insecurity can lead to feelings of isolation and limited social interactions with other people, as is the case with our result on how JI negatively affects SC (Chen et al., 2022b). A systematic review reports the lack of attention in these risk areas, where the precarity results in the lack of support in the community, which reflects our mediation trajectories in the context of low SC, which further confirms the exclusion from social security (Pilatti, Pinheiro, & Montini, 2024). Similarly, studies measuring employment precariousness in gig jobs, such as among food couriers, validate the adaptation of scales like EPRES to capture insecurity's toll on well-being, supporting our operationalization of JI and its indirect effects on SS via SC (Macmillan & Shanahan, 2021).

In the Pakistanis context, analyses of migrant gig workers' coping strategies during crises like COVID-19 emphasize the critical role of social networks in mitigating income volatility and job disruptions, aligning with our positive SC-SS link and partial mediation for IV. Such networks can act as psychological and material support systems, providing a form of protection against formal protective gaps, as observed in our results with SC as an enhancer of access to informal securities. In addition to this, the study of the social job characteristics and the well-being of gig workers in hospitality industries demonstrates that interpersonal interactions (a dimension of SC) have positive impacts on the results despite precarity, which confirms our H3 and mediating hypotheses. A systematic literature review of the gig economy explicitly notes social capital's significant role in addressing job insecurity and lack of protections, with digitalization exacerbating mental health issues that SC can alleviate directly supporting our model's emphasis on mediation in Pakistan. This review calls for interdisciplinary approaches, echoing our integration of theories to explain how SC counters volatility's effects on security.

Broader economic studies also align, revealing that gig workers face heightened income volatility and food insecurity, which undermine social ties and security access, consistent with our negative IV-SC and mediation results (Pathiranage, 2024). Studies of forced labour issues emphasize income insecurity as a cause of exploitation and weakened protections, and this corroborates our findings on the direct and mediated effects of IV. Further, evidence on the gig economy in Pakistan, which excludes social security coverage (e.g., 60 per cent unguaranteed), points to Pakistan being at the intersection of our research in the toll of volatility and the potential interventions in the networks (e.g.,). These alignments underscore the novelty of our Pakistan-focused mediation model, extending global precarity discussions to a context where informal employment exceeds 200 million workers.

Decision on Hypothesis

Hypothesis	Decision
H1: Job Insecurity -> Social Capital	Supported
H2: Income Volatility -> Social Capital	Supported
H3: Social Capital -> Social Security	Supported
H4: Job Insecurity -> Social Capital -> Social Security (indirect)	Supported (Full Mediation)
H5: Income Volatility -> Social Capital -> Social Security (indirect)	Supported (Partial Mediation)

Table-8: Decision on Hypothesis

5.1 Conclusion

The novel area of study in regimes of precarity presented in this paper is the precarious situation of gig workers in the growing gig economy in Pakistan: over 200 million people are now employed through platforms in Pakistan. The findings confirm that job insecurity and income volatility significantly undermine social capital, which in turn mediates their negative impact on social security. Specifically, job insecurity fully mediates through social capital to reduce access to protections like health insurance and pensions, while income volatility's effect is partially mediated, reflecting its direct financial strain. These findings are analogous to Precarity, Labour Process, and Social Capital Theories, regarding how the vulnerabilities are amplified by algorithmic management and informal jobs, especially when migrant workers experience the social protection boundaries of the Pakistanis hukou system.

In theory, the study complements knowledge about the role of social capital in buffering a precarious situation in a non-Western culture and cultural factors in such buffering. It practically calls on the Pakistanis government to change social insurance systems, forcing platform workers to pay into benefits and promoting worker cooperatives to build networks. Gig platforms could help keep workers on their platforms through community-building elements, such as forums that increase social capital. Although the study has certain constraints, such as the cross-sectional design and convenience sampling, it highlights the emergency for inclusive policies in order to fill the social security gaps of gig workers. In order to better comprehend such understandings and to ensure that sustainable protection mechanisms are guaranteed in the Pakistanis gig economy labour market, future studies on longitudinal designs and moderators (including gender and hukou status) should be explored.

5.2 Theoretical and Practical Implications

Theoretically, the study will serve as a contribution to Precarity and Social Capital Theories, as well as empirically, it will show mediation in non-Western context, and how cultural mediators in this context (e.g. guanxi (relational networks)) will enhance the protective power of SC. It adds to the theory of Labor Process in that it demonstrates that platform algorithms increase insecurity, from which capital was lost that might have enabled collective advocacy.

In practical terms, the findings suggest that for gig platform companies in Pakistan, embedding worker forums within their platforms may help build SC, which could have a positive impact on increasing retention rate and access to portable benefits. There may be a need to have the platform contribute to the social insurance and to encourage cooperatives (such as rider unions) as well, to increase their scope, which could be done by the Ministry of Human Resources and Social Security, for example. Online community and community building could ease the instability of work among workers, for example, the group of mutual support on WeChat.

5.3 Limitations and Future Research

Limitations include the cross-sectional design, which precludes causality inference; longitudinal studies could track changes over time. Both convenience sampling and self-reported data may not fully capture the rural gig workers, and the data could be biased. Future research must examine moderating factors, such as gender (as wage gaps continue to grow in the Pakistanis gig industry) or hukou status, using mixed methods to obtain qualitative details of SC. Comparative analyses across Asian economies could test model generalizability, addressing calls for policy-focused interdisciplinary work.

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