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Beyond financial hardships: Exploring the effects of unemployment and low wages on psychological health in India

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Beyond financial hardships: Exploring the effects of unemployment and low wages on psychological health in India

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ABSTRACT

This paper examines the effects of unemployment and low wages on mental health in India. The analysis applies cross-sectional data from the Longitudinal Ageing Study in India (LASI), 2017–18. Seven different indicators of psychological distress are used. The relationships are estimated using the ordered polytomous logistic regression technique. Controlling for several individual characteristics, unemployed individuals are found to suffer higher odds of mental distress. Low wages increase the likelihood of higher life dissatisfaction levels. Compared to low-wage and out-of-labour-force individuals, unemployed individuals are at a higher risk of suffering psychological issues, implying that individuals do not voluntarily select unemployment over a low-paid job. The results also suggest that men are more affected by unemployment and low wages than women. These findings are largely similar to studies in Britain and Germany. In addition, the age group of 20–45, followed by 46–55, seems to be the most vulnerable to labour market outcomes.

1. Introduction

“A man willing to work, and unable to find work, is perhaps the saddest sight that fortune’s inequality exhibits under this sun.”

- Thomas Carlyle
(Scottish Philosopher)

There has been a large and growing interest in the impacts of labour market outcomes, primarily unemployment and low wages, on mental health. The interest is interdisciplinary, including economics, psychology, epidemiology, and sociology. Employment is not just about earning a living; it facilitates socialisation, creates a sense of purpose, and brings social status (Jahoda, 1982; Warr, 1987). Hence, it is unsurprising that empirical literature has a consensus about the negative impacts of unemployment on psychological well-being (e.g., see Fergusson et al., 2014; Kim and von dem Knesebeck, 2016; Paul and Moser, 2009; Pelzer et al., 2014).

While considerable research has been directed towards analysing this relationship, they are heavily concentrated on developed countries. The literature on developing and emerging markets is very thin, and to the best of my knowledge, no such study exists for India. Henceforth, this paper studies the effects of unemployment and low wages on

psychological well-being in India. As per the ‘India Employment Report 2024’ by the International Labour Organisation (ILO) and the Institute for Human Development (IHD), the employment conditions remain far from ideal (ILO, 2024)¹. Given the established detrimental impacts of poor employment conditions on mental health, it is necessary to shift the focus to India. Thus, this paper contributes to the literature in three ways: (i) presents an analysis of an emerging and developing market, thus checking the universality of the existing conclusions (via facilitating a comparative analysis between the global north and south); (ii) presents empirical proof to the speculations of this relationship for the Indian context; and (iii) assists in extending the focus from the economic to the psychological impacts, and henceforth, guides policy recommendations for India.

Psychological health is a broad concept as it relates to individuals’ emotions regarding their everyday activities. Such emotions may range from negative psychological states (dissatisfaction, depression, loneliness, etc.) to a more positive outlook. Thus, following Theodossiou (1998), this paper does not use aggregate measures of psychological well-being like Caseness Scores and the Kessler Psychological Distress Scale but attempts to recognise the effects of different personal and, mainly, labour market outcomes on different aspects of mental

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¹ See Executive Summary, pp. xx–xxi (“employment conditions remain poor” and high informality); Table 2.8, p. 29 (large shares below minimum wages); Fig. 2.17 and §2.9, pp. 47–49 (Employment Condition Index rise and post-2019 reversal); §2.10, p. 50 (summary of poor employment conditions).

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well-being. This study resorts to cross-sectional analysis using the nationally representative Longitudinal Ageing Study In India (LASI), 2017–18 microdata, and employs ordered logistic regression to analyse the individual's odds of experiencing those aspects given the individual's characteristics.

The rest of the paper is structured as follows: Section 2 presents the theoretical and literature review; Section 3 presents the empirical analysis; Section 4 concludes the study; and Section 5 provides the policy implications.

2. Theoretical and literature review

Following most relevant studies, this study is purely empirical and it is not directed by a formal theory (Jahoda, 1988). In fact, there is no overarching theoretical framework for unemployment and associated psychological well-being outcomes. However, the theories summarised below provide a comprehensive understanding, complementing each other.

The dominant theoretical explanation of the effects of unemployment on well-being is Jahoda's functional model (Jahoda, 1981, 1982) which differentiates between the latent and manifest functions of employment. Besides the obvious financial benefits of having a job, which allows individuals to support themselves, Jahoda identifies five additional indirect employment advantages. Firstly, having a job establishes a daily routine. Secondly, it facilitates interactions and shared experiences with people beyond one's family circle. Thirdly, being employed encourages individuals to contribute to a common goal beyond their personal objectives. Fourthly, employment is closely tied to one's sense of identity and social standing. Lastly, work entails regular engagement in activities. Conversely, unemployment deprives individuals of these social and psychological benefits associated with employment, leading to feelings of distress, a loss of self-worth, and a distorted perception of time and respect.

Expanding on the advantages of being employed, Warr (1987) model identifies nine factors, or "vitamins," that contribute to well-being: (i) having control over one's work; (ii) being able to utilise skills; (iii) having clear goals set externally; (iv) experiencing variety in tasks; (v) having a clear understanding of one's work environment; (vi) having a sufficient income; (vii) feeling physically secure; (viii) having social interactions, and (ix) holding a valued social position. According to this model, transitioning from employment to unemployment signifies moving to an environment with fewer of these "vitamins," resulting in a decline in well-being for those who experience this transition. In later iterations of his model, Warr introduces additional factors, such as supportive supervision and career prospects, which capture further positive aspects of employment (Warr, 2011, 2017).

Both Jahoda's functional model and Warr's vitamin model focus on the structural aspects of unemployment but portray unemployed individuals as "passive" participants. In contrast, another body of literature regards the unemployed as "active" agents who actively interpret their circumstances and develop coping strategies (see, for e.g., Fryer and Payne, 1984; Leana and Feldman, 1988, 1990; Leana et al., 1998). Drawing from stress and coping theories (Folkman and Lazarus, 1985; Lazarus and Folkman, 1984), this perspective explains the detrimental impact of unemployment on well-being as stemming from individuals' perception of their situation, such as viewing job loss as a negative event or stressor (for e.g., see van Eersel et al., 2021; Hamilton et al., 1993; Kinicki and Latack, 1990).

While these theories vary in their emphasis on either institutional dimensions or individual agency, they collectively lay the groundwork for understanding the detrimental impact of unemployment on well-being. To grasp the full experience of unemployment, it is essential to recognise the dynamic interplay between the individual and the broader environment, as well as factors that may differentiate the experience of unemployment. To achieve this understanding, I focus on two additional theoretical frameworks: the social identity approach (Hogg et al., 1995;

Hornsey, 2008; Tajfel, 1981; Tajfel and Turner, 2004; Turner et al., 2010) and the conservation of resources theory (Hobfoll, 1989, 2001, 2004; Hobfoll et al., 2018).

The social identity approach, including social identity and self-categorisation theories, highlights the significance of social identity in shaping individual identity. Accordingly, individuals may align themselves with a social group that embodies a social identity reflecting their attributes as members of that group (Hogg et al., 1995; Hornsey, 2008; Turner et al., 2010). Studies employing this approach attribute the adverse well-being outcomes of unemployment to the threatened or lost social identity experienced upon losing a job (for e.g., Cassidy, 2001; Ibañez and Lopez, 2018; Kitiashvili and Sumbadze, 2019; Knabe et al., 2016; McFadyen, 1995; Schöb, 2013, 2021). By departing from the social category of "the employed" and contravening the social norm of working, the unemployed individual encounters the stigma associated with unemployment, reducing utility and life satisfaction (Carroll, 2007; Howley and Knight, 2022; McFadyen, 1995). This approach elucidates why unemployment is more distressing when the societal expectation to work is strong (Clark, 2003; Clark et al., 2010). The significance of the normative effect is also highlighted in the meta-analysis conducted by Paul and Moser (2006), which investigates the role of work commitment (measured through factors like work involvement and the Protestant work ethic) in the relationship between (un)employment and mental health. Their findings suggest that both employed and unemployed individuals exhibit a strong commitment to work. For the unemployed, this creates a sense of "incongruence," and the stronger their commitment to work (i.e., the more robust their belief in the value of work in life), the greater the distress associated with unemployment (Paul and Moser, 2006).

