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RECEIVED 29 March 2026

REVISED 18 May 2026

ACCEPTED 19 June 2026

PUBLISHED 14 July 2026

CITATION

Kariveliparambil A, K S, Ranganathan M,
Sebastian S, Kurian A and Babu J (2026)
Employment precarity and psychosocial
well-being among interstate migrant
workers in India: the mediating role of
social protection.
Front. Hum. Dyn. 8:1842262.
doi: 10.3389/fhumd.2026.1842262

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Employment precarity and psychosocial well-being among interstate migrant workers in India: the mediating role of social protection

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Background: Employment precarity has become a defining feature of informal labor markets, particularly among interstate migrant workers in developing economies like India. Although a growing body of evidence demonstrates the adverse effects of precarious employment on mental health, the mechanisms through which these effects operate remain unclear.

Methods: This study employed a cross-sectional survey design with a purposive sample of 428 interstate migrant workers from Kerala. Data were collected using structured scales for employment precarity, social protection, psychosocial well-being, social exclusion, and adaptive coping. Pearson's correlation and linear regression analyses were performed, and mediation and moderation effects were tested using the PROCESS macro (Models 4 and 1).

Results: Employment precarity was significantly associated with lower psychosocial wellbeing. Social protection demonstrated a statistically significant indirect effect within this association, suggesting that access to institutional resources may be a partial factor. However, social exclusion and adaptive coping did not moderate this relationship. These findings suggest that the association between employment precarity and psychosocial well-being remained relatively consistent across the social and individual factors examined in this study.

Conclusion: The findings underscore the comparatively strong association between employment precarity and migrant well-being while suggesting that the buffering roles of social and individual factors may be contextually limited within the present sample. However, given its cross-sectional design, these findings should be interpreted as associations rather than causal relationships. The psychosocial health of migrant workers can be improved by developing accessible and portable social protection systems, alongside structural labor market reforms.

KEYWORDS

adaptive coping, employment precarity, internal migration, migrant workers, psychosocial well-being, social exclusion, social protection

Introduction

Internal migration is a growing and prominent feature of labor mobility in developing economies, owing to persistent regional disparities in economic opportunities and uneven patterns of development (Attah-Otu et al., 2024; Rajan et al., 2021). In India, it has induced substantial inter-state labor flows, as economically more advanced regions attract workers from less advanced states (Madan and Dangi, 2023; Sachs et al., 2002; Sanyal, 2018). Kerala is a prominent example of this transformation in India. Historically, it has had high out-migration, the state has recently seen the emergence of its economy as a major destination for interstate migrant workers, especially from Bihar, West Bengal, Assam, Odisha, and Uttar Pradesh (Chakraborty et al., 2022; Peter et al., 2020; Sengupta and De, 2020). This shift reflects both labor shortages within the local workforce and the expanding demand for low-skilled labor across the construction, manufacturing, hospitality, and other service sectors (Khan and Arokkiaraj, 2021; Sarma and Nath, 2025).

Although Kerala is known for its strong social development indicators and welfare-oriented governance, its labor market highly marginalizes interstate migrant workers (Sivadasan et al., 2024). Employment opportunities in the informal sector are typically characterized by a lack of stable income, absence of contracts, hazardous working conditions, and minimal regulation (Das, 2020; Khadar et al., 2024). The vulnerabilities of migrant workers due to language barriers and cultural distance are compounded by a lack of institutional access and social support (Mokofe, 2021; Ruiz-Ramírez et al., 2024). Consequently, they experience economic insecurity and other forms of social marginalization.

The context of employment precarity may explain these conditions. Precarity captures the multidimensional nature of insecure work, encompassing instability, lack of protection, and exposure to risk (Grenier et al., 2017; Pathiranage, 2024). As research increasingly demonstrates that these conditions can impact psychosocial well-being, insecure jobs lead to added stress, anxiety, and lower life satisfaction (Sadłowska-Wrzesińska, 2024; Salas-Nicás et al., 2024). For the migrant population, these effects are often compounded by stressors associated with mobility, such as social isolation, disconnection, and limited integration into the host community (Chen et al., 2017; Liu et al., 2020). However, while the relationship between precarious employment and well-being is well established, the mechanisms through which these effects operate, particularly within the context of internal migration, remain insufficiently explored (Zhang et al., 2021).

The role of social protection is an important yet underexplored dimension in this regard. Social protection systems are intended to manage labor-related vulnerabilities through access to healthcare, income support, and institutional protection (Albarracín et al., 2024; Sabates-Wheeler, 2019). India has introduced a range of policy measures aimed at extending such protections to unorganized and migrant workers (Pushpendra and Singh, 2020; Rajan, 2023). However, evidence shows a mismatch between policy availability and real accessibility (Rajan et al., 2020; Rao et al., 2020). Migrant workers often encounter obstacles stemming from documentation, knowledge, and portability of benefits,

preventing them from taking advantage of available welfare measures (Immervoll et al., 2022; Lafleur and Vintila, 2020). Although the existing literature has demonstrated that access to social protection is related to employment precarity and well-being, few empirical studies have examined the mediating role of access to social protection in such an association (Belvis et al., 2022; Luecke and Knabe, 2019; Shahidi et al., 2016; Voßemer et al., 2017).

In addition to institutional factors, migrant experiences are linked to social and individual factors. Social exclusion processes that can amplify vulnerabilities by limiting access to informal networks manifest as weak social networks, limited community integration, and feelings of marginalization (Idiakez et al., 2022; Marinucci and Riva, 2020). Workers' responses to adverse working conditions may be influenced by individual-level adaptive coping mechanisms. Although prior research has examined these dimensions separately, there is a lack of integrative studies that consider how structural labor conditions, institutional resources, social contexts, and individual coping strategies interact to shape psychosocial outcomes (Karlsen et al., 2024; Lipscomb et al., 2005; Roczniewska et al., 2024).

This gap is particularly significant in the context of interstate migrant workers in Kerala, where the coexistence of advanced social development indicators and widespread informal employment presents a unique analytical framework. The existing literature has focused on the description of patterns of migration, conditions of work, and experiences in sectors, often in isolation (Chakraborty et al., 2022; Cherian and Rajan, 2024; Peter et al., 2020). Consequently, there remains a limited understanding of how employment precarity, access to social protection, and psychosocial well-being are interconnected and how social and individual factors influence these relationships.

This study addresses this gap by developing and empirically testing an integrated analytical framework that examines the relationship between employment precarity and psychosocial well-being among interstate migrant workers in Kerala, India. Specifically, this study assessed the mediating effects of social protection and the moderating effects of social exclusion and adaptive coping. By situating these relationships within a unified framework, this study moves beyond fragmented approaches to provide a more comprehensive understanding of migrant vulnerabilities.

Theoretically, this study contributes to the literature by extending the stress process model to the domain of internal migration and informal labor, integrating structural, institutional, social, and individual dimensions within a single framework. Empirically, it provides evidence of the mechanisms by which employment precarity affects well-being in the context of high informal employment and partial welfare coverage in India. From a policy perspective, the results expose the shortcomings of existing social protection systems and offer directions for more inclusive and accessible welfare mechanisms to address the multidimensional vulnerabilities of migrant workers. This study aims to contribute to academic understanding of migrants' well-being and policy discussions. In particular, the project will demonstrate that migrants' well-being is shaped by the interplay among structural constraints, institutional support, and individual and social resources.

Review of literature

Changes in the labor market due to globalization and internal migration configurations have significantly altered the nature of jobs across developing economies (Bue et al., 2021; Rao et al., 2020). More than mere marginal sectors, informal and precarious work has become a permanent and structural feature of new labor regimes (Reza, 2016). In India, this transformation is closely tied to large-scale internal migration, in which interstate migrant workers constitute a substantial segment of the informal workforce (Chakraborty et al., 2022; Srivastava, 2019). Most informal workers are employed in labor-intensive sectors, such as construction, hospitality, and low-skilled urban services. These jobs generally offer hundreds of employment opportunities (Das, 2020; Shonchoy and Junankar, 2014). However, this work is characterized by instability, lack of contract protection, and minimal regulation. Empirical research consistently indicates that such conditions are not temporary or transitional but reflect deeper structural inequalities that shape labor market participation over time (Lu and Leicht, 2025).

