

# Social Insurance for Gig Workers

Insights from a Discrete Choice Experiment in Malaysia

*Yashodhan Ghorpade*  
*Amanina Abdur Rahman*  
*Alyssa Jasmin*



**WORLD BANK GROUP**

Social Protection and Jobs Global Practice

December 2023

## Abstract

The rise of “gig” or digital platform work globally has led to both enthusiasm for its potential to create lucrative employment for large numbers of people, as well as concern about its implications for worker protection that is often provided in more standard employment. While gig work platforms may not be akin to employers in standard work relationships, arrangements that do not obligate them to provide worker protection and social insurance contributions may leave several platform workers unprotected against a range of risks. Is the observed lack of protection among digital platform workers explained by an unwillingness on part of the workers themselves to make necessary contributions for social insurance coverage? This paper analyzes this question in the context of Malaysia, a rapidly growing upper-middle-income East Asian economy that has witnessed a rise in gig work in recent years. The paper deploys a novel vignette-based experiment to ascertain gig workers’ willingness to pay for social insurance coverage. The analysis finds overall a large unmet need for social insurance among

gig workers, as well as a high level of willingness to pay for (especially) unemployment insurance, retirement savings, and accidental and injury insurance. This implies that the policy challenge is to channel such willingness into regular contributions for social insurance coverage through relevant and flexible options for contributions. More than subsidies, this segment of the workforce could perhaps benefit from better tailored, more flexible, and more easily accessible instruments for social insurance. The analysis also finds evidence of substitution between distinct insurance instruments. For instance, those who have access to retirement savings appear to be less willing to pay for unemployment insurance, and those with private medical insurance are less likely to contribute to the state-run injury insurance scheme. This underlines the need to approach risk insurance for digital platform workers more holistically and to consider a wider range of insurance instruments, including those offered by the private sector.

---

This paper is a product of the Social Protection and Jobs Global Practice. It is part of a larger effort by the World Bank to provide open access to its research and make a contribution to development policy discussions around the world. Policy Research Working Papers are also posted on the Web at <http://www.worldbank.org/prwp>. The authors may be contacted at [yghorpade@worldbank.org](mailto:yghorpade@worldbank.org).

*The Policy Research Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about development issues. An objective of the series is to get the findings out quickly, even if the presentations are less than fully polished. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.*

# Social Insurance for Gig Workers: Insights from a Discrete Choice Experiment in Malaysia

Yashodhan Ghorpade,<sup>1\*</sup> Amanina Abdur Rahman\*<sup>2</sup>, Alyssa Jasmin\*

Keywords: Gig Work, Social Insurance, Informal Employment, Willingness to Pay

JEL Codes: J32, J38, J46, J65

## 1 Introduction

In the last decade, the digital platform workforce has been growing worldwide, a trend that has been accelerated by the mobility restrictions imposed during the COVID-19 pandemic. Malaysia is no exception to this trend. The number of workers on eRezeki<sup>3</sup> (an aggregator platform for different types of digital platform work, namely digital microtasks, freelance, and location-based work in Malaysia) increased from 333,130 in 2019 to 699,517 in 2020, with the largest growth being seen in location-based work. Overall, 79% of digital platforms in Malaysia are providing access to location-based work, while the platforms providing freelance work and digital microtasks make up about 12% and 9% of platforms, respectively.

---

<sup>1</sup> Corresponding author: [yghorpade@worldbank.org](mailto:yghorpade@worldbank.org)

<sup>2</sup> \*World Bank. The authors would like to thank En Luqman Ahmed (Government of Malaysia) and Mohd Redzuan Affandi and Muhammad Farhan Hizami (Malaysia Digital Economy Corporation) for their support for this study. The authors are grateful to Yasser el Gammal, Matthew Dornan, Richard Mark Davis, and Gonzalo Javier Reyes Hartley for helpful comments on earlier versions of this paper. Any remaining errors are our own.

<sup>3</sup> eRezeki is an initiative by the Malaysia Digital Economy Corporation (MDEC), which is a government agency that is mandated to drive digital adoption, develop industry ready tech talent, digital economy policies, and global champions. It is part of the Ministry of Communications and Multimedia Malaysia.

Digital platform workers (used interchangeably with the term ‘gig workers’) fall under the gambit of non-standard workers. Non-standard work encompasses all work that does not constitute a “standard employment relationship”, which is typically full-time, permanent, and is a part of a subordinate and bilateral employment relationship (ILO 2016). While the ILO (2016) distinguishes between informal employment and non-standard employment, both terms are used interchangeably in this paper, as our interest is in workers who are not covered by traditional arrangements for social insurance, which is a commonly used definition for informally employed workers (OECD/ILO 2019). In short, this paper defines digital platform workers (or gig workers) as a subset of the broader universe of informally employed workers, characterized by non-standard employment relationships.