The Conservation of Resources (COR) theory offers further insights. In broad terms, COR theory defines psychological stress as a response to the threat or actual loss of resources, as well as the absence of resource gain following investment in resources (Hobfoll, 1989, 2001). The COR theory has been applied to understand the experience of unemployment: becoming unemployed signifies the loss of a resource (such as employment) or the threat to resources (like money, financial security, status, or recognition of achievement), and the process of job searching typically demands a significant investment of resources (such as energy and time; Lim et al., 2016; Virick and McKee-Ryan, 2017), which may not yield positive outcomes. This downward spiral of resource depletion ultimately leads to impaired well-being.

Indeed, most empirical studies on psychological well-being consistently find that the unemployed tend to report lower levels of happiness and higher levels of mental distress compared to their employed counterparts (e.g., Clark and Oswald, 1994; Dooley et al., 1987; Gedikli et al., 2023; Theodossiou, 1998). Theodossiou (1998) draws upon data from the 1992 British Household Panel Study (BHPS). He uses six different measures of mental distress and utilises an ordered logistic regression approach. Controlling for several individual characteristics, he finds that unemployed individuals suffer significantly higher odds of experiencing depression, anxiety, loss of confidence, and a reduction in self-esteem and the level of general happiness, even compared with individuals in low-paid employment. Neubert et al. (2019) use a representative German panel database containing information on 113 unemployed and 1117 employed individuals to examine if unemployed individuals report lower subjective social status (SSS). They also examine the relationship between unemployment, SSS, and mental health. They measure SSS with the German version of the MacArthur scale. Mental health is measured using the mental component scale (MCS) of the SF-12. They find that unemployed individuals reported significantly lower national SSS, local SSS, and mental health compared to employed participants. Ahn et al. (2004) use data from the European Community Household Panel survey. Utilising an ordered probit and OLS model, they find that unemployment substantially reduces an individual's satisfaction levels with his/her main vocational activity and finance. Junna et al. (2022) conclude that poor mental health is associated with current and past

unemployment in Finland. They use longitudinal register data on 2720, 431 residents aged 30–60 (2008–2018) and estimate linear OLS and fixed effects models. The findings are corroborated by [Amin et al. \(2023\)](#) who explore the effect of unemployment on mental health using data from Finnish municipalities (2002–2019). They measure mental illness using a mental morbidity index, as well as mental health care utilisation and the use of antidepressants. Using instrumental variable estimation, they present a strong connection between unemployment and mental health. [Fergusson et al. \(2014\)](#) examines the associations between exposure to unemployment and psychosocial outcomes over the period from 16 to 30 years. They use fixed effects regression techniques. They use data from the Christchurch Health and Development Study, a longitudinal study of a birth cohort of 1265 children, born in Christchurch in 1977, who have been studied to age 30. They find that exposure to unemployment has small but pervasive effects on psychosocial adjustment in adolescence and young adulthood. [Islam and Amanullah \(2024\)](#) address the unemployed university graduates of Bangladesh to understand the relationship between unemployment and mental health. They observe the presence of a moderate to high degree of mental illness due to unemployment. [Thomson et al. \(2022\)](#) estimate the total effect of unemployment on mental health. They study adults 25–64 from nine waves of the representative UK Household Longitudinal Study ($n = 45,497/\text{obs} = 202,297$). They conduct causal mediation analysis using the inverse probability of treatment weights to estimate odds ratios and absolute differences for the effects of unemployment on CMD as measured in the same sweep, before the total effect and after the controlled direct effect blocking the income pathway. They conclude that unemployment has a clear deleterious effect on mental health in the short term. These findings raise serious questions about the notion that individuals willingly choose unemployment and suggest that observed unemployment is not voluntary. However, [McKenna and Fryer \(1984\)](#) discover that some individuals who experience periods of unemployment seem to avoid adverse psychological consequences. Similarly, [Fineman \(1987\)](#) identify cases of individuals who appeared to cope better with unemployment than with poorly paid, low-quality jobs. [Zeynep \(2023\)](#) also finds something similar for Turkey. The study utilises the Life Satisfaction Survey's individual-level data (a nationally representative survey with more than 324,000 observations in 17 years) between 2004 and 2020. Though the unemployed are found to have lower well-being than the employed, compared to employed people who are dissatisfied with their jobs, the unemployed's well-being is found to be statistically significantly higher. These findings suggest that if the alternative for unemployed individuals is a low-paying job, although they may experience lower levels of happiness compared to the average employee, they may still choose unemployment voluntarily. Their overall satisfaction derived from unemployment might be higher than the satisfaction derived from holding a low-paying job.

3. Empirical analysis

3.1. Data and variable descriptions

The study uses nationally representative LASI (Main Wave I, 2017–18) data. It includes data on

73,396 individuals. The individuals who have never worked or actively sought a job are dropped². Along with people who fit into the definition of unemployed, people physically capable of working who went out of the labour force abruptly and unwillingly for reasons beyond their control were also counted as unemployed. This sorting is done with the best possible judgement from the questionnaires in the dataset. The two specific cases are: (i) Temporally laid off, and (ii) Company closure.

² The rationale behind this is that these individuals can't be considered part of the labour force. Such individuals were usually born disabled, never wanted to work, had various chronic illnesses, and so on

All the other people who once worked but are not currently working due to different reasons are considered people not in the labour force (excluding the unemployed). Thus, the filtered dataset contains data on 52,015 individuals between 20 and 116 years of age who are either employed, unemployed, or out of the labour force. The incomes are calculated taking both the primary and side income into account. The incomes are converted to per day unit³.

The measures of psychological health considered in this study are quantified via the responses to the following seven questions:

1. How satisfied are you with your life?
2. How often did you have trouble concentrating in the last week? ⁴
3. How often did you feel depressed in the last week?
4. How often did you feel alone in the last week? ⁵
5. How often were you bothered by things that don't usually bother you in the last week?
6. How often were you afraid of something in the last week?
7. How often did you feel unrested during the day, no matter how many hours of sleep you had? ⁶

Table 1 Table A2, Table A3, Table A4, Table A5 presents the mean and frequencies of the different psychological health measures. Table 2 reports that all seven measures are highly correlated. The correlation coefficients are significant at 1 % level. The details of the explanatory variables (individual personal and employment characteristics) used in the regressions are reported in Table 3. For detailed descriptive statistics, check Table A1 and Fig. 1, Fig. 2, Fig. 3 to 4.

The individual characteristics are chosen following various literature. Age is one of the factors that deserve more attention owing to the inconsistency in findings about their impacts.

[Zacher and Frese \(2009\)](#) posit that unemployment might be more damaging to younger people as they might be more invested in their career goals while older people might perceive unemployment as an opportunity to focus on their relationships as they place more priority on relational goals ([Carstensen, 2006](#)). [Hepworth \(1980\)](#); [Clark et al. \(1996\)](#), and [Clark and Oswald \(1994\)](#) find a U-shaped pattern, with morale lower in middle age compared with younger and older age groups. However, [Bortner and Hultsch \(1972\)](#) and [Bray and Howard \(1980\)](#) find that self-esteem is higher in middle-aged individuals than among younger and older subjects.

Studies usually discover a more significant negative impact of unemployment on men's well-being compared to women's e.g., [Blanchflower and Oswald, 2004](#); [Clark, 2003](#); [Winkelmann, 2009](#). Masculine identity, which emphasises the importance of work, along with gender roles, norms, and societal expectations that typically associate domestic responsibilities with women, all contribute to unemployment being more socially acceptable for women ([Carroll, 2007](#); [Winkelmann and Winkelmann, 1998](#)).