Labor market segmentation theory provides a framework for analyzing structural employment positions. According to this perspective, there are two labor market segments: primary and secondary, with the latter mainly comprising migrant workers. Migrants are forced to work in secondary labor markets that offer low wages and little or no job security (López-Roldán and Fachelli, 2021). Internal migration in India is the result of long-standing regional inequalities in development, with systematic outflows of labor from economically backward states, such as Tamil Nadu and Andhra Pradesh, to relatively advanced regions, such as Kerala (Chakraborty et al., 2022; Khan and Arokkiaraj, 2021; Rajan, 2023). This process alleviates labor shortages in destination regions; however, it also reinforces patterns of inequality, as migrant workers are relegated to precarious employment (Peter et al., 2020). Although existing studies have provided insights into these structural dynamics, they often do so in the absence of labor market conditions and consequently ignore their relationship with welfare system access and well-being more broadly (Lewchuk and Lafèche, 2014; van Doorn, 2022).

In this context, the notion of employment precarity has gained traction, as it conveys the multifaceted nature of insecure employment. Precarity extends beyond income instability to include the absence of formal contracts, unsafe working environments, and limited access to labor rights (Perri et al., 2024; Zhang et al., 2021). From a theoretical perspective, precarious employment can be considered a chronic stressor tied to structural labor arrangements (Blustein et al., 2016; Seubert et al., 2026). The stress process model provides a useful lens for examining how structural conditions translate into individual outcomes. According to this model, prolonged exposure to stressors, such as job insecurity and economic instability, results in cumulative psychological strain, which affects mental health and well-being (Louie et al., 2023). Within this framework, precarious employment is not merely an economic condition but a state of permanent stress that erodes individuals' stability and control.

Many studies have documented the relationship between precarious employment and poor psychosocial health. Research in various contexts consistently shows that insecure and unstable

work is linked to higher levels of stress, anxiety, and depressive symptoms, and lower life satisfaction (Blustein et al., 2016; Quan et al., 2022). These effects are most pronounced in the migrant population, which suffers from problems related to mobility, in addition to their physical and mental health issues (Matias et al., 2019). Studies on migrant health have found that these simultaneous stressors frequently produce greater psychological vulnerability than among non-migrants (Constant and Milewski, 2021). Nevertheless, most of the literature focuses on broad labor populations or migrant well-being studies that do not analyze labor markets and institutions within a parallel analytical framework (Bretones et al., 2020; Sharma et al., 2023). Consequently, the complex pathways through which structural vulnerabilities affect well-being remain poorly understood in the literature.

Social protection systems are designed to mitigate such vulnerabilities by providing institutional safeguards against economic and social risks. These systems are intended to provide income security, medical care, and protection against workplace accidents and diseases (Abdoul-Azize and Gamil, 2020; Salleh et al., 2017). India has introduced various laws and policies for the social protection of unorganized and migrant workers (Rajan et al., 2020; Sen, 2022). However, as empirical evidence shows, there is a gap between policy and reality. Migrant workers face problems due to a lack of documentation, awareness of entitlements, the fragmentation of administration, and the weak enforcement of labor laws (Cook, 2020; Kumar, 2025). Moreover, interstate migrants find it more difficult to access benefits because of a lack of portability. These constraints systematically exclude migrant workers from formal welfare mechanisms despite existing policy frameworks.

While the limitations of social protection systems are well documented, less attention has been devoted to how variations in access to these systems influence the relationship between employment precarity and well-being (Carr et al., 2023; Kvart et al., 2025). From the stress process model perspective, social protection can be conceptualized as a mediating resource that shapes the extent to which structural stressors translate into adverse outcomes (Belvis et al., 2022). Access to welfare mechanisms may reduce uncertainty, enhance economic security, and provide a buffer against the negative effects of precarious employment (Voßemer et al., 2017). Conversely, limited access to social protection may exacerbate vulnerability by amplifying the effects of structural stressors on mental health. This mediating role remains underexplored in empirical research, particularly in the context of interstate migrant workers in India (Cherian and Rajan, 2024; Mookerjee and Roy, 2023) and is worth investigating.

In addition to institutional factors, migrant experiences are shaped by broader social contexts, particularly social exclusion and integration issues. In this study, social exclusion is primarily conceptualized as a perceived relational construct that reflects individuals' subjective experiences of exclusion from social, economic, and community participation. It is also shaped by broader structural constraints. Social exclusion refers to the limited participation of individuals in social, economic, and cultural activities, often resulting from structural and relational barriers (Crawford et al., 2023). Migrant workers frequently face challenges related to language, cultural differences, and social identity, which constrain their ability to integrate into host communities (Xu et al., 2023; Zhang et al., 2023). These barriers

can limit access to social networks, community resources, and informal support systems, thereby intensifying vulnerability (Oliveira et al., 2024; O'Dell et al., 2023). Research grounded in social capital theory suggests that access to supportive networks plays a critical role in mitigating the negative effects of stress and insecurity (Im et al., 2025; Leddy et al., 2020). Strong social ties are associated with improved psychological outcomes, whereas social isolation and exclusion are linked to increased distress (Nyamari, 2024).

Nonetheless, in the existing literature, social exclusion is often studied separately from labor market conditions and institutional contexts. This fragmented approach overlooks how social, economic, and institutional dimensions interact to shape migrant well-being (De Coninck and Solano, 2023). However, the extent to which social exclusion influences the impact of employment precarity on well-being has not been sufficiently investigated. It is critical to understand this interaction to understand the contextual conditions that intensify or ameliorate structural vulnerabilities (Bryan, 2021; Cantos-Egea et al., 2023).

At the individual level, adaptive coping mechanisms represent another important dimension of the stress process. Problem-solving, emotion regulation, and support-seeking are coping strategies that people use to reduce stress and maintain psychological well-being (Bondarchuk et al., 2024). Research has shown that adaptive coping may buffer against the negative impacts of economic hardship and social marginalization in adverse circumstances (Chaaya et al., 2025; Zhang et al., 2023). However, the success of coping strategies often depends on institutional and structural environments. In contexts where precarity is chronic and widespread, individuals' coping abilities may not be sufficient to compensate for their structural deficits (Algorani and Gupta, 2023; Blustein et al., 2024; Junaidi et al., 2023). Despite its relevance, the role of coping remains underexplored in studies that simultaneously consider employment precariousness, social protection, and social exclusion.

The literature presents a rich body of work on various aspects of migrant labor. Nonetheless, these dimensions have largely been studied separately, making it difficult to understand the realities of migrants (Rao et al., 2020; Zhang et al., 2021). A distinct void of consolidated empirical research that integrates structural labor conditions, institutional support mechanisms, social contexts, and the qualities of individuals to adapt to the changing work climate exists (Polkowska, 2019; Yan et al., 2025). Addressing this gap is critical for advancing theoretical understanding and developing more comprehensive policy responses to the issue.

With the help of an integrated analytical approach, this study seeks to address the identified gap by examining how employment precarity affects psychosocial well-being among interstate migrant workers, with social protection as a mediating mechanism, and social exclusion and adaptive coping as moderating conditions. By situating these relationships within a unified framework, this study moves beyond fragmented analyses to provide a more comprehensive understanding of the layered and interconnected factors that shape migrant workers' well-being.