While access to digital platform work has been important to support the livelihoods of those who were laid off during crises, including the recent COVID-19 pandemic – hence acting as an automatic stabilizer – the rapid growth of these jobs brings to the fore the issue of their protection. The protection of digital platform workers is made more complicated by the nature of their work which is often performed parttime or irregularly, and across multiple platforms. This may make the traditional social insurance model, based on regular contributions from employers and employees, untenable, both in terms of contributions and benefits.

Traditionally, social insurance programs in Malaysia, encompassing retirement savings (administered by the Employees’ Provident Fund (EPF)), workplace injury and disability insurance (administered by the Social Security Organisation (SOCSO)), and unemployment insurance (administered by the Employment Insurance Scheme (EIS, under SOCSO)), have only catered for employees, or formal workers with standard employment relationships. However, acknowledging the importance of protecting the sizable share of informally employed workers in Malaysia, the government introduced voluntary schemes for retirement savings in 2010, and for workplace injury and disability insurance in 2017. However, take-up for both schemes remains low. The voluntary retirement savings scheme, i-Saraan, covered 10.7% of all self-employed workers (defined as own account workers and unpaid family workers) in 2022, while the Self-Employment Social Security Scheme (SESSS) covered 16.4% of all self-employed workers in 2021. The reasons behind the low take-up rates for these schemes are unclear.

The objective of this paper is to assess digital platform workers’ assessments of social insurance coverage (that is, retirement pensions, insurance for workplace injuries) and unemployment insurance, as well as their willingness to pay for such coverage. We deploy a novel vignette experiment in an online survey of digital workers. The experiment involves the randomized allocation of fictitious job descriptions that offer alternate combinations of social insurance coverage and earnings to elicit digital workers’ preferred job description.

Overall, we find that the majority of digital workers value social insurance highly, and also report that they do not have sufficient social insurance coverage in their current work. They are willing to trade off a part of their earnings to receive social insurance coverage. This willingness is particularly high in the case of unemployment insurance, followed by retirement income and insurance for workplace injuries. The low prevalence of social insurance coverage despite a high willingness to pay for it suggests that current policies are inadequate in ensuring adequate coverage, calling for better and potentially more customized design and implementation of social insurance policies for gig workers, and not an emphasis on the affordability of insurance contributions alone.

To the best of our knowledge, this is the first paper that explores the willingness to pay for social insurance among gig workers, using a discrete choice experiment. This contrasts with other studies, which have analyzed the willingness to pay among informally employed workers more generally, relying typically on stated preferences. We also examine potential complementarities, as they may be seen by gig workers themselves, between private and social insurance instruments, as well as between social insurance instruments themselves, a subject that has not received sufficient attention. Finally, studies on social protection for gig workers have tended to focus on developed Western countries (Corujo, 2017; Forde et al., 2017; Petropoulos et al., 2019), where the initial conditions of social protection and the functioning of labor market institutions and mechanisms may be markedly different from those in developing countries. Given the increasing importance of the gig economy in developing countries, and its implications for the protection of workers, our analysis is highly relevant and timely to contribute to filling a critical research gap. The remainder of this paper is organized as follows: Section 2 provides an overview of the literature. Section 3 describes the online survey conducted for this analysis and the data generated through it, including the vignette-based experiment that was embedded in the survey. Section 4 discusses the methodology including the identification strategy. Section 5 presents results including (a) descriptive statistics, and (b) econometric analysis – including heterogeneity of estimates across relevant sub-groups. Section 6 concludes with a discussion of results and implications for policy.

## 2 Literature Review

Digital labor platforms are divided into two broad categories, the first being online web-based platforms, and the second being location-based platforms (ILO 2021; World Bank 2023). Through these platforms, three types of tasks may be performed; digital microtasks, digital work (which are hosted on web-based platforms), and location-based work (which is hosted on location-based platforms). Digital microtasks refer to simple tasks performed on web-based platforms that do not require specific skills, such as data entry or the processing of images. Freelance work refers to skilled digital work, such as website development, graphic design, or software testing, also performed on web-based platforms. Location-based work refers to work that is enabled through digital means (typically through an app) but needs to be performed on-site such as ride-hailing, delivery, and domestic services.

Traditionally, social protection is provided as part of standard employment contracts, characterized by long-term employment, a stable income, and employment benefits including pension plans, health insurance, and paid leave (World Bank 2018). In contrast, work performed on digital platforms is typically short-term and task-based and does not include any of these employment benefits. The rise of digital platform work therefore raises concerns on the protection of digital platform workers. In many countries, self-employed workers – including digital platform workers – are either not covered by social insurance systems or are only covered on a voluntary basis (Behrendt, Nguyen and Rani 2019), as is the case in Malaysia. Even when they are legally covered, provisions for self-employed workers are often less favorable compared to those for standard employees, or formally employed workers (Behrendt et al. 2019).