Expanding upon COR theory, human capital may serve as a crucial resource in the face of job loss. Individuals with higher levels of education possess more educational resources and may better manage unemployment, viewing it as a temporary setback and anticipating that their human capital will aid them in securing a satisfactory job after a period of unemployment ([Kanfer et al., 2001](#); [McKee-Ryan et al., 2005](#)).

³ The weekly, monthly and yearly incomes are divided by 7, 30 and 365, respectively.

⁴ Difficulty concentrating is among the most prevalent diagnostic criteria across DSM-5 categories, particularly within emotional disorders such as mood and anxiety-related disorders (see [Hallion et al., 2018](#)).

⁵ Loneliness is often associated with mental health in the medical sciences (see [Mushtaq et al., 2014](#)).

⁶ Poor-quality sleep is often attributed to mental health issues. Further, a high correlation with several psychological health measures (see Table 2) validated my choice.

Table 1
Means and frequencies of the measures of psychological health.

	Mean	Completely Satisfied	Very Satisfied	Somewhat Satisfied	Not Very Satisfied	Not at all Satisfied
Life satisfaction	2.49	13.94 %	35.17 %	40.95 %	7.75 %	2.19 %
	Mean	Rarely or never (<1 day)	Sometimes (1 or 2 days)	Often (3 or 4 days)	Most or all of the time (5–7 days)	
Trouble concentrat-ing	1.51	63.23 %	25.54 %	8.16 %	3.07 %	
Feel depressed	1.54	61.21 %	26.67 %	9.27 %	2.85 %	
Feel alone	1.48	67.37 %	21.18 %	8.01 %	3.44 %	
Bothered by things	1.63	56.34 %	28.10 %	11.80 %	3.76 %	
Feeling afraid	1.36	74.80 %	16.44 %	6.36 %	2.40 %	
	Mean	Never	Rarely (1–2 nights/week)	Occasionally (3–4 nights/week)	Frequently (5 or more nights/week)	
Feeling unrested during daytime	1.63	60.00 %	22.11 %	12.53 %	5.35 %	

Table 2
Correlation coefficients between measures of psychological health.

	Life dissatisfaction	Trouble concentrating	Feel depressed	Feel alone	Bothered by things	Feeling afraid	Unrested during daytime
Life dissatisfaction	1.00						
Trouble concentrating	0.150*						
Feel depressed	0.172*	0.562*					
Feel alone	0.142*	0.395*	0.450*				
Bothered by things	0.101*	0.404*	0.420*	0.458*			
Feeling afraid	0.079*	0.416*	0.460*	0.472*	0.407*		
Unrested during daytime	0.109*	0.229*	0.226*	0.179*	0.186*	0.167*	

Note:.

* represents 1 % significance level.

Table 3
Means and definitions of the regressors used.

Variable	Mean	Definition
Unemployed	0.09	Dummy variable equal to 1 if respondent is unemployed.
Low wage	0.31	Dummy variable equal to 1 if respondent's wage is $\leq$ third decile of sample earnings distribution (INR 109.59 per day).
Not in LF	0.32	Dummy variable equal to 1 if respondent is not in the labour force.
Age	58.35	Age of respondent on last birthday (years).
Male	0.58	Dummy variable equal to 1 if respondent is male.
Secondary education	0.09	Dummy variable, equal to 1 if highest education is Secondary School.
HS education	0.05	Dummy variable equal to 1 if highest education is Higher Secondary.
University education	0.06	Dummy variable equal to 1 if highest education is university level.
Married	0.79	Dummy variable equal to 1 if respondent is currently married.
Children	3.36	Total number of children the respondent has.
Living arrangement	0.03	Dummy variable equal to 1 if respondent lives alone.
Residence	0.32	Dummy variable, equal to 1 if respondent's residence is urban.
Financial Support	0.13	Dummy variable equal to 1 if respondent received financial support from family in past 12 months.

Kondiroli and Sunder (2022) find that education improves mental health and the relationship is potentially mediated through better physical health, improved health behaviour and knowledge, and an increase in women's empowerment.

Several studies find that relationship status and companionship significantly impact an individual's mental well-being. The consensus is that the presence of a partner improves mental health conditions while being without a partner is detrimental (for e.g., Bortner and Hultsch, 1972; Chen et al., 2022; Grundström et al., 2021; Mushtaq et al., 2014). Therefore, I include the "Married" dummy to account for an individual's

companionship status. I also include another dummy "Living arrangement" to account for whether a person is living alone regardless of the companionship status. This dummy provides depth to the empirical analysis by adding a more detailed account of the individual's companionship status. A person can be married or in a relationship and yet be lonely if the person is living away from the partner. Chen et al. (2022) attest to the argument by providing empirical evidence. They find that married subjects who lived alone were prone to psychiatric morbidity. Similarly, having children is also a potential determinant of psychological health. Taking care of children can present challenges for parents, especially if they lack resources and support, which can negatively impact a parent's mental health. Troll (1982) remarks that while parents express positive feelings about their children, they often rank their children high on the list when asked about the sources of stress in their lives.

Research indicates that residential location, via the physical environment, social support networks, and healthcare access, significantly influences mental health (Cortina and Hardin, 2023; French et al., 2014; Melis et al., 2015). The results are mixed. While Muhammad (2023) finds evidence of psychological impairment associated with rural residence, Xu et al. (2023) find that an urban environmental profile of social deprivation, air pollution, street network, and land-use density is positively correlated with stress. Lastly, I use the "Financial Support" dummy which takes the value 1 if the respondent received financial support from family in the past 12 months, as a proxy for social support. Social support is a crucial determinant that boosts mental health and well-being (Choi et al., 2023; Ozbay et al., 2007).

3.2. Model description

The study now attempts to identify the personal and employment features that would affect an individual's different aspects of psychological health. Following Theodossiou (1998), this study utilises logistic regressions that relate the categorical regressands—the psychological health measures—to an individual's employment status and other