Building on the above literature, this study advances an integrated analytical perspective that combines the structural, institutional, social, and individual dimensions of migrants' experiences. Drawing on the stress process model, employment precarity is conceptualized as a chronic structural stressor

embedded within labor arrangements that directly affects workers' psychosocial well-being. Social protection is positioned as an institutional mechanism through which the effects of precarity are partially transmitted, whereas social exclusion and adaptive coping are treated as contextual and individual conditions that may shape the strength of this relationship.

Theoretically, this study extends the application of the stress process model to the context of internal migration and informal labor by incorporating labor market segmentation as a structural source of stressors and situating social exclusion and adaptive coping within a conditional framework. This integrated perspective provides a nuanced and context-sensitive explanation of how structural labor conditions translate into psychosocial outcomes for employees to improve their well-being. Figure 1 illustrates the study's conceptual framework.

Although previous studies have indicated that both social exclusion and adaptive coping can mediate the link between structural stressors and psychosocial consequences, empirical data from migrant labor settings are scarce and context-specific. Vulnerability has been demonstrated to be exacerbated by social exclusion, limiting access to support networks and community resources, thus potentially increasing the effects of employment insecurity (Nyamari, 2024; Oliveira et al., 2024; O'Dell et al., 2023). Adaptive coping has been linked to psychological adaptation in the face of unfavorable situations; however, the buffering effect appears to be dependent on the structural and institutional context in which individuals work (Blustein et al., 2024; Chaaya et al., 2025). In this study, these relationships were treated as empirically testable, with their effects expected to vary across contexts rather than being theoretically predetermined.

The distinction between mediating and moderating roles in this study is theoretically grounded in the stress process model and labor market segmentation framework (Blustein et al., 2016; Louie et al., 2023; López-Roldán and Fachelli, 2021; López-Roldán and Fachelli, 2021). Social protection is analytically positioned as the primary mediating mechanism within the present framework because it reflects access to institutional resources that may partially shape the relationship between structural labor insecurity and psychosocial outcomes (Belvis et al., 2022; Voßemer et al., 2017). Social exclusion and adaptive coping are examined as contextual social and individual processes associated with psychosocial well-being, particularly in relation to how migrant workers experience and respond to employment insecurity (Blustein et al., 2024; Coninck and Solano, 2023). Although these constructs may plausibly function as both mediators and moderators in alternative analytical specifications, the present framework adopts this configuration as a theoretically guided interpretation rather than as an empirically fixed distinction, particularly given the cross-sectional and self-reported nature of the data (Carr et al., 2023; Zhang et al., 2021).

Based on this conceptual framework, this study proposes the following hypotheses:

H1: Employment precarity has a significant negative effect on migrant workers' psychosocial well-being.

This hypothesis reflects the central premise of the stress process model, which states that chronic exposure to structural stressors undermines psychological well-being.

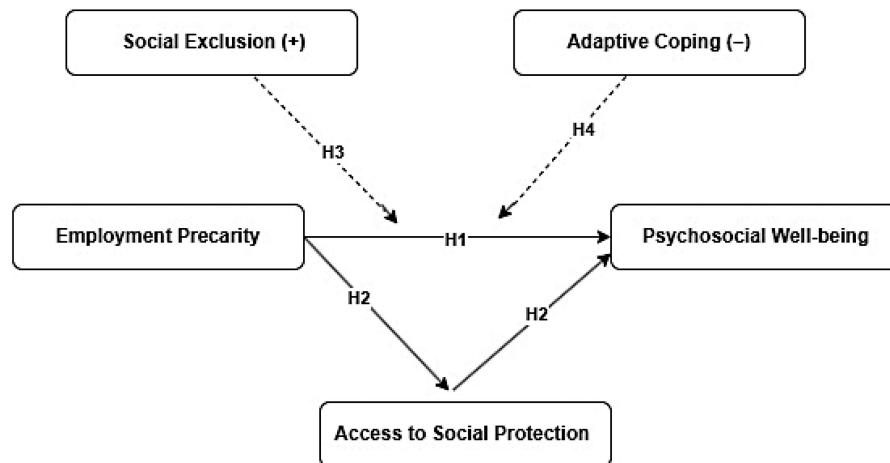


FIGURE 1

Conceptual framework of employment precarity, social protection, and psychosocial well-being among interstate migrant workers.

H2: Social protection mediates the relationship between employment precarity and psychosocial wellbeing.

This hypothesis is grounded in the role of institutional resources in shaping the translation of structural vulnerabilities into individual outcomes.

H3: Social exclusion moderates the relationship between employment precarity and psychosocial well-being such that the negative effects may vary across levels of social exclusion.

This hypothesis acknowledges the potential conditioning role of social context while allowing for empirical variability in its influence.

H4: Adaptive coping moderates the relationship between employment precarity and psychosocial well-being such that the negative effect may be attenuated among individuals with higher adaptive coping levels. This hypothesis reflects the potential role of individual-level strategies in managing stress while recognizing their context-dependent effectiveness.

The conceptual framework provides a theoretically grounded and empirically testable model that integrates structural, institutional, social, and individual dimensions of migrant experiences. By closely aligning with the empirical design of the study, it offers a coherent basis for examining the determinants of psychosocial well-being among migrant workers in Kerala.

Materials and methods

Research design

This study employed a cross-sectional survey design to examine the relationship between employment precarity and psychosocial well-being among interstate migrant workers in Kerala while assessing the mediating role of social protection and the moderating roles of social exclusion and adaptive coping. A quantitative approach was adopted to test the theoretically derived relationships within an integrated analytical framework that combined the structural, institutional, social, and individual dimensions. The cross-sectional design enabled simultaneous assessment of these relationships within a defined

population at a specific point in time. However, given the cross-sectional nature of the data, the observed relationships should be interpreted as associative rather than causal, and no temporal ordering of variables can be established.

Participants and sampling

This study included 428 interstate migrant workers engaged in informal employment in Kerala. Participants were selected using a purposive sampling strategy to include individuals who met the key eligibility criteria of interstate migrant status and employment in the unorganized sectors, such as construction, manufacturing, hospitality, and other informal urban occupations. Participants were recruited from multiple access points, including informal workplaces (e.g., construction sites, small-scale manufacturing units, and hospitality establishments) and residential locations. Recruitment was facilitated through field visits, coordination with workplace supervisors, and migrant worker peer networks. Field volunteers assisted in identifying and approaching potential participants, and the research team oversaw the recruitment process.

Purposive sampling was appropriate given the absence of a comprehensive sampling frame for migrant workers and the mobile and often undocumented nature of this population. Efforts were made to include participants from diverse occupational sectors and income groups to enhance the analytical breadth of the sample. Although the non-probability sampling approach limits statistical generalizability, it is consistent with established methodological practices for accessing hard-to-reach and mobile labor populations. Owing to the field-based and mobile nature of the study population, formal participation rates and refusals were not recorded systematically. However, participation was voluntary, and efforts were made to approach all eligible individuals present at the selected sites. It is important to acknowledge the potential selection biases associated with purposive sampling. The sample may reflect sectoral concentration, particularly in construction and related informal occupations, and may be influenced by

accessibility to workplaces and the availability of participants. Additionally, language barriers and varying levels of willingness to participate may have affected the inclusion of certain subgroups. These factors may limit the representativeness of the sample and should be considered when interpreting the findings.

Measures

All study variables were measured using a structured multi-item scale. Responses were recorded using Likert-type formats, and composite scores were computed by summing item responses, with higher scores indicating higher levels of each construct.

Five items from the Employment Precariousness Scale (EPRES) developed by Vives et al. measured employment precarity (Vives et al., 2010). In this study, a shortened version of the EPRES was used, with items selected to capture key dimensions of precarious employment—namely, job insecurity, income instability, lack of formal contracts, limited labor protection, and unsafe working conditions—based on their relevance to the context of migrant labor. Responses to the EPRES items are typically recorded on an ordinal scale, often a 1–5-point scale, with higher scores indicating greater levels of employment precarity.