Recent efforts have sought to include digital platform workers in existing social insurance schemes. One of the ways this is being done is by clarifying the legal classification of such workers. In many cases, recognizing gig workers as employees would automatically grant them access to various employment benefits and rights (Berg et al. 2018). One example is in the case of Spain, where the Spanish Riders' Law, introduced in 2021 recognizes food delivery riders working through digital platforms as employees if the

platform exercises direction and control through algorithmic management (Eurofound 2021). Some countries have also mandated or encouraged voluntary registration to social insurance schemes, and have simplified the process to encourage uptake (Behrendt et al. 2018). Beyond protection through social insurance systems, some platforms have taken the initiative to offer private insurance to gig workers. For example, the platform Deliveroo has collaborated with Qover, a private insurance company, to provide private insurance for food delivery couriers in countries where Deliveroo operates, including Belgium, France, Ireland, and the Netherlands (Eurofound 2021). However, efforts to improve the protection digital platform workers have largely focused on location-based workers, given the complexity of regulating and providing protections for digital freelancers and workers performing digital microtasks, who perform tasks online and across country borders. Such efforts have also tended to be undertaken and studied more in developed country contexts, and relatively less is known about the complexity of regulation of gig work in low- and middle-income settings.

In situations where it is available, are informally employed workers willing to pay for social insurance? Using the contingent valuation method, which relies on eliciting respondents' stated preferences, various studies have explored the willingness to pay – as well as the characteristics that affect willingness to pay – for social insurance among informally employed workers and workers employed in the informal sector, particularly in developing countries. The studies generally indicate that these workers are willing to pay for health insurance. One study in Wuhan, China, found that on average, informal sector workers were willing to pay more than the average cost of basic health insurance (Bärnighausen et al. 2007). The level of willingness to pay has been found to be moderated by income level, with workers having higher levels of income being more willing to pay, as in the case of Vietnam (Huyen and Van Minh 2014) and urban Bangladesh (Ahmed et al. 2016). The same studies found that workers with higher levels of education are willing to pay more for social insurance (Huyen and Van Minh 2014; Ahmed et al. 2016). Similarly, another study in urban Bangladesh found that the willingness to pay for health insurance among informal sector workers is higher for those who were exposed to an educational intervention on occupational solidarity and health insurance (Khan and Ahmed 2013), reflecting the important role of awareness and education. In some cases, the cost of the insurance premium has been found to affect the willingness to pay. For example, in Indonesia, 70% of informal sector workers in a survey of 400 households were willing to pay for national health insurance, but at a premium that was lower than the prevailing rate (Dartanto et al. 2016). A study in Togo also found that 92% of informal sector workers were willing to pay for mandatory health insurance, but would require subsidized premia (Djahini-Afawoubo and Atake 2018). A study on the willingness to pay for a hypothetical national health insurance scheme in Sarawak, Malaysia, found that more than 90% of respondents were willing to pay for this scheme (Ahmad, Ting and Zafar Ahmed 2018). The factors affecting the willingness to pay included education level and awareness or insurance literacy. Although these studies have sought to examine the question of affordability of (and therefore the potential need for subsidies for social insurance uptake), their reliance on stated preferences alone makes them susceptible to greater social desirability bias in response, as well as less effective to elicit the marginal valuation of particular job attributes (in this case social insurance coverage) holding other job characteristics constant. These limitations could potentially result in a gap between stated preferences and real-life choices.

This paper uses a vignette-based discrete choice experiment, which improves upon the contingent valuation method by assessing choices between scenarios based on marginal differences of attributes, to

elicit the willingness to pay for social insurance.<sup>4</sup> The approach follows Eriksson and Kristensen (2014), who studied the trade-off between wages and alternate employment benefits among Danish workers. In their set-up, employment benefits included internet and a home computer, work-related training, health insurance, work-time flexibility, and an annual bonus. Out of all of the different employment benefits, they found that work-time flexibility was most highly valued, followed by health insurance (Eriksson and Kristensen 2014). Wiswall and Zafar (2018) employ a discrete choice experiment to estimate preference for work flexibility, job stability, and earnings among high-performing undergraduates at the New York University for hypothetical future jobs. Other studies that have employed a discrete choice experiment include Mas and Pallais (2017), who analyzed the willingness to pay for different work arrangements – with their main focus being flexibility – as part of a hiring process for a national call center in the US, thus allowing them to replicate a real market transaction. When comparing their findings through the hiring process and a vignette-based survey experiment that they conducted to test for validity, their results were broadly consistent. In turn, this suggests that vignette-based experiments, when designed properly, can generate responses that are similar to market choices (Mas and Pallais 2017).