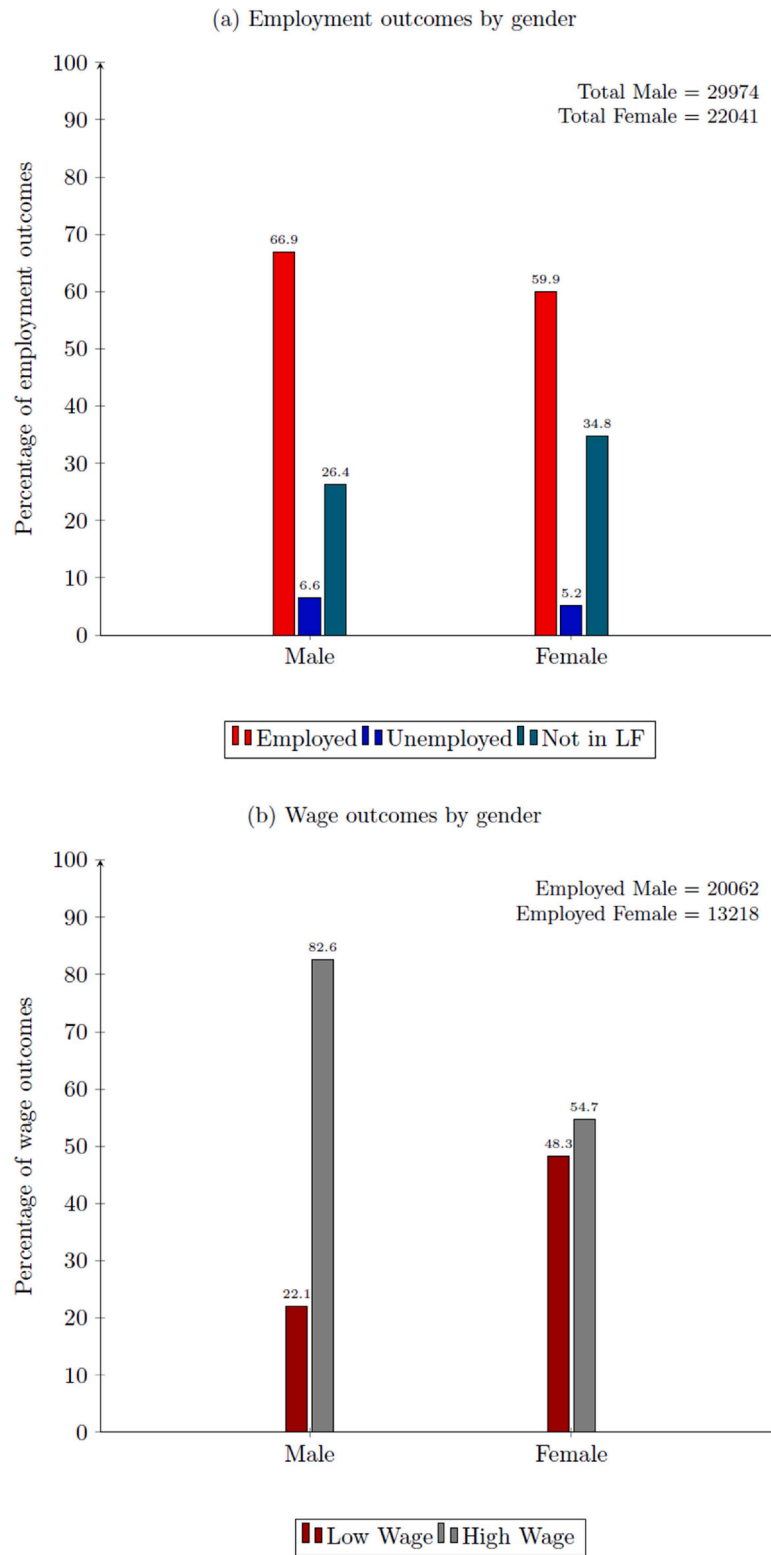


Fig. 1. Labour market outcomes by gender.

labour market and personal characteristics.

Anderson and Philips (1981), Ashby et al. (1986), and McCullagh (2018) discuss the ordered polytomous logistic regression. The utilised k -category ordered logistic model is defined as

$$\log(p_i / 1 - p_i) = a_i + b'x, i = 1, 2, \dots, k - 1 \quad (1)$$

where p_i is the logarithm of odds, i.e., the probability of being assigned

to one of the categories $i + 1, i + 2, \dots, k$; x is a vector of regressors; b is a vector of logistic coefficients (independent of i). The intercepts a_i vary between categories and satisfy $a_i \leq a_2 \leq \dots \leq a_{k-1}$. The individuals in the samples are assumed to be categorised independently of each other. This facilitates evaluating how each of the x individual characteristics contributes independently to the likelihood of being at different levels of psychological well-being. From the antilog of the logistic coefficients,

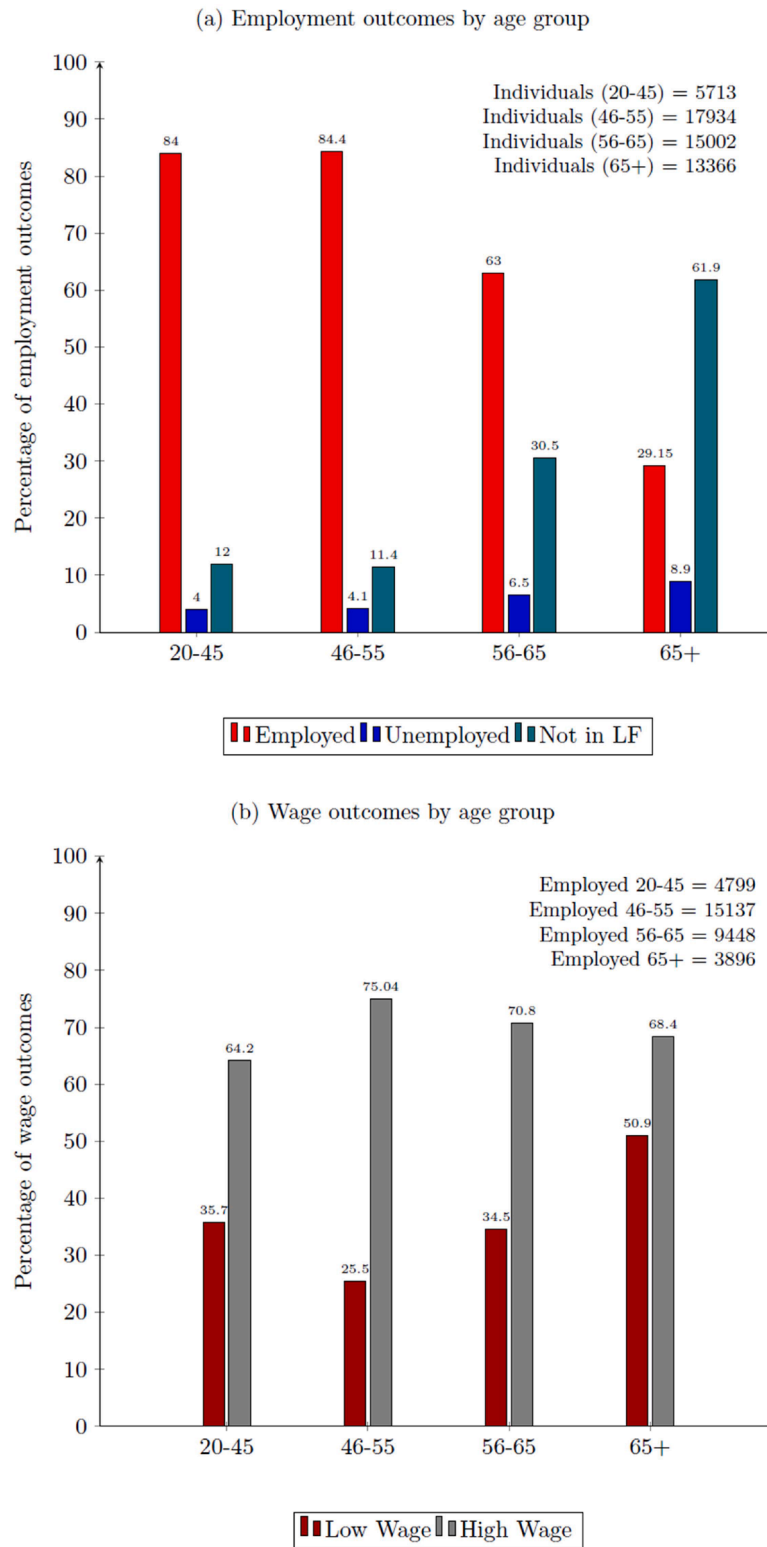


Fig. 2. Labour market outcomes by age group.

we can estimate the relative odds of being in each subsequent range of psychological health for individuals who possess a certain characteristic compared to those who do not (e.g., being unemployed or not or being married or not) after the impact of all other regressors has been accounted for. The antilog of the logistic coefficient (odds ratio) denotes the estimated increase in the odds of being in each subsequent range of the relevant psychological health measure's per unit increase in the

particular characteristic, such as the highest level of education attained.