Social protection was assessed using a five-item scale adapted and operationalized for this study based on the established concepts of access to welfare and labor protection for informal workers. The scale reflects the key dimensions of social protection, including access to health services, government welfare schemes, institutional or financial support, job safety, and awareness of entitlements (Ntseane and Solo, 2023). Responses were recorded using a five-point scale, with higher scores indicating greater access to institutional support for mental health. Item selection was guided by established definitions of social protection related to income security, access to essential services, and protection against labor-related risks, particularly those articulated by the International Labour Organization and the World Bank. These conceptual foundations support the construct validity of the measures used in this study. Some conceptual overlap, particularly with respect to labor protection, may exist between employment precarity and social protection. However, employment precarity reflects the absence of secure working conditions, whereas social protection reflects access to institutional support mechanisms. This proximity may contribute to the stronger observed associations and should be considered when interpreting the findings.

Psychosocial well-being was measured using the World Health Organization Well-Being Index (WHO-5) (WHO, 1988). The scale consists of five items that assess positive mood, vitality, and general interest in life. Responses range from 0 (never) to 5 (always), and the total score was transformed to a 0–100 scale, with higher scores indicating better well-being. The WHO-5 has been widely validated and demonstrates strong reliability across diverse populations.

Social exclusion was measured using five items adapted from established social exclusion frameworks (Burchardt et al., 2002). The scale captures perceived exclusion from the host community, language barriers, lack of belonging, discrimination experiences, and limited social connections. Responses were recorded on a five-point scale, with higher scores indicating greater social exclusion.

Adaptive coping was assessed using five items adapted from the Brief COPE Inventory (Carver, 1997). The selected items represent key adaptive coping dimensions, including problem-solving, support-seeking, positive reframing, and behavioral adjustment, and were chosen for their relevance in managing work-related stress in the context of migrant labor. Responses were recorded on a five-point scale, with higher scores indicating stronger coping capacity.

All scales demonstrated excellent internal consistency, with Cronbach's alpha values exceeding 0.90. Although high alpha values indicate strong internal consistency, they may also suggest potential item redundancy. However, given the conceptual coherence and focused structure of the scales, these values are interpreted as reflecting reliable measurements within the study context.

Although the adapted scales demonstrated high internal consistency, formal construct validation procedures, such as exploratory or confirmatory factor analyses and tests of convergent or discriminant validity, were not conducted within this sample. In addition, no separate pilot testing was conducted before data collection. While the measures were developed based on established conceptual frameworks and prior literature, these limitations should be considered when interpreting the findings, particularly in relation to moderation analyses, where measurement precision is critical.

Data collection procedure

Data were collected between January and February 2026 using a structured survey questionnaire administered to interstate migrant workers in selected informal employment settings in Kerala, India. The study was conducted in a post-COVID context, which may have implications for interpreting context-dependent processes such as adaptive coping. The questionnaire was designed to ensure clarity and contextual relevance and was administered in a language familiar to the participants. Respondents were assisted as necessary to ensure comprehension, particularly in cases involving language or literacy constraints. Interviews were conducted in person during break periods or non-working hours to minimize disruption to participants' work routines.

Participation was voluntary, and respondents were informed of the study's purpose prior to data collection. Measures were taken to ensure confidentiality and anonymity, and no personally identifiable information was recorded in the study. Given that data collection involved interviewer assistance in certain cases, there is a possibility of response bias, including social desirability effects. However, efforts were made to minimize this through neutral administration, voluntary participation, and assurances of confidentiality.

Analytical strategy

Data analysis was conducted using a combination of descriptive and inferential statistical techniques. Descriptive statistics were used to summarize sample characteristics and variable distributions, and internal consistency was assessed using Cronbach's α coefficient.

Pearson's correlation analysis was performed to examine the bivariate relationships among the variables and to assess potential multicollinearity. A simple linear regression analysis was conducted to test the direct effect of employment precarity on psychosocial well-being.

To examine the mediation and moderation effects, we employed the PROCESS macro developed by Hayes (2013). All analyses were conducted using the PROCESS macro (version 3.5) implemented in IBM SPSS Statistics (Version 26). Mediation analysis was conducted using Model 4 to assess the indirect effect of employment precarity on psychosocial well-being through social protection. Moderation analyses were conducted using Model 1 to examine whether social exclusion and adaptive coping condition the relationship between employment precariousness and well-being. To further assess the robustness of the proposed analytical framework, supplementary comparative mediation analyses were additionally conducted using social exclusion and adaptive coping as alternative mediating variables linking employment precarity and psychosocial well-being.

The analyses were conducted without including additional sociodemographic covariates to preserve the interpretability of the core theoretical relationships and avoid over-adjustment in a cross-sectional design. However, variables such as age, gender, income, education, and employment sector may act as potential confounders. Therefore, the absence of covariate adjustment should be considered when interpreting the findings, and future research incorporating controlled models would strengthen the internal validity.

All moderation analyses were conducted using mean-centered variables to reduce multicollinearity. Bootstrapping procedures with 5,000 resamples were used to estimate the confidence intervals for indirect effects, providing a robust test of mediation. Statistical significance was assessed at conventional levels ($p < .05$, $p < .01$, and $p < .001$). Prior to conducting the regression analyses, key assumptions were assessed. The normality of the residuals was examined using distributional plots, homoscedasticity was evaluated through visual inspection of residual scatterplots, and influential outliers were assessed using standardized residuals and leverage values. No substantial violations of these assumptions were noted.

Ethical statement

This study was conducted in accordance with the established ethical standards for research involving human participants. Ethical approval was obtained from the Institutional Ethics Review Board of Marian College Kuttikkanam (approval no. MCKA/IERB/040326). All participants provided informed consent prior to the study. Participation was voluntary, and the respondents were assured of confidentiality and anonymity. Data were collected, stored securely, and used exclusively for academic research purposes.

Results

This section presents the empirical findings of this study in a structured and systematic manner, aligned with the proposed conceptual framework and hypotheses. The analysis was

conducted in five stages. First, the sociodemographic characteristics of the sample were described to provide a contextual understanding of the study population. Second, descriptive statistics and reliability estimates for the key study variables were examined to assess the distribution and internal consistency of the measures. Third, Pearson's correlation analysis was conducted to explore the bivariate relationships among the variables. Fourth, a regression analysis was performed to test the direct effect of employment precarity on psychosocial well-being. Finally, mediation and moderation analyses using PROCESS models were employed to examine the indirect effect of social protection and the conditional effects of social exclusion and adaptive coping, respectively. This sequential approach ensured a comprehensive evaluation of the hypothesized relationships within the study model.

Socio-demographic characteristics of respondents

This section presents the study participants' sociodemographic profile to contextualize the sample and provide a background for subsequent analyses.

The sociodemographic profiles of the respondents are shown in Table 1. The study sample consisted of 428 interstate migrant workers with a mean age of 34.89 years ($SD = 7.47$), indicating a young to middle-aged working population. The age range (18–56 years) inferred representation from early to mid-to late adulthood.

TABLE 1 Socio-demographic characteristics of respondents ($N = 428$).

Variable	Category	<i>n</i>	%
Age (years)	Mean $\pm$ SD	34.89 $\pm$ 7.47	—
	Range	18–56	—
Gender	Male	313	73.1
	Female	115	26.9
Education Level	No formal education	22	5.1
	Primary	71	16.6
	Middle school	114	26.6
	Secondary/High school	115	26.9
	Higher secondary	65	15.2
	Diploma/ITI	26	6.1
	Graduate and above	15	3.5
Monthly Income	<10,000 INR	41	9.6
	10,001–20,000 INR	237	55.4
	>20,000 INR	150	35.0
Occupation Sector	Construction & allied work	223	52.1
	Manufacturing/industrial	61	14.3
	Hospitality & service	49	11.4
	Trade & informal urban work	54	12.6
	Other informal work	41	9.6

Values are presented as frequencies (*n*) and percentages (%). Age is reported as the mean and standard deviation (SD), along with the observed range.