### 3 Data

Our sample consists of 1,038 gig workers, including digital freelancers and location-based workers. The data was collected through an online survey administered by the Malaysian arm of a global market research firm, Ipsos. To gather respondents, we partnered with the Malaysia Digital Economy Corporation (MDEC) to tap into their network of digital freelancers via their Global Online Work Force (GLOW)<sup>5</sup> members, as well as an online panel respondents of gig workers. The data collection period is February 2022 – May 2022.

The online survey questionnaire is divided into four parts: (i) respondents' demographic background, which asks details on age, gender, schooling and marital status; (ii) employment characteristics, which asks details on respondents' current employment such as their status in employment, occupation, duration of employment, weekly pay, social security coverage, and other occupations if they are working more than one job; (iii) an experimental section on choosing between two hypothetical jobs; and lastly (iv) preferred work characteristics, which asks respondents' preferences on different aspects of work characteristics using a 5-point Likert scale from "Very Important" to "Not important". Some examples of work characteristics include earning good money, the ability to work in international settings/teams, insurance coverage for workplace injuries and pension income upon retirement.

### 4 Methodology

#### a. Research Question

This paper focuses on three inter-linked research questions:

---

<sup>4</sup> The contingent valuation method directly asks people for valuations of different attributes, while in discrete choice experiments, people are given the choice of two or more scenarios, in which attributes and prices/values are randomly varied, and are asked to choose their preferred option. Mas and Pallais (2017) discuss some of the different considerations with regard to the two methods.

<sup>5</sup> GLOW is a training program offered by MDEC for individuals interested in becoming a digital freelancer. During the peak of COVID-19, MDEC created a new program called GLOW *Penjana*, a highly targeted program to help individuals whose livelihoods were affected by the COVID-19 pandemic and movement restrictions.

- Are workers in non-standard employment willing to pay for access to social and unemployment insurance?
- Which sociodemographic characteristics of workers correlate with the willingness to pay for access to social insurance?
- Does the willingness to pay for social insurance coverage vary by workers' current receipt of social insurance coverage?

**b. Vignette-Based Experiment**

We deploy a vignette-based experiment to ascertain whether workers in non-standard employment are willing to forgo defined percentages of their current incomes to be covered by alternate social insurance schemes. We develop vignettes for two hypothetical jobs that we present to the respondent, from which they are asked to identify the job they prefer. We consider three types of social insurance coverage: retirement savings, unemployment insurance, and insurance for coverage of workplace injuries. To test the willingness to pay for each of these types of social insurance, we present the respondent with two job descriptions. Job A includes a standard baseline scenario for social insurance coverage, while Job B which has the same attributes as Job A in all aspects except for two dimensions that are varied at random, that is, the description of the insurance coverage package, and the associated income level.

The vignettes for unemployment insurance are illustrated in Figure 1 below. Each respondent is shown two vignettes: Job A, and a randomly chosen option among Jobs B1, B2, B3 and B4. While the description of Job A remains the same for all respondents, the attributes of Job B are randomized, among the options B1, B2, B3 and B4. These four options vary from each other in terms of the type of unemployment insurance coverage offered, and the implications for the respondents' pay (i.e. wages foregone for the associated unemployment insurance coverage). The values for the foregone wages offered in the job descriptions mirror real-life levels of contributions payable for national social insurance coverage.

Figure 1. Range of hypothetical jobs offered to respondent to choose from (Job A v/s one of Jobs B1 – B4)

	Job A	Job B1	Job B2	Job B3	Job B4
<b>Hours worked per week</b>	40 hours				
<b>Work Hours</b>	Monday to Friday, 9 AM to 5 PM	Monday to Friday, 9 AM to 5 PM	Monday to Friday, 9 AM to 5 PM	Monday to Friday, 9 AM to 5 PM	Monday to Friday, 9 AM to 5 PM
<b>Location of Work</b>	Fixed Office				
<b>Retirement Pension</b>	Regular pension after retirement (age 60) based on years of service in this job	Regular pension after retirement (age 60) based on years of service in this job	Regular pension after retirement (age 60) based on years of service in this job	Regular pension after retirement (age 60) based on years of service in this job	Regular pension after retirement (age 60) based on years of service in this job
<b>Health Insurance</b>	Included in compensation package				

<b>Unemployment Insurance</b>	No unemployment insurance	If you become unemployed you receive a monthly income of <b>MYR 800</b> until you find a job, for up to 6 months		If you become unemployed you receive a monthly income of <b>MYR 1,200</b> until you find a job, for up to 6 months	
<b>Monthly Take-Home Salary</b>	Equal to your current take-home salary	<b>0.5% less than your current take-home salary</b>	<b>0.2% less than your current take-home salary</b>	<b>0.5% less than your current take-home salary</b>	<b>0.2% less than your current take-home salary</b>

Note: The respondent is shown Job A, and one of Jobs B1, B2, B3 and B4 (randomly assigned), and asked to choose their preferred job between the two.