3.3. Estimation and analysis

When determining which explanatory variables are significant, an appropriate criterion is the log-likelihood (Ashby et al., 1986). For two models featuring the same subjects, one with n independent variables

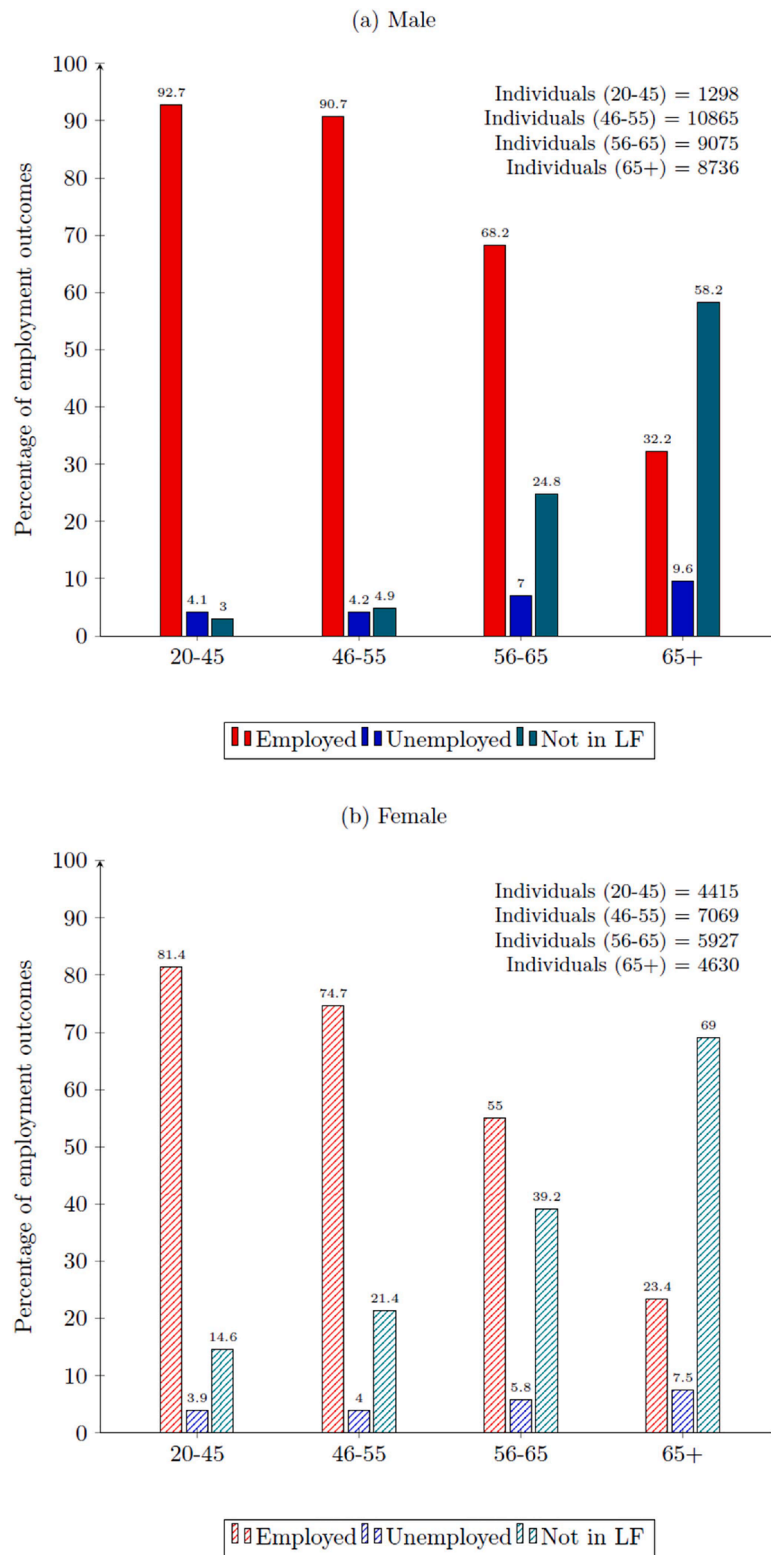


Fig. 3. Labour market outcomes by age group and gender.

and the other with additional m independent variables, twice the difference in the maximised log-likelihood is distributed asymptotically as χ^2 with m degrees of freedom, assuming the null hypothesis that the extra m variables do not improve discrimination between categories. This process is applied to the set of independent variables, and a variable is deemed significant if it surpasses the conventional 5 % level of significance ($\chi^2 > 3.84$). However, in estimating the various aspects of

psychological well-being, the entire set of variables is utilised to assess the effect of all regressors on the dependent variables. This approach allows for comparisons between the different aspects of psychological health.

Table 4 presents the regression results of the effect of labour market and personal characteristics on the pertinent measures of psychological health. Labour market status seems to significantly impact an

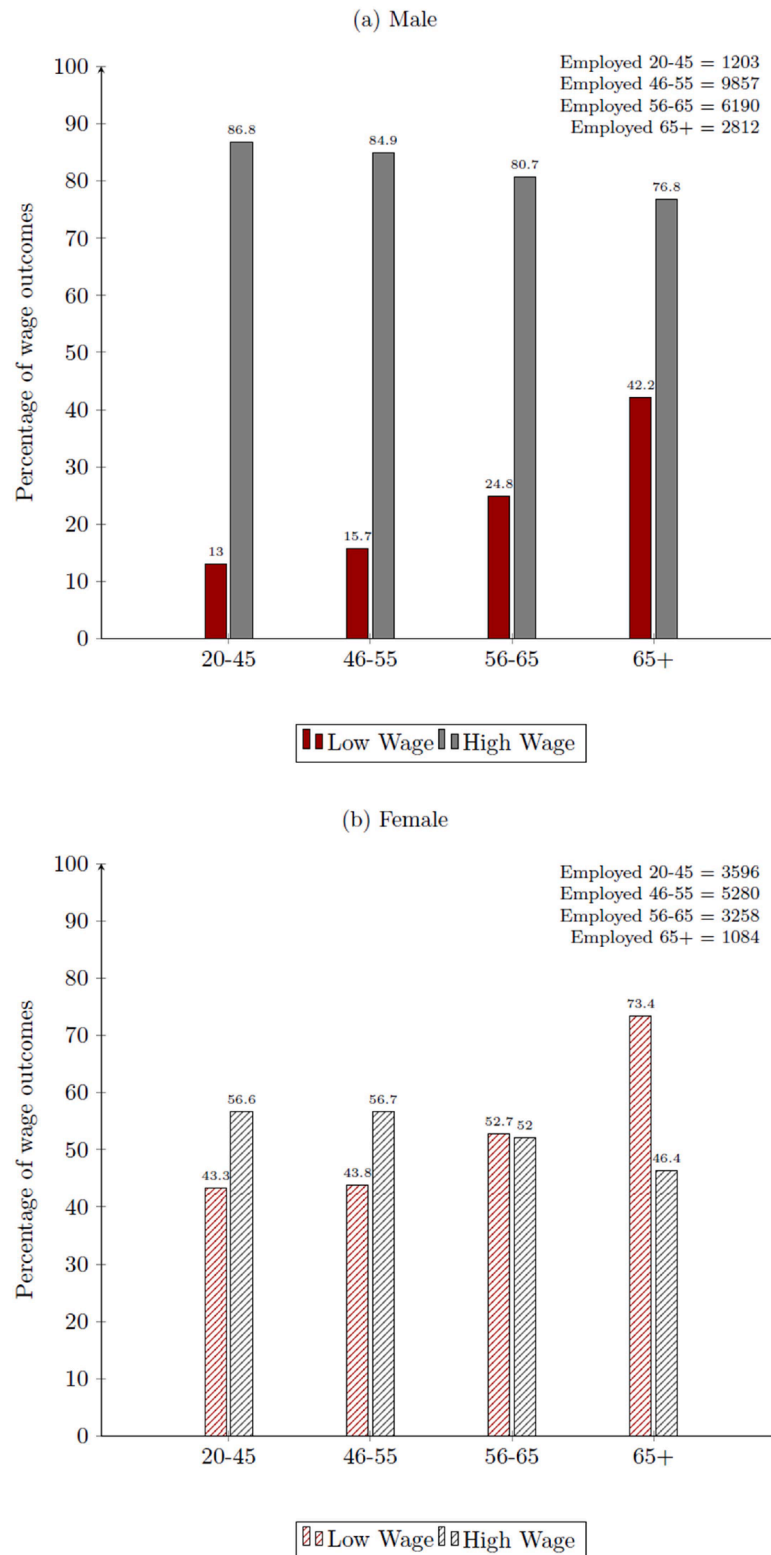


Fig. 4. Wage outcomes by age group and gender.

individual's mental well-being, even when controlling for other independent variables such as education level. The unemployment variable consistently emerges as one of the primary factors contributing to the differentiation between categories across various facets of psychological health, and its effects are always greater than those of the low-wage variable. Therefore, it seems like human beings place greater emphasis on having a job than just money. If unemployed, the odds of reporting

poorer levels of psychological health increase between 44 and 65 per cent across all indicators compared to employed individuals (the coefficients are highly significant at the 1 % level). Notably, the above odds are lower for individuals in the low-wage category (ranging between 0.85 and 1.14), implying the higher value attached to the fact that they at least have a job. The odds of reporting dissatisfaction with life are 1.49 times greater for unemployed individuals. This finding is in line

Table 4

Logistic regressions: effects of unemployment (Entire sample).