The gender distribution was notably skewed, with men constituting the majority (73.1%) and women accounting for 26.9%. This pattern indicates that foreign employment for both men and women is gendered and class based.

Respondents' educational attainment showed that most had a middle school (26.6%), secondary, or high school (26.9% education). Only 3.5% of the respondents held graduate-level qualifications or higher, which is a small percentage.

In terms of income distribution, the majority of the respondents i.e., 55.4% of the respondents, were earning between ₹10,001 and ₹20,000 per month, lower middle income class. A smaller proportion of the respondents earned less than ₹10,000 (9.6%). Incomes of 35.0% are above ₹20,000.

Occupationally, more than half of the respondents (52.1%) were engaged in construction and allied work, followed by smaller proportions in manufacturing (14.3%), trade and informal urban work (12.6%), and the hospitality and service sectors (11.4%). These findings affirm the presence of interstate migrant workers in labor-intensive and informal job sectors.

Overall, the sample characteristics are consistent with the typical patterns of interstate labor migration in Kerala, reflecting a predominantly male, moderately educated, and concentrated workforce in the low- to middle-income informal employment sectors.

Descriptive statistics and internal consistency of study variables

Descriptive statistics and internal consistency estimates of the key study variables were computed to assess their distributional properties and reliabilities. Table 2 presents the descriptive statistics and reliability estimates for the key study variables. The results indicate moderate levels of employment precarity ($M = 13.02$, $SD = 4.18$), social protection ($M = 12.58$, $SD = 4.09$), social exclusion ($M = 13.85$, $SD = 4.32$), and adaptive coping ($M = 14.21$, $SD = 4.05$) among the respondents. Psychosocial well-being exhibited a mean score of 56.24 ($SD = 18.36$) on a 0–100 scale, indicating considerable variability in the well-being levels across the sample.

The observed ranges for all variables suggested adequate dispersion, with psychosocial well-being spanning the full theoretical range (0–100), whereas the remaining constructs covered nearly their entire possible score distribution. This variability supports the suitability of the data for inferential analysis. The distributional properties of the variables were also examined and found to be consistent with the assumptions required for parametric analysis.

All constructs demonstrated excellent internal consistency, with Cronbach's alpha values ranging from 0.918 to 0.948. These values exceed the commonly accepted threshold of 0.70, indicating the high reliability of the measurement scales. Overall, the results confirm that the variables are both statistically robust and appropriate for further analysis.

Bivariate correlations among study variables

Table 3 presents the Pearson correlation coefficients for the study variables. Overall, the patterns of association were consistent with the proposed theoretical framework.

Employment precarity was significantly and negatively correlated with psychosocial well-being ($r = -0.470$, $p < .001$) and social protection ($r = -0.412$, $p < .001$), indicating that higher levels of precarious employment are associated with poorer psychosocial well-being and reduced access to institutional support. In contrast, employment precarity was positively associated with social exclusion ($r = 0.358$, $p < .001$), suggesting that workers experiencing greater employment insecurity are more likely to be excluded from social and community networks. A negative association was also observed between employment precarity and adaptive coping ($r = -0.307$, $p < .001$).

Social protection was strongly positively associated with psychosocial well-being ($r = 0.499$, $p < .001$), indicating that greater access to institutional support was associated with better psychological health outcomes. It was also positively correlated with adaptive coping ($r = 0.487$, $p < .001$), suggesting that individuals with greater access to protective resources may be better equipped to manage adverse conditions. Conversely, social protection was weakly and negatively associated with social exclusion ($r = -0.146$, $p < .01$).

Psychosocial well-being was positively associated with adaptive coping ($r = 0.303$, $p < .001$) and negatively associated with social exclusion ($r = -0.170$, $p < .001$), indicating that higher levels of coping are linked to better well-being, whereas experiences of exclusion are associated with poorer psychosocial outcomes. Notably, the relationship between social exclusion and adaptive coping was not statistically significant ($r = -0.084$, $p > .05$), suggesting that these constructs operate relatively independently in the model.

Notably, none of the correlation coefficients exceeded the commonly accepted thresholds for multicollinearity, indicating that the variables were sufficiently distinct and suitable for the subsequent regression analyses. To further verify this, the variance inflation factors (VIF) and tolerance values were examined using regression diagnostics. All VIF values ranged from 1.15 to 1.29, and the tolerance values ranged from 0.77 to 0.87, confirming the absence of multicollinearity among the predictors.

Direct effect of employment precarity on psychosocial well-being

A simple linear regression analysis was conducted to examine the direct effect of employment precarity on psychosocial well-being. As shown in Table 4, the overall model was statistically significant, $F(1, 426) = 120.50$, $p < .001$, explaining 22.0% of the variance in psychosocial well-being ($R^2 = .220$; adjusted $R^2 = .219$), indicating a moderate level of explanatory power.

Employment precarity emerged as a significant negative predictor of psychosocial well-being [$B = -2.317$, $SE = 0.211$, $\beta = -0.470$, $t = -10.977$, $p < .001$, 95% CI $(-2.732, -1.903)$]. This suggests that higher levels of employment precarity are associated with a substantial decline in the psychosocial well-being of interstate migrant workers. The magnitude of the standardized coefficient indicates a moderate-to-strong effect, underscoring the central role of structural employment conditions in shaping psychological outcomes of workers.

The Durbin–Watson statistic (2.085) indicates no evidence of autocorrelation in the residuals, supporting the validity of the regression model. The assumptions underlying the regression

TABLE 2 Descriptive statistics and reliability of study variables (N = 428).

Variable	No. of Items	Mean	SD	Min	Max	Cronbach's α
Employment Precarity	5	13.02	4.18	1	24	0.918
Social Protection	5	12.58	4.09	0	25	0.930
Psychosocial Well-being	5	56.24	18.36	0	100	0.948
Social Exclusion	5	13.85	4.32	0	25	0.932
Adaptive Coping	5	14.21	4.05	5	25	0.936

Values represent means (M), standard deviations (SD), and observed minimum (Min) and maximum (Max) scores. Cronbach's α indicates internal consistency reliability. All constructs were measured using a 5-point Likert-type response format, and composite scores were computed by summing item responses. Observed ranges reflect actual sample distributions. Psychosocial well-being scores were transformed to a 0–100 scale, with higher scores indicating better well-being.

analysis were examined and found to be satisfied, further supporting the robustness of the estimated model. Overall, these findings provide strong empirical support for Hypothesis 1, confirming that employment precarity exerts a significant negative influence on psychosocial well-being.

Mediation analysis of social protection in the association between employment precarity and psychosocial well-being

A mediation analysis was conducted to examine whether social protection mediates the relationship between employment precarity and psychosocial well-being. As presented in Table 5, employment precarity significantly predicted lower levels of social protection ($B = -0.453$, $SE = 0.049$, $t = -9.320$, $p < .001$), indicating that higher levels of employment insecurity were associated with reduced access to institutional support.

Social protection was a significant positive predictor of psychosocial well-being ($B = 1.650$, $SE = 0.195$, $t = 8.469$, $p < .001$), suggesting that greater access to welfare and institutional resources is associated with improved psychological outcomes. The total effect of employment precarity on psychosocial well-being was significant ($B = -2.317$, $SE = 0.211$, $t = -10.977$, $p < .001$). When social protection was included in the model, the direct effect of employment precarity remained statistically significant but was reduced in magnitude ($B = -1.570$, $SE = 0.215$, $t = -7.318$, $p < .001$), indicating partial mediation.

The indirect effect of employment precarity on psychosocial well-being through social protection was statistically significant ($B = -0.747$), with the 95% bootstrap confidence interval not including zero [$-0.979, -0.535$]. This confirms the presence of a significant mediation pathway. The indirect effect accounted for approximately 32.2% of the total effect, indicating that a meaningful proportion of the association between employment precarity and psychosocial well-being operates via social protection.