### c. Identification

We seek to examine the effect of the combination of the attributes of the social insurance package offered, and earnings on the likelihood of selecting the baseline job. Causal identification is determined by the randomized allocation of the description of job B (from B1 to B4) to respondents, i.e. the attributes of the social insurance package and the earnings offered in job B are orthogonal to respondents' observable and unobservable characteristics.

We estimate a Linear Probability Model (LPM) as depicted by the following equation

$$Prob(A) = \beta B_{ij} + \epsilon_i$$

Where:

Prob (A) is the likelihood of the respondent  $i$  preferring Job A, the baseline scenario

B is the randomly allocated hypothetical job description  $j$  from 1 to 4 to individual  $i$

$\epsilon$  is the error term

## 5 Results

### a. Descriptive Statistics

The survey data show that over 40% of respondents contribute to private health insurance (44.8%) and private retirement schemes (46.9%), while over 25% contribute to EPF (26.6%) and SOCSO (27.3%). The coverage of respondents by EPF and SOCSO is almost equivalent to that of the coverage of all employed persons (which includes formal and informal workers), estimated at about 30% (World Bank 2020). Moreover, the data also suggests that a relatively large share of respondents are already covered by private schemes. It is important to note that 44.9% of the respondents do not have other jobs outside of freelancing. Hence, they may have access to insurance or retirement savings through their other job(s).

There is a mismatch between what freelancers deem as very important, and what they currently have in their jobs – especially when it comes to protection. For instance, 68.9% of respondents stated that it is very important for them to have insurance for workplace injuries, 66% stated that it is very important for them to have pension income upon retirement, and 57.2% stated that it is very important for them to have health insurance. At the same time, 59.9%, 62.7%, and 57.8% reported that they do not have access to these in their current jobs. These findings suggest that there is a desire among gig workers for protection that they are not currently accessing through their current jobs.

This desire is also accompanied by a willingness to pay. More specifically, 67.9% and 69.5% of respondents respectively indicate that they are willing to receive 0.5% to 1% less monthly income for full coverage for occupational injuries. Most respondents prefer to have retirement savings in its current form, that is, to make regular contributions to EPF while also receiving regular contributions from their employer, in return for retirement savings in the form of lumpsum payment at the age of 55. Nonetheless, more than 35% of respondents indicate that they would be willing to receive 5% or 10% less income in return for regular contributions to EPF from their employer and a monthly pension among retirement. There is also a high willingness to pay 0.2% to 0.5% of monthly income in return for unemployment benefits of RM800 or RM1,200 monthly until they find a job.

## b. T-Tests for Verifying Randomization of Treatment Arms

Tables 1 a, b and c below show the results from an ANOVA used to perform a joint test of significance with the null-hypothesis that the means of key demographic and other characteristics of the respondents are not statistically distinct from each-other. We see that the choice of job descriptions assigned is on balance, not correlated with individual characteristics.

Table 1a: F test of joint significance of treatment arm means ( $H_0: \bar{X}B1 = \bar{X}B2 = \bar{X}B3 = \bar{X}B4$ ): Unemployment Insurance

Variable	Unemployment Allowance of RM 800/ month up to 6 months		Unemployment Allowance of RM 1,200/ month up to 6 months		F-stat	P-value
	0.5% lower earnings	0.2% lower earnings	0.5% lower earnings	0.2% lower earnings		
	Job B1	Job B2	Job B3	Job B4		
Male	0.59	0.53	0.54	0.53	0.755	0.519
Has Children	0.34	0.42	0.40	0.37	1.491	0.215
Single/ Unmarried	0.51	0.47	0.46	0.50	0.483	0.694
Age	35.19	35.44	36.74	34.96	1.427	0.233
Chinese	0.14	0.19	0.20	0.14	1.758	0.153
Indian	0.05	0.04	0.05	0.10	<b>2.929**</b>	0.033
Bumiputera	0.79	0.76	0.72	0.73	1.406	0.240
EDU: up to secondary	0.18	0.18	0.18	0.18	0.009	0.999
EDU: Post- secondary	0.22	0.27	0.25	0.26	0.485	0.693
EDU: Bachelor's	0.47	0.42	0.42	0.39	1.146	0.330
EDU: Professional	0.03	0.04	0.06	0.05	0.697	0.554
EDU: Masters+	0.09	0.09	0.10	0.12	0.428	0.733
Low Income	0.34	0.33	0.30	0.35	0.568	0.636
Med Income	0.36	0.29	0.34	0.35	1.055	0.367
High Income	0.30	0.38	0.36	0.30	<b>2.183*</b>	0.088
In Standard Employment	3.75	3.71	3.91	3.87	0.149	0.930
Time Preference Index	0.53	0.48	0.53	0.47	1.106	0.346