	Life dissatisfaction	Trouble concentrating	Feel Depressed	Feel alone	Bothered by things	Feeling afraid	Unrested during daytime
Unemployed	1.49***	1.64***	1.62***	1.45***	1.44***	1.64***	1.65***
Low wage	1.14***	0.95***	0.94**	0.91***	0.91***	0.85***	1.04*
Age	1.01	1.00	1.01	1.00	1.00	0.99	1.00
Age*Age	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Male	0.97	0.91***	0.89***	0.92***	0.89***	0.88***	0.83***
Secondary education	0.62***	0.82***	0.81***	0.81***	0.73***	0.87***	0.79***
HS education	0.57***	0.91*	0.77***	0.82***	0.87***	0.86**	0.84***
University education	0.36***	0.81***	0.76***	0.78***	0.77***	0.87**	0.71***
Married	0.60***	0.81***	0.74***	0.49***	0.83***	0.83***	0.89***
Children	0.98***	1.01	0.99*	0.97***	1.01**	0.99*	1.01***
Living arrangement	1.76***	1.16**	1.18**	2.31***	1.12*	1.21**	1.02
Residence	0.83***	0.93***	0.92***	0.94**	1.00	0.97	0.88***
Financial Support	1.07***	1.22***	1.27***	1.13**	1.27***	1.12***	1.29***
Observations	34,138	33,920	33,920	33,920	33,918	33,920	34,216
$\chi^2(13)$	1864.17	365.84	499.53	1291.23	361.68	247.99	631.36
Log likelihood	-42,311.02	-31,038.03	-32,077.25	-29,234.27	-35,451.37	-32,553.63	-34,479.02

Note: ***, ** and * represent 1 %, 5 % and 10 % significance levels, respectively.

with the literature that claim that unemployment causes psychological suffering and reduces life satisfaction (e.g., [Howley and Knight, 2022](#); [Knabe et al., 2016](#)). The odds of feeling depressed for unemployed individuals are 1.64 times higher compared to their employed counterparts, in line with the findings of [McGee and Thompson \(2010\)](#). However, the odds are lower (0.94) for individuals in low-paid jobs, reiterating the value placed on employment regardless of the pay structure. Joblessness increases the odds of lacking concentration, feeling loneliness, fear, and getting bothered by 64, 45, 64, and 44 per cent, respectively, while the odds are lower (0.95, 0.91, 0.85, and 0.91, respectively) for people in low-salary jobs. This further reflects the association of security with being in employment. The odds of reporting poor quality sleep are 1.65 and 1.04 times greater for unemployed and low-paid individuals as compared to their respective counterparts. The findings consistently highlight the involuntary and utility-lowering nature of unemployment. In general, these results are qualitatively similar to the British household and labour market study by [Theodossiou \(1998\)](#).

The findings concerning the remaining independent variables are mentioned below. I find no significant relationship between age and mental health. The gender of the individual significantly influences most facets of psychological well-being examined in this study, even when controlling for other independent variables. The odds of reporting trouble with concentration, depression, and feeling lonely are lower for a male (0.91, 0.89 and 0.92, respectively), while no relationship was found with overall satisfaction with life. Their odds of getting bothered, feeling afraid, and feeling unrested are also lower by 11, 12, and 17 per cent, respectively. This finding is similar to [Bortner and Hultsch \(1972\)](#); [Theodossiou \(1998\)](#) who find that women tend to be more critical of themselves and are more likely to devalue themselves compared to men. Higher educational attainment significantly reduces the odds of reporting higher psychological distress, in line with [Kondiroli and Sunder \(2022\)](#). Consistent with literature (e.g., [Wilson and Oswald, 2005](#)), I find that being married reduces the likelihood of being placed in higher categories of mental distress by 11 to 51 per cent while the number of children has very slight to no impacts. As expected, individuals who live alone report greater odds of poor psychological well-being across all indicators (ranging between 1.12 and 2.31). Similar to [Muhammad \(2023\)](#), the results suggest that individuals living in urban areas have significantly lower odds of suffering from psychological issues. Interestingly, contrary to my expectations, the results indicate that receiving financial assistance from relatives or family slightly increases the odds of mental distress (ranging between 7 and 29 per cent). A possible explanation is that individuals perceive the need for financial assistance as their incompetence.

Another aspect of interest in this study is whether the effects of

unemployment on an individual's psychological health are broadly applicable or if they vary based on gender and age. Given the significant physical, psychological, and social variations between different age groups and genders, it is reasonable to make comparisons regarding the respective profiles of psychological well-being. Some evidence suggests that the impacts of labour market outcomes on psychological health vary by gender and different age groups (e.g., [Unger et al., 2018](#)).

Therefore, I segregate the dataset based on gender and four different age groups (20–45, 46–55, 56–65 and above 65) and present them in [Tables 5 and 6](#), respectively. I use the same set of control variables for these regressions. However, for brevity, I only report the variables of interest.

The results show that if a man is unemployed, the odds of reporting a higher level of dissatisfaction with life are 1.59 times greater compared with employed individuals, whereas for a woman, the odds are only 1.33. They are also more likely to be dissatisfied with life if they are in low-paid employment, but to a lesser extent compared to unemployment (1.20 and 1.09 for men and women, respectively). The odds of feeling depressed increase by 77 per cent for unemployed men, whereas for unemployed women, it is 46 per cent. The above odds are less likely for both men and women in the low-paid employment category (0.91 and 0.96, respectively), but the relationship is statistically insignificant for women. The findings in terms of the remaining indicators are more or less similar. This suggests that women seem to be less affected by unemployment and low wages. This is compatible with the ingrained societal notion of men being "providers" and women "caregivers." The findings are comparable to German ([Unger et al., 2018](#)) and British ([Theodossiou, 1998](#)) socioeconomic dynamics.

Research on the psychological effects of unemployment indicates notable differences based on age. While young people may experience feelings of boredom or a lack of purpose due to unemployment, they generally maintain a more optimistic outlook on the world and find it easier to maintain social connections. Given their vigour and limited responsibilities, they are able to cope with negative labour market outcomes better. On the other hand, older individuals may feel more isolated, bored, inactive, and burdened with responsibilities. This study presents some interesting and mixed results. The odds of reporting dissatisfaction with life (2.47), depression (2.72), loneliness (1.85) and unrest (2.05) are the greatest for the age group of 20–45 while for the rest three categories, the odds for the age group of 46–55 are the greatest (odds ratio of 2.16, 1.68, and 1.87 for concentration troubles, feeling bothered, and being afraid, respectively). The odds of higher levels of dissatisfaction with life due to employment in low-paid jobs increase by 10 to 17 per cent across all age groups. For the rest of the psychological well-being indicators, the odds ratios for individuals in low-wage categories are lower for all age groups and statistically insignificant in

Table 5

Logistic regressions: effects of unemployment (By gender).

	Life dissatisfaction		Trouble concentrating		Feel depressed		Feel alone	
	Male	Female	Male	Female	Male	Female	Male	Female
Unemployed	1.59***	1.33***	1.77***	1.46***	1.72***	1.47***	1.53***	1.36***
Low wage	1.20***	1.09***	0.96	0.94*	0.91**	0.96	0.90***	0.91**
Observations	20,685	13,453	20,533	13,387	20,533	13,387	20,533	13,387
$\chi^2(12)$	955.19	779.28	187.46	133.37	221.28	201.10	524.85	654.49
Log likelihood	-25,449.94	-16,822.52	-18,307.84	-12,725.98	-18,840.89	-13,225.92	-16,974.95	-12,249.10
	Bothered by things		Feeling afraid		Unrested during daytime			
	Male	Female	Male	Female	Male	Female	Male	Female
Unemployed	1.43***	1.43***	1.78***	1.44***	1.68***	1.62***		
Low wage	0.92**	0.91***	0.86***	0.84***	1.03	1.05		
Observations	20,533	13,385	20,533	13,387	20,731	1348		
$\chi^2(12)$	156.52	127.09	126.32	92.66	309.96	214.33		
Log likelihood	-20,905.81	-14,537.84	-15,018.09	-10,512.56	-20,178.43	-14,291.89		

Note: ***, ** and * represent 1 %, 5 % and 10 % significance levels, respectively.

several cases (see Table 6). The results further confirm the involuntary nature of unemployment and the preference for low-paid jobs over joblessness across all age groups.

Since a significant proportion of the sample size was not working at the time of the survey due to various reasons but did not fit into the definition of unemployed, I create a separate category to check whether exclusion from the labour force also has an effect on psychological well-being. The findings are reported in Tables A2 - A5. The results principally suggest that being out of the labour force (as compared to employed individuals) also has detrimental effects on the psychological health of individuals. However, the odds ratios are smaller than those of the unemployed but larger than those of the low-paid segment. For the overall sample, I find odds ratios for not in the labour force ranging from 0.95 to 1.29 for all indicators except "bothered by things" for which no statistically significant relationship is found. Similar to the case of unemployment, the likelihood of suffering mental ailments due to not being in the labour force is higher for men as compared to women. When analysing the relationship by different age groups, the findings are mixed. In many cases, no statistically significant relationships could be established. For the rest, the detrimental effects of exclusion from labour force on mental health are evident. Most surprisingly, contrary to expectations that for the oldest age group of 65 and above, which is typically the retirement age in India, being outside the labour force is desirable, I find that the odds of having trouble concentrating, feeling depressed, lonely, afraid, and unrested are increased by 17, 13, 17, 24, and 23 per cent, respectively, and they are highly significant at 1 % level. This reiterates the value people associate with being in the workforce.

4. Conclusion

This paper adopts an ordered logistic approach to analyse the effects of unemployment and low wages in determining the odds of being at a high or low level of different facets of psychological health in India. The findings are in line with the economics and psychology literature involving case studies from mainly developed countries. The results in general suggest that being unemployed significantly increases the odds of reporting poor psychological health compared to their employed counterparts. Receiving low salaries increases the odds of dissatisfaction with life, though to a lesser extent when compared to unemployment. For other psychological well-being indicators, the odds of reporting distress are lesser for low-wage earners. The odds of being placed in a worse mental health category due to earning low wages and being unemployed are distinct and higher for men. The likelihood of reporting worse mental health conditions due to unemployment is the highest for the age group of 20–45 followed by the age group of 46–55 (across four and three psychological wellness indicators, respectively). The empirical

evidence further suggests that the impacts of unemployment on psychological health, as quantified by seven indicators, are far more severe than low wages and being out of the labour force. Thus, individuals do not perceive unemployment as a better alternative to jobs with low wages. These findings imply that unemployed individuals do not seem to derive more utility from unemployment compared to what they would derive from a low-paying job. These results strongly indicate that unemployment is not primarily a voluntary circumstance in India. These results are largely comparable to different studies of labour markets in the developed countries (see Theodossiou, 1998; Unger et al., 2018).

This study has certain shortcomings. A major roadblock faced is the data constraint. The dataset lacked data on the younger population. Hence, there is further scope for the age-group analysis with a more comprehensive dataset. Another data constraint is the unemployment estimates, which I believe are underestimated. A significantly large number of observations have an unexplained or insufficiently explained absence from employment. Hence, subsequent surveys should be designed in a way that captures the unemployment data more accurately. For instance, many responses to why they are not currently working include "business closure," "insufficient pay," "temporarily laid off," and "disabilities." All the respondents, regardless of the reason they state (except for the respondents who fit into the unemployed category in the first place) for not being in employment, should be followed up with the additional question to determine whether they fit into the "unemployed" definition. The dataset can be further enriched by incorporating more psychological measures like strain, loss of confidence, and feeling of being worthless in datasets that are standard in the literature. Another concern is the line of causality. It can be anticipated that mental health issues in unemployed workers could impair their skills and make them less desirable to employers⁷. Hence, future studies should check for and address this endogeneity issue using suitable instruments. Further recommendations and research directions for India include: (i) Checking spillover effects of the negative psychological outcomes of labour market conditions on partners and children; (ii) Conducting mediation analyses to determine the channels via which labour market outcomes impact individual's wellbeing (e.g., Neubert et al., 2019); (iii) Include more nuances to the research like duration of unemployment, and (iv) Treat psychological health and subjective well-being as distinct constructs (even though they are closely related) as opposed to this study that overlaps them. This can provide more layered insights (for instance, a person can be mentally healthy but still experience negative effects).

⁷ A few studies exist that analyse the relationship in the opposite direction and find psychological health to be a determinant of labour market outcomes (for e.g., Germinario et al., 2022; Moustieri et al., 2019)

Table 6
Logistic regressions: effects of unemployment (By age groups).

Life dissatisfaction				
	20 ≤Age≤ 45	46 ≤Age≤ 55	56 ≤Age≤ 65	Age>65
Unemployed	2.47***	1.57**	1.59***	1.31***
Low wage	1.11*	1.15***	1.17***	1.10*
Observations	4732	15,052	9792	4562
$\chi^2(13)$	251.64	782.1	594.65	286.96
Log likelihood	-5722.86	-18,487.94	-12,171.25	-5844.72
Trouble concentrating				
	20 ≤Age≤ 45	46 ≤Age≤ 55	56 ≤Age≤ 65	Age>65
Unemployed	1.69***	2.16***	1.38***	1.64***
Low wage	0.94	0.94	0.95	0.93
Observations	4709	14,954	9732	4525
$\chi^2(13)$	47.04	156.38	78.38	105.82
Log likelihood	-4276.01	-13,423.97	-9016.61	-4295.38
Feel depressed				
	20 ≤Age≤ 45	46 ≤Age≤ 55	56 ≤Age≤ 65	Age>65
Unemployed	2.72***	2.00***	1.47***	1.45***
Low wage	0.97	0.92*	0.99	0.84***
Observations	4709	14,954	9732	4525
$\chi^2(13)$	101.77	232.97	141.16	88.71
Log likelihood	-4404.62	-13,987.12	-9259.17	-4382.06
Feel alone				
	20 ≤Age≤ 45	46 ≤Age≤ 55	56 ≤Age≤ 65	Age>65
Unemployed	1.85***	1.70***	1.40***	1.33***
Low wage	0.87**	0.94	0.88**	0.49
Observations	4709	14,954	9732	4525
$\chi^2(13)$	109.57	499.21	424.6	255.55
Log likelihood	3949.23	-12,578.32	-8557.79	-4125.47
Bothered by things				
	20 ≤Age≤ 45	46 ≤Age≤ 55	56 ≤Age≤ 65	Age>65
Unemployed	1.55**	1.68***	1.36***	1.35***
Low wage	0.95	0.91**	0.90**	0.87**
Observations	4709	14,953	9732	4524
$\chi^2(14)$	56.3	182.97	104.05	63.02
Log likelihood	-5019.55	-15,533.34	-10,120.08	-4748.88
Feeling afraid				
	20 ≤Age≤ 45	46 ≤Age≤ 55	56 ≤Age≤ 65	Age>65
Unemployed	1.25	1.87***	1.54***	1.65***
Low wage	0.9	0.88***	0.83***	0.77***
Observations	4709	14,954	9732	4525
$\chi^2(13)$	27.78	96.98	86	72.44
Log likelihood	-3675.16	-11,116.1	-7348.21	-3387.56
Unrested during daytime				
	20 ≤Age≤ 45	46 ≤Age≤ 55	56 ≤Age≤ 65	Age>65
Unemployed	2.05***	1.74***	1.51***	1.73***
Low wage	1.01	0.99	1.09**	1.09
Observations	4739	15,076	9811	4590
$\chi^2(13)$	65.41	182.72	188.61	132.74
Log likelihood	-4725.9	-14,684.76	-10,036.92	-5004.21

Note: ***, ** and * represent 1 %, 5 % and 10 % significance levels, respectively.

5. Policy implications

The findings of this study have several policy implications for India which are noted below:

1. Establishing safety nets like unemployment and job-loss insurance can provide financial stability to individuals facing job insecurity, potentially mitigating the adverse mental health effects associated with unemployment.
2. Offering incentives to industries and companies for hiring late-career workers can foster inclusivity in the workforce, addressing age-

related discrimination, and bolstering mental well-being among older workers who may face challenges in securing employment.

3. Enforcing defined minimum wages ensures that workers receive fair compensation for their labour, which can alleviate financial strain and improve mental health outcomes.
4. Implementing and upholding well-defined labour laws stimulates a conducive work environment, reducing negative labour force outcomes and fostering a sense of security among workers, thereby positively impacting their mental health.
5. Maintaining efficient employment exchanges facilitates smoother transitions between jobs, reducing periods of unemployment and associated stressors, and ultimately promoting better mental health outcomes among job seekers.
6. Targeted programs such as job training and skill development initiatives enhance the employability of individuals, equipping them with the necessary tools to navigate the job market and potentially reducing the negative psychological impact of long-term unemployment.
7. Increasing awareness about mental health and expanding access to social services like counselling and helplines can destigmatise mental health issues and provide crucial support to individuals experiencing psychological distress due to unemployment or low wages.

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Data availability statement

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CRediT authorship contribution statement

Swapnanil SenGupta: Writing – original draft, Visualization, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix

Table A1
Regressor summary statistics.

	Obs	Std. Dev.	Min	Max
Unemployed	36,412	0.28	0	1
Low Wage	34,608	0.46	0	1
Not in LF	48,856	0.47	0	1
Age	52,015	11.35	20	116
Male	52,015	0.49	0	1
Secondary Education	52,015	0.29	0	1
HS Education	52,015	0.21	0	1
University Education	52,015	0.24	0	1
Married	52,015	0.41	0	1
Children	51,432	1.86	0	18
Living Arrangement	52,015	0.18	0	1
Residence	52,015	0.47	0	1
Financial support	52,015	0.33	0	1

Table A2
Ordered logistic regressions: effects of absence from labour force (Entire Sample).

	Life dissatisfaction	Trouble concentrating	Feel de-pressed	Feel alone	Bothered by things	Feeling afraid	Unrested during day
Not in LF	0.95**	1.17***	1.16***	1.17***	1.03	1.20***	1.29***
Observations	47,898	47,597	47,597	47,597	47,593	47,597	48,315
$\chi^2(12)$	1340.55	501.23	624.22	1920.86	393.3	279.62	1104.2
Log likelihood	-60,099.03	-44,509.10	-45,687.67	-42,059.25	-49,769.48	-36,387.74	-50,119.66

Note: ***, ** and * represent 1 %, 5 % and 10 % significance levels, respectively.

Table A3
Ordered logistic regressions: effects of absence from labour force (Male).

	Life dissatisfaction	Trouble concentrating	Feel de-pressed	Feel alone	Bothered by things	Feeling afraid	Unrested during day
Not in LF	1.01	1.27***	1.22***	1.23***	1.04	1.24***	1.31***
Observations	27,365	27,178	27,178	27,178	27,178	27,178	27,615
$\chi^2(11)$	1353.67	245.66	224.21	763.45	142.47	104.15	503.23
Log likelihood	-34,085.67	-24,696.95	-25,254.37	-22,971.15	-27,600.13	-20,088.92	-27,584.84

Note: ***, ** and * represent 1 %, 5 % and 10 % significance levels, respectively.

Table A4
Ordered logistic regressions: effects of absence from labour force (Female).

	Life dissatisfaction	Trouble concentrating	Feel de-pressed	Feel alone	Bothered by things	Feeling afraid	Unrested during day
Not in LF	0.91***	1.09***	1.11***	1.11***	1.02	1.17***	1.26***
Observations	0533	20,419	20,419	20,419	20,415	20,419	20,700
$\chi^2(12)$	1075.09	184.79	248.81	973.39	106.81	96.08	397.04
Log likelihood	-25,974.65	-19,802.49	-20,419.45	-19,074.95	-22,154.56	-16,277.66	-22,520.27

Note: ***, ** and * represent 1 %, 5 % and 10 % significance levels, respectively.

Table A5
Logistic regressions: effects of absence from labour force (By age groups).

Life dissatisfaction				
	20 ≤ Age ≤ 45	46 ≤ Age ≤ 55	56 ≤ Age ≤ 65	Age > 65
Not in LF	1.03	1.03	0.95	0.94
Observations	5400	16,954	13,779	11,765

(continued on next page)

Table A5 (continued)

Life dissatisfaction				
	20 ≤Age≤ 45	46 ≤Age≤ 55	56 ≤Age≤ 65	Age>65
$\chi^2(12)$	243.04	818.54	908.06	813.76
Log likelihood	-6563.57	-20,921.61	-17,226.51	-15,232.05
Trouble concentrating				
	20 ≤Age≤ 45	46 ≤Age≤ 55	56 ≤Age≤ 65	Age>65
Not in LF	1.01	1.29***	1.16***	1.17***
Observations	5375	16,855	13,691	11,676
$\chi^2(12)$	43.22	129.47	116.68	181.19
Log likelihood	-4834.51	-15,246.29	-12,855.57	-11,529.72
Feel depressed				
	20 ≤Age≤ 45	46 ≤Age≤ 55	56 ≤Age≤ 65	Age>65
Not in LF	1.13	1.37***	1.10**	1.13***
Observations	5375	16,855	13,691	11,676
$\chi^2(12)$	87.48	243.81	189.45	151.38
Log likelihood	-5014.18	-15,919.74	-13,121.37	-11,569.12
Feel alone				
	20 ≤Age≤ 45	46 ≤Age≤ 55	56 ≤Age≤ 65	Age>65
Not in LF	1.25**	1.25***	1.11**	1.17***
Observations	5375	16,855	13,691	11,676
$\chi^2(12)$	108.13	575.37	548.77	585.32
Log likelihood	-4519.22	-14,277.94	-12,169.27	-11,056.48
Bothered by things				
	20 ≤Age≤ 45	46 ≤Age≤ 55	56 ≤Age≤ 65	Age>65
Not in LF	0.96	1.11**	1.00	1.04
Observations	5375	16,854	13,690	11,674
$\chi^2(12)$	58.88	168.7	118.05	74.94
Log likelihood	-5713.94	-17,600.82	-14,196.48	-12,219.17
Feeling afraid				
	20 ≤Age≤ 45	46 ≤Age≤ 55	56 ≤Age≤ 65	Age>65
Not in LF	1.12	1.29***	1.17***	1.24***
Observations	5375	16,855	13,691	11,676
$\chi^2(12)$	26.8	85.23	87.85	102.01
Log likelihood	-4214.34	-12,639.42	-10,469.57	-9031.15
Unrested during daytime				
	20 ≤Age≤ 45	46 ≤Age≤ 55	56 ≤Age≤ 65	Age>65
Not in LF	1.22**	1.40***	1.30***	1.23***
Observations	5412	17,000	13,852	12,051
$\chi^2(12)$	63.56	241.31	313.49	230.14
Log likelihood	-5393.28	-16,730.63	-14,476.13	-13,493.5

Note: ***, ** and * represent 1 %, 5 % and 10 % significance levels, respectively.

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