Overall, these findings provide empirical support for Hypothesis 2, demonstrating that social protection partially mediates the relationship between employment precariousness and psychosocial well-being. Although the mediation analysis provides evidence of a statistically significant indirect pathway, the findings should be interpreted cautiously. Given the cross-sectional design of the study, the observed mediation reflects statistical associations rather than temporal or causal sequences among the variables. Accordingly, the identified indirect effects should not be interpreted as definitive causal mechanisms.

TABLE 3 Bivariate correlations among study variables (N = 428).

Variable	1	2	3	4	5
1. Employment Precarity	—				
2. Social Protection	−0.412***	—			
3. Psychosocial Well-being	−0.470***	0.499***	—		
4. Social Exclusion	0.358***	−0.146**	−0.170***	—	
5. Adaptive Coping	−0.307***	0.487***	0.303***	−0.084	—

Values are Pearson's correlation coefficients.

* $p < .05$, ** $p < .01$, *** $p < .001$.

To further assess the robustness of the conceptual framework, additional comparative mediation analyses were conducted using social exclusion and adaptive coping as alternative mediating variables linking employment precarity and psychosocial well-being. As presented in Table 6, the indirect effect through social protection remained substantially stronger than the indirect effects observed for adaptive coping and social exclusion. Specifically, the indirect pathway through social exclusion was not statistically significant, as the bootstrap confidence interval included zero. Although adaptive coping demonstrated a statistically significant indirect effect, the magnitude of this pathway remained considerably smaller than the indirect effect associated with social protection. These comparative findings provide additional empirical support for the analytical positioning of social protection as the principal mediating mechanism within the present study framework.

Moderation analysis of social exclusion in the relationship between employment precarity and psychosocial well-being

A moderation analysis was conducted to examine whether social exclusion moderates the relationship between employment precarity and psychosocial well-being. As shown in Table 7, the overall model was statistically significant, $F(3, 424) = 40.00$, $p < .001$, explaining 22.1% of the variance in psychosocial well-being ($R^2 = .221$; adjusted $R^2 = .215$).

Employment precarity remained a significant negative predictor of psychosocial well-being ($B = -2.312$, $SE = 0.227$, $t = -10.189$, $p < .001$), indicating that higher levels of employment insecurity were consistently associated with lower

TABLE 4 Linear regression analysis predicting psychosocial well-being from employment precarity (N = 428).

Predictor	B	SE	β	t	p	95% CI Lower	95% CI Upper
Constant	78.793	2.784	—	28.299	<.001	73.321	84.266
Employment Precarity	−2.317	0.211	−0.470	−10.977	<.001	−2.732	−1.903
Model Fit: $R^2 = .220$, Adjusted $R^2 = .219$, $F(1, 426) = 120.50$, $p < .001$, Durbin–Watson = 2.085							

B, unstandardized coefficient; SE, standard error; β , standardized coefficient; CI, confidence interval. Dependent variable: Psychosocial well-being (PWB).

well-being. The standardized coefficient ($\beta = -0.526$) further indicates a moderate to strong effect size. In contrast, social exclusion did not emerge as a significant predictor ($B = -0.007$, $SE = 0.202$, $t = -0.033$, $p = .974$).

Crucially, the interaction term between employment precarity and social exclusion was not statistically significant ($B = 0.008$, $SE = 0.037$, $t = 0.229$, $p = .819$); the corresponding confidence interval included zero, indicating the absence of a moderating effect. This suggests that the relationship between employment precarity and psychosocial well-being does not vary significantly across social exclusion levels. Overall, these findings indicate that social exclusion does not significantly affect the relationship between employment precarity and psychosocial well-being. Therefore, Hypothesis 3 is not supported.

Moderation analysis of adaptive coping in the relationship between employment precarity and psychosocial well-being

A moderation analysis was conducted to examine whether adaptive coping moderates the relationship between employment precarity and psychosocial well-being. As shown in Table 8, the overall model was statistically significant, $F(3, 424) = 46.75$, $p < .001$, explaining 24.9% of the variance in psychosocial well-being ($R^2 = .249$; adjusted $R^2 = .243$).

Employment precarity remained a significant negative predictor of psychosocial well-being ($B = -2.046$, $SE = 0.219$, $t = -9.347$, $p < .001$), indicating that higher levels of employment insecurity were associated with lower well-being. The standardized coefficient ($\beta = -0.466$) indicates a moderate effect. In contrast, adaptive coping emerged as a significant positive predictor ($B = 0.761$, $SE = 0.193$, $t = 3.943$, $p < .001$), suggesting that individuals with higher coping capacity tend to report better psychosocial well-being. The standardized coefficient ($\beta = 0.168$) reflected a small-to-moderate effect size.

However, the interaction term between employment precarity and adaptive coping was not significant ($B = -0.015$, $SE = 0.034$, $t = -0.446$, $p = .656$); the confidence interval included zero, indicating the absence of a moderating effect. This suggests that the negative relationship between employment precarity and psychosocial well-being does not vary significantly across different adaptive coping levels. These findings indicate that although adaptive coping is positively associated with well-being, it does not significantly buffer the adverse effects of employment precariousness. Therefore, Hypothesis 4 is not supported.

However, given that interaction effects are typically more difficult to detect and may require greater statistical power, these null findings (Hypotheses 3 and 4) should be interpreted with caution. In addition, alternative explanations, such as

TABLE 5 Mediation analysis of social protection in the association between employment precarity and psychosocial well-being (N = 428).

Panel A. Regression Paths					
Path	B	SE	t	p	95% CI
a: Employment Precarity → Social Protection	−0.453	0.049	−9.320	<.001	[−0.548, −0.358]
b: Social Protection → Psychosocial Well-being	1.650	0.195	8.469	<.001	[1.268, 2.032]
c: Total Effect of Employment Precarity → Psychosocial Well-being	−2.317	0.211	−10.977	<.001	[−2.732, −1.903]
c′: Direct Effect of Employment Precarity → Psychosocial Well-being	−1.570	0.215	−7.318	<.001	[−1.991, −1.149]
Panel B. Indirect Effect					
Effect	B		95% Boot CI		
Employment Precarity → Social Protection → Psychosocial Well-being	−0.747		[−0.979, −0.535]		

B, unstandardized coefficient; SE, standard error; CI, confidence interval; Boot CI, bootstrap confidence interval. Mediation analysis was conducted using PROCESS Model 4 with 5,000 bootstrap samples. An indirect effect was considered statistically significant when the bootstrap confidence interval did not include zero.

measurement limitations, including the absence of formal construct validation and potential item redundancy, restricted variability in the moderator variables, and the cross-sectional nature of the data, may have influenced the ability to detect significant moderation effects.

Discussion

This study examined the association between employment precarity and psychosocial well-being among interstate migrant workers in Kerala, accounting for the roles of social protection, social exclusion, and adaptive coping, within an integrated analytical framework. The results present a clear and theoretically coherent picture. Employment precarity was strongly and significantly associated with psychosocial well-being, consistent with its theorized role as a structural stressor (Blustein et al., 2016; Louie et al., 2023). Social protection partially mediates the relationship between precarious employment and psychosocial well-being, suggesting that

TABLE 6 Comparative mediation analyses of social protection, social exclusion, and adaptive coping in the relationship between employment precarity and psychosocial well-being (N = 428).

Mediator	a Path (EP → M) B (SE)	b Path (M → PWB) B (SE)	Direct Effect c' B (SE)	Indirect Effect (a × b) B	95% Bootstrap CI
Social Protection	−0.453*** (0.049)	1.650*** (0.195)	−1.570*** (0.215)	−0.747	[−0.979, −0.535]
Social Exclusion	0.402*** (0.045)	−0.007 (0.202)	−2.315*** (0.219)	−0.003	[−0.175, 0.170]
Adaptive Coping	−0.348*** (0.048)	0.763*** (0.193)	−2.052*** (0.221)	−0.265	[−0.429, −0.124]

EP, employment precarity; M, mediator; PWB, psychosocial well-being; B, unstandardized coefficient; SE, standard error; CI, confidence interval. Comparative mediation analyses were conducted using PROCESS Model 4 with 5,000 bootstrap samples. An indirect effect was considered statistically significant when the bootstrap confidence interval did not include zero. ****p* < .001.

TABLE 7 Moderation analysis of social exclusion in the relationship between employment precarity and psychosocial well-being (N = 428).

Regression Model (Mean-Centered Variables)						
Predictor	B	SE	β	t	p	95% CI
Constant	50.439	1.124	-	44.893	<.001	[48.230, 52.647]
Employment Precarity (EP)	−2.312	0.227	−0.526	−10.189	<.001	[−2.758, −1.866]
Social Exclusion (SE)	−0.007	0.202	−0.002	−0.033	0.974	[−0.404, 0.391]
EP × SE	0.008	0.037	-	0.229	0.819	[−0.064, 0.080]
Model Fit: R ² = .221, Adjusted R ² = .215, F(3, 424) = 40.00, <i>p</i> < .001, Durbin–Watson = 2.084						

B, unstandardized coefficient; SE, standard error; β, standardized coefficient; CI, confidence interval. Standardized coefficients (β) are reported for main effects to facilitate interpretation. Interaction terms are not standardized. All predictors were mean-centered prior to analysis. Moderation analysis was conducted using PROCESS Model 1.

TABLE 8 Moderation analysis of adaptive coping in the relationship between employment precarity and psychosocial well-being (N = 428).

Regression Model (Mean-Centered Variables)						
Predictor	B	SE	β	t	p	95% CI
Constant	50.391	1.083	-	46.541	<.001	[48.263, 52.519]
Employment Precarity (EP)	−2.046	0.219	−0.466	−9.347	<.001	[−2.476, −1.615]
Adaptive Coping (AC)	0.761	0.193	0.168	3.943	<.001	[0.382, 1.140]
EP × AC	−0.015	0.034	-	−0.446	0.656	[−0.082, 0.051]
Model Fit: R ² = .249, Adjusted R ² = .243, F(3, 424) = 46.75, <i>p</i> < .001, Durbin–Watson = 2.102						

B, unstandardized coefficient; SE, standard error; β, standardized coefficient; CI, confidence interval. Standardized coefficients (β) are reported for main effects to facilitate interpretation. Interaction terms are not standardized. All predictors were mean-centered prior to analysis. Moderation analysis was conducted using PROCESS Model 1.

institutional resources may help mitigate these associations (Belvis et al., 2022; Voßemer et al., 2017). In contrast, neither social exclusion nor adaptive coping moderated this relationship. These findings suggest that the association between employment precarity and psychosocial well-being remained relatively consistent across the social and individual factors examined in this study (Zhang et al., 2021). The integration of these findings suggests that structural labor conditions demonstrate a comparatively strong association with psychosocial well-being, while the indirect role of social protection appears more substantial than the alternative pathways examined in this study. Supplementary comparative mediation analyses further demonstrated that the indirect pathways through adaptive coping and social exclusion were comparatively weaker than the pathway observed for social protection. Given the cross-sectional

design of this study, all reported relationships, including mediation effects, should be interpreted as statistical associations rather than as evidence of temporal or causal processes.

Employment precarity as a structural determinant of well-being

The strong negative association between employment precarity and psychosocial well-being represents the study's central empirical contribution. The findings conform to the stress process model, which views structural inequalities as chronic stressors with cumulative psychological effects (Blustein et al., 2016; Bretones et al., 2020; Louie et al., 2023). In the context of interstate migrant workers, precarious employment is

not a temporary condition but a persistent feature of labor market participation (Lu and Leicht, 2025; Rodríguez-Modroño et al., 2022). Job insecurity, unstable income, unsafe working conditions, and lack of contractual protection create continuous uncertainty in the process, which, in turn, undermines psychological stability and life satisfaction (Quan et al., 2022).

The findings suggest that employment precarity may function as a comparatively important structural factor associated with psychosocial well-being within the present context. According to this claim, labor market conditions are closely linked to an individual's overall mental health, particularly in informal economies (Merino-Salazar et al., 2023). While previous studies have established a general link between precarious employment and psychological distress, this study extends this understanding by situating the relationship within the specific context of internal migration (Zhang et al., 2023). Migrant workers often face layered vulnerabilities, where labor insecurity is compounded by displacement, limited social integration, and restricted access to institutional resources (Chen et al., 2017; Liu et al., 2020). The findings suggest that structural labor conditions demonstrated a comparatively consistent association with psychosocial well-being across the contextual factors examined in this study. These findings should be interpreted as context-specific and probabilistic, reflecting the patterns observed within this sample, rather than deterministic relationships.

Social protection as a partial institutional buffer

Mediation analysis revealed that social protection plays a significant, yet partial, role in shaping the relationship between employment precarity and psychosocial well-being. This finding is theoretically meaningful as it supports the proposition within the stress process model that institutional resources can buffer the impact of structural stressors (Belvis et al., 2022; Inanc and Kalleberg, 2022). Access to healthcare, welfare benefits, and labor protections appears to enhance psychological well-being by reducing uncertainty and providing a degree of security in otherwise unstable conditions (Carr et al., 2023; Voßemer et al., 2017). This finding should be interpreted with caution, as the partial conceptual proximity between employment precarity and social protection—particularly with respect to labor protection—may contribute to the strength of the observed association.

However, the partial nature of this mediating effect is equally important. This indicates that while social protection contributes to improved outcomes, it does not fundamentally alter the underlying structural conditions that generate vulnerability. This shows that this phenomenon is also seen in the case of informal labor, where there are policies but not strong implementation (Immervoll et al., 2022; Rajan et al., 2021). Migrant workers often face barriers related to documentation, awareness, and benefit portability, which limit their ability to fully access available protections (Kumar, 2025; Peter et al., 2020). Institutional support reduces the adverse impact of structural vulnerabilities rather than fundamentally altering the underlying labor conditions.

This finding has important implications for both theory and policy. This indicates that enhancing social protection systems

may be associated with improvements in well-being; however, this must be accompanied by structural reforms in labor market regulation (Kvart et al., 2025). Without addressing the root causes of employment precarity, institutional interventions are likely to be only partially effective.

Absence of moderating effects: rethinking social and individual buffers

The absence of significant moderating effects (Hypotheses 3 and 4) should be interpreted with caution, as interaction effects are inherently more difficult to detect and may require greater statistical power. Contrary to theoretical expectations, this study did not find evidence that social exclusion or adaptive coping significantly moderated the relationship between employment precarity and psychosocial well-being. This finding should be interpreted cautiously, as it does not necessarily imply a lack of significance. Rather, it suggests that the capacity of these factors to condition the effects of structural labor stressors may be limited in the present context (Carr et al., 2023).

The insignificant moderating role of social exclusion indicates that, while migrant workers may experience varying levels of social integration, these differences do not substantially change the association between precarious employment and well-being. One plausible explanation is that structural labor conditions exert a uniformly strong influence that overshadows the effects of social context. Even in cases where social networks are relatively stronger, the persistent nature of employment insecurity may limit the extent to which social support can buffer psychological distress (Oliveira et al., 2024; O'Dell et al., 2023). This finding challenges the assumptions within social capital frameworks that integration necessarily moderates structural disadvantage, suggesting that its role may be more indirect or context-dependent (Coninck and Solano, 2023).

The absence of a moderating effect for adaptive coping further indicates that individual-level strategies, while positively related to well-being, do not compensate for the negative effects of structural precariousness on well-being. Coping mechanisms may assist individuals in managing stress in the short term; however, their effectiveness is likely to be limited in the context of unrelenting insecurity and constrained mobility (Blustein et al., 2024). This may also reflect the post-COVID context of data collection, as the effectiveness of coping strategies varies across changing social and economic conditions (Algorani and Gupta, 2023). Brown and Westaway argue that an excessive focus on individual resilience in efforts to resolve social issues is problematic (Brown and Westaway, 2011). These findings suggest the need to reassess the relative importance of social and individual buffers in heavily constrained work settings. These perspectives suggest that while such factors may promote well-being, they do not fundamentally alter the relationship between structural stressors and psychological outcomes (Zhang et al., 2021).

The lack of significant moderating effects of social exclusion and adaptive coping warrants careful interpretation. One plausible explanation is that structural labor conditions are strongly associated with well-being outcomes in this context, potentially limiting the observable influence of social factors. In such contexts, even when social networks or adaptive coping

strategies are present, their capacity to buffer the effects of sustained employment insecurity may be limited. This finding aligns with emerging evidence suggesting that coping and social capital function more as supportive correlates of well-being than as mechanisms capable of altering structurally embedded stress pathways. Simultaneously, it is important to consider that the nonsignificant interactions may reflect measurement limitations, including the absence of formal construct validation and potential item redundancy, or the cross-sectional nature of the data, which limits the ability to capture dynamic buffering processes over time. Accordingly, the findings should be interpreted as context-specific and provisional, indicating patterns observed within the present sample rather than definitive evidence of the absence of moderating effects.

Theoretical contributions

This study contributes to the literature by proposing an integrated framework encompassing the structural, institutional, social, and individual dimensions of migrant experience (Kvart et al., 2025; Zhang et al., 2021). By applying the stress process model to internal migration and informal labor, this study demonstrates how employment precarity acts as a structural stressor, directly impacting well-being (Blustein et al., 2016). The inclusion of social protection as a mediating factor in the model highlights the effect of institutional resources on this relationship (Belvis et al., 2022).

These findings challenge conventional assumptions regarding the moderating roles of social exclusion and adaptive coping. By demonstrating their limited conditional effects, this study suggests that the influence of structural labor conditions may be more dominant than previously assumed (Quan et al., 2022; Zhang et al., 2021). This helps social vulnerability researchers recognize the importance of structural and institutional elements to a greater degree in theoretical and empirical work and how the indices can obscure such relationships.

Policy and practical implications

The findings of this study have important implications for policy and practice, particularly in the context of migrant labor governance in Kerala and similar settings. The central role of employment precarity in shaping well-being underscores the need for stronger regulation of informal labor markets (Benavides et al., 2022; Perri et al., 2024). Critical methods for reducing structural vulnerability include ensuring job security, enforcing the labor standards, and improving the working conditions.

The partial mediating role of social protection highlights its potential and its limitations. Expanding access to welfare schemes, improving migrant workers' awareness, and enhancing the cross-state portability of benefits are essential for increasing the effectiveness of institutional support systems (Cherian and Rajan, 2024; Rajan, 2023; Sabates-Wheeler, 2019). Policy interventions should focus not only on welfare provision but also on other structural causes of precarious employment.

The limited impact of social exclusion and adaptive coping further suggests that interventions focused solely on social

integration or individual capacity building are unlikely to produce substantial improvements in well-being unless they are accompanied by structural reforms (Carr et al., 2023). Although community-based initiatives and coping enhancement programs may have complementary value, they cannot substitute for systemic changes in labor and welfare systems.

This study suggests that structural labor conditions demonstrate a comparatively strong association with the psychosocial well-being of interstate migrant workers, while institutional resources appear to play a meaningful but partial mitigating role. Although social and individual factors matter, they do not seem to be sufficient to change the effects of employment precarity in highly constrained environments informal migrant labor settings. By illustrating that structural determinants are dominant and that institutional support is conditional, this study provides a more grounded and comprehensive understanding of migrant vulnerability, with important policy and theoretical implications.

Limitations

This study has several limitations to consider when interpreting the findings. First, the cross-sectional design does not allow for conclusions regarding temporal ordering or causal relationships among the variables. Although supplementary comparative mediation analyses were conducted to assess the relative strength of alternative indirect pathways, the cross-sectional nature of the data does not permit definitive conclusions regarding causal priority among the examined mechanisms. Second, the use of purposive sampling, while appropriate for accessing a hard-to-reach population, limits the representativeness of the sample and restricts the generalizability of the findings beyond the specific contexts of interstate migrant workers in Kerala. The sample may be influenced by sectoral concentration, particularly in construction and related informal occupations, as well as by accessibility to worksites and employer cooperation. In addition, language-related inclusion barriers and varying levels of willingness to participate may have affected the representation of certain subgroups. Third, all variables were measured using self-reported data collected within a single survey session using similar Likert-type response formats, which raises the possibility of common method variance and may have inflated observed associations. Finally, although the measurement instruments demonstrated high internal consistency, several scales were adapted for the study context and were not subjected to full construct validation (e.g., factor structure, convergent or discriminant validity), which should be considered when interpreting the findings. Furthermore, the absence of formal validation procedures and the potential for item redundancy, as indicated by high Cronbach's alpha values, may affect measurement precision, particularly in detecting interaction effects. In addition, some conceptual proximity between employment precarity and social protection—particularly with respect to labor protection—may have contributed to stronger observed associations and should be considered when interpreting the mediation findings. The study also does not explicitly examine sex-based differences in the relationship between employment precarity and psychosocial

well-being. Given established evidence on gendered labor experiences and mental health outcomes, this represents an important direction for future research. In addition, the analysis does not disaggregate employment precarity into its component dimensions, which may mask variation in how specific aspects of precarious work relate to well-being. These limitations should be taken into account in future research.

Conclusion

This study explores the association between employment precarity and the psychosocial well-being of interstate migrant workers in Kerala, focusing on the mediating role of social protection and the moderating roles of social exclusion and adaptive coping. The research findings suggest that employment precarity is a significant and consistent factor associated with psychosocial well-being. Additionally, the findings highlight the important role of structural labor conditions in shaping outcomes for migrant workers. While access to social protection partially mitigates the adverse effects of precarious employment, it does not fully offset these structural vulnerabilities. Supplementary comparative mediation analyses further indicated that the indirect pathways through adaptive coping and social exclusion were comparatively weaker than the pathway observed for social protection. In contrast, social exclusion and adaptive coping did not significantly moderate this relationship, indicating that the association between employment precarity and psychosocial well-being remained relatively consistent across the contextual factors examined in this study. This study emphasizes the need for structural and institutional action regarding migrant vulnerability. By integrating multiple dimensions within a unified framework, this study contributes to a more comprehensive understanding of how labor conditions, institutional support, and individual factors interact to shape psychosocial well-being in informal labor settings.

Data availability statement

The datasets presented in this study are available from the corresponding author upon reasonable request. The data are not publicly available because they contain information that could compromise the privacy of research participants.

Ethics statement

The studies involving humans were approved by Marian College Kuttikkanam (Approval No: MCKA/IERB/040326). The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

AK: Conceptualization, Formal analysis, Methodology, Writing – original draft, Writing – review & editing. SK: Formal

analysis, Investigation, Validation, Writing – original draft, Writing – review & editing. MR: Formal analysis, Methodology, Software, Writing – original draft, Writing – review & editing. SS: Data curation, Investigation, Validation, Writing – original draft, Writing – review & editing. AK: Conceptualization, Methodology, Software, Writing – original draft, Writing – review & editing. JB: Data curation, Investigation, Validation, Writing – original draft, Writing – review & editing.

Funding

The author(s) declared that financial support was not received for this work and/or its publication.

Conflict of interest

The author(s) declared that this work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fhumd.2026.1842262/full#supplementary-material>

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