Risk Appetite (0-10)	6.61	6.84	6.56	6.49	1.174	0.318
N	259	264	255	260		

Table 1b: F test of joint significance of treatment arm means ( $H_0: \bar{X}B1 = \bar{X}B2 = \bar{X}B3 = \bar{X}B4$ ): Retirement Savings

Variable	No retirement Savings		Monthly pension based on contributions		F-stat	P-value
	5% higher earnings	10% higher earnings	5% lower earnings	10% lower earnings		
	Job B1	Job B2	Job B3	Job B4		
Male	0.53	0.56	0.55	0.54	0.175	0.913
Has Children	0.41	0.4	0.38	0.33	1.579	0.193
Single/ Unmarried	0.48	0.48	0.48	0.51	0.29	0.833
Age	36.2	35.22	35.1	35.82	0.618	0.603
Chinese	0.2	0.13	0.15	0.19	1.714	0.162
Indian	0.05	0.08	0.06	0.05	0.726	0.537
Bumiputera	0.72	0.76	0.77	0.74	0.679	0.565
EDU: up to secondary	0.17	0.19	0.18	0.18	0.101	0.959
EDU: Post-secondary	0.25	0.29	0.22	0.24	1.357	0.254
EDU: Bachelor's	0.45	0.38	0.44	0.42	1.002	0.391
EDU: Professional	0.03	0.05	0.06	0.05	0.468	0.704
EDU: Masters+	0.08	0.09	0.11	0.12	0.953	0.414
Low Income	0.32	0.32	0.34	0.34	0.297	0.828
Med Income	0.32	0.39	0.31	0.31	1.841	0.138
High Income	0.36	0.29	0.34	0.34	1.159	0.324
In Standard Employment	3.74	3.89	3.64	3.96	0.365	0.778
Time Preference Index	0.49	0.52	0.52	0.46	0.669	0.571
Risk Appetite (0-10)	6.74	6.52	6.51	6.74	0.913	0.434
	259	262	267	250		

Table 1c: F test of joint significance of treatment arm means ( $H_0: \bar{X}B1 = \bar{X}B2 = \bar{X}B3 = \bar{X}B4$ ): Workplace Injury Insurance

Variable	Insurance to cover workplace injuries		F-stat	P-value
	0.5% lower earnings	1% lower earnings		
	Job B1	Job B2		
Male	0.52	0.58	2.16	0.142
Has Children	0.32	0.44	7.559***	0.006
Single/ Unmarried	0.56	0.42	10.516***	0.001

Age	35.3	35.89	0.399	0.528
Chinese	0.16	0.17	0.078	0.781
Indian	0.08	0.04	2.928	0.088
Bumiputera	0.73	0.78	2.293	0.131
EDU: up to secondary	0.18	0.18	0.001	0.975
EDU: Post-secondary	0.26	0.24	0.161	0.689
EDU: Bachelor's	0.39	0.44	1.38	0.241
EDU: Professional	0.05	0.06	0.022	0.882
EDU: Masters+	0.11	0.08	2.382	0.123
Low Income	0.32	0.32	0.014	0.905
Med Income	0.34	0.36	0.363	0.547
High Income	0.34	0.32	0.242	0.623
In Standard Employment	4.11	3.94	0.252	0.616
Time Preference Index	0.49	0.57	3.011*	0.083
Risk Appetite (0-10)	6.71	6.59	0.329	0.567
N	262	266		

### c. Econometric Analysis

We sequentially examine the results for unemployment insurance coverage, retirement savings, and insurance for workplace injuries.

#### Unemployment Insurance

Table 2 below shows the coefficients of the LPM with dependent variable is the dummy variable for the choice of Job A (= 1 if the respondent chooses job A, 0 if she chooses job B). In the case of unemployment insurance, Job A includes no unemployment insurance and earnings are set at the same level as the respondents' current income.

Table 2: Likelihood of Choosing Job A with alternate unemployment insurance coverage offers/ earnings, total and by Gender, Age Group

*(Dep Var = 1 if Job A preferred to Job B, else 0. Job A has no unemployment insurance and earnings equal to respondents' current income)*

UI Coverage, Earnings features in Job B	Gender		Age			All respondents
	Male	Female	Age < 30	Age 30 - 39	Age >= 40	
Payment of RM 800 per month for 6 months, 0.5% lower income	0.204*** [0.0328]	0.178*** [0.0371]	0.195*** [0.0428]	0.192*** [0.0449]	0.192*** [0.0449]	0.193*** [0.0246]
Payment of RM 800 per month for 6 months, 0.2% lower income	0.150*** [0.0303]	0.185*** [0.0351]	0.129*** [0.0350]	0.183*** [0.0430]	0.183*** [0.0430]	0.167*** [0.0230]
Payment of RM 1,200 per month for 6 months, 0.5% lower income	0.167*** [0.0318]	0.120*** [0.0301]	0.143*** [0.0401]	0.191*** [0.0408]	0.191*** [0.0408]	0.145*** [0.0221]
	0.196***	0.156***	0.230***	0.179***	0.179***	0.177***

Payment of RM 1,200 per month for 6 months, 0.2% lower income	[0.0339]	[0.0330]	[0.0454]	[0.0437]	[0.0437]	[0.0237]
<i>N</i>	568	470	344	332	332	1,038

*Standard errors in brackets*

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Overall, we find that only between 14% and 20% of the respondents, across all 4 options of UI coverage would prefer Job A that carries no unemployment insurance. The vast majority (76% – 80%) of respondents would prefer to have unemployment insurance that provides a benefit of Malaysian ringgit (RM) 800 or RM 1,200<sup>6</sup> per month for up to 6 months of unemployment, even if it implies a reduction in earnings by 0.2% – 0.5%.<sup>7</sup> The willingness does not appear to differ much either by the level of unemployment income offered (RM 800 or RM 1,200), or by the level of income deduction for having such coverage (0.2% or 0.5% of current income). The high willingness for uptake of unemployment insurance among gig workers reflects an unmet need, and therefore a potential market for unemployment insurance among this segment that may be quite susceptible to volatility in the availability of work. The willingness to opt for UI does not seem to differ significantly by respondents' gender or age.

We now examine heterogeneity by labor market characteristics of respondents, namely income, experience of working with employers prior to current job, having another job (in addition to freelancing), and current access to EPF savings account for retirement income (through voluntary contributions, or contributions from any formal employment prior to their current work). We find that those who already have EPF coverage are much more likely to choose job A, i.e., not opt for unemployment insurance (Table 3 a columns 5 and 6) than those without (although the majority of them would still opt for any version of Job B that carries unemployment insurance). This has important policy implications as it suggests that those with retirement savings do not value unemployment insurance as much as those without, perhaps as they have some cushion in the event of a loss of work. This also suggests that a large share of gig workers view the two social insurance instruments (retirement savings and unemployment insurance) as substitutes. Although the retirement savings fund (EPF) is not typically meant to be drawn upon in case of unemployment, during the COVID-19 pandemic, the government allowed contributors to exceptionally withdraw their savings up to a certain amount at four different times between 2020 and 2022, to cope with the economic fallout of the pandemic, and in particular job losses. This may have led many to view the EPF also as a potential insurance against unemployment, in addition to being a retirement savings fund, even though it may not be able to make such exceptions in the future. A clearer definition of the aims and purposes (and therefore limitations in use) of particular insurance instruments should help avoid conflation between them and equip workers to make more informed choices. Alternatively, providing a benefit package that includes long-term benefits through retirement incomes, as well as the explicit (rather than exceptional) option to tap into a part of accumulated savings to meet unemployment-related contingencies could be envisioned to meet multiple aims.

We also find (in Table 3b, columns 2 and 3) that those with previous employment experience are somewhat less likely to prefer Job A with no unemployment insurance than those who have no experience

<sup>6</sup> These amounts are set roughly at the prevailing rates of unemployment benefits offered through the Employment Insurance Scheme run by SOCSO.

<sup>7</sup> These are similar to current deductions for EIS coverage.

other than with their current client/ employer. The experience of having previously changed jobs, including potentially involuntarily, may perhaps have persuaded workers about the value of having unemployment insurance in the event of a job loss more than those who have not yet experienced employer/ client mobility.

Table. 3a. Likelihood of Choosing Job A with alternate unemployment insurance coverage offers/ earnings, by Income level

	Income		
	Low Income	Med Income	High Income
Payment of RM 800 per month for 6 months, 0.5% lower income	0.205*** [0.0433]	0.172*** [0.0394]	0.205*** [0.0460]
Payment of RM 800 per month for 6 months, 0.2% lower income	0.151*** [0.0389]	0.143*** [0.0401]	0.198*** [0.0399]
Payment of RM 1200 per month for 6 months, 0.5% lower income	0.156*** [0.0416]	0.105** [0.0332]	0.174*** [0.0397]
Payment of RM 1200 per month for 6 months, 0.2% lower income	0.109*** [0.0326]	0.187*** [0.0411]	0.247*** [0.0494]
N	343	347	348

*Standard errors in brackets*

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 3b. Likelihood of Choosing Job A with alternate unemployment insurance coverage offers/ earnings, by Access to Retirement Savings Income

	EPF Coverage		Pvt. Retirement Savings	
	No	Yes	No	Yes
Payment of RM 800 per month for 6 months, 0.5% lower income	0.174*** (0.0272)	0.250*** (0.0545)	0.204*** (0.0339)	0.179*** (0.0356)
Payment of RM 800 per month for 6 months, 0.2% lower income	0.132*** (0.0251)	0.244*** (0.0478)	0.143*** (0.0304)	0.191*** (0.0345)
Payment of RM 1200 per month for 6 months, 0.5% lower income	0.085*** (0.0203)	0.318*** (0.0578)	0.099*** (0.0253)	0.202*** (0.0378)
Payment of RM 1200 per month for 6 months, 0.2% lower income	0.138*** (0.0247)	0.297*** (0.0575)	0.137*** (0.0272)	0.242*** (0.0433)
N	762	276	577	461

Table 3c. Likelihood of Choosing Job A with alternate unemployment insurance coverage offers/ earnings, total and by Current and Previous Employment Status

	Employers prior to current job		Other Jobs Currently?	
	None	1 or More	No	Yes
Payment of RM 800 per month for 6 months, 0.5% lower income	0.261*** [0.0471]	0.158*** [0.0280]	0.174*** [0.0355]	0.208*** [0.0340]
Payment of RM 800 per month for 6 months, 0.2% lower income	0.169*** [0.0413]	0.166*** [0.0277]	0.196*** [0.0377]	0.145*** [0.0286]
Payment of RM 1200 per month for 6 months, 0.5% lower income	0.229*** [0.0464]	0.105*** [0.0234]	0.148*** [0.0316]	0.142*** [0.0311]
Payment of RM 1200 per month for 6 months, 0.2% lower income	0.277*** [0.0494]	0.130*** [0.0253]	0.144*** [0.0335]	0.201*** [0.0330]
N	337	701	466	572

*Standard errors in brackets*

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

### Retirement Savings

Table 4 below shows the coefficients of the LPM with dependent variable is the dummy variable for the choice of Job A (= 1 if the respondent chooses job A, 0 if she chooses job B). In the case of retirement income, Job A includes contributions to a retirement savings fund as per EPF's current rules for contribution and retirement savings, and earnings are set at the same level as the respondents' current income. Two options of Job B (B1 and B2) offer no retirement savings fund but offer 5% and 10% higher earnings instead. The other two options (Jobs B3 and B4) offer a monthly pension plan after retirement instead of the current model which offers a lumpsum payout at retirement. Earnings through Jobs B3 and B4 are offered as 5% and 10% lower than respondents' current earnings, respectively.

Table 4: Likelihood of Choosing Job A given alternate retirement savings coverage offers/ earnings combinations in Job B, total and by Gender, Age Group

(Dep Var = 1 if Job A preferred to Job B, else 0. Job A has standard/ current EPF pensions coverage features and earnings equal to respondents' current income)

	Gender		Age			Total
	Male	Female	Age < 30	Age 30 - 39	Age >= 40	
No retirement savings fund or pension, 5% higher income (B1)	0.739*** [0.0375]	0.760*** [0.0390]	0.769*** [0.0480]	0.763*** [0.0434]	0.714*** [0.0496]	0.749*** [0.0270]
No retirement savings fund or pension, 10% higher income (B2)	0.755*** [0.0356]	0.739*** [0.0411]	0.810*** [0.0444]	0.716*** [0.0435]	0.730*** [0.0519]	0.748*** [0.0269]
Monthly pension upon retirement based on contribution, 5% lower income (B3)	0.601*** [0.0404]	0.689*** [0.0426]	0.717*** [0.0472]	0.613*** [0.0508]	0.585*** [0.0547]	0.640*** [0.0294]
Monthly pension upon retirement based on contribution, 10% lower income (B4)	0.630*** [0.0417]	0.626*** [0.0453]	0.695*** [0.0475]	0.603*** [0.0620]	0.576*** [0.0518]	0.628*** [0.0306]
N	568	470	344	362	332	1038

Standard errors in brackets

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

We see that when offered the prospect of no retirement savings fund/ pension, the majority (over 74%) of respondents regardless of gender and age, and of the level of earnings increase offered (5% or 10%) prefer Job A with the current features of the EPF-managed retirement fund. However, when offered the prospect of a monthly pension (in Jobs B3 and B4), we see a small decline in the share of respondents who prefer job A, suggesting that a monthly pension may be more attractive to some gig workers compared to a lumpsum amount. Younger workers (in their twenties) appear to have a slightly stronger preference for a retirement fund that makes a lumpsum payment to a monthly pension, compared to older workers (Table 5a). We find no differences in these patterns of job preference between freelancers with or without private retirement savings or EPF coverage currently (Table 5b).

Table. 5a. Likelihood of Choosing Job A with alternate retirement income coverage offers/ earnings, total and by Income, Retirement Pension Coverage status

	Income			Other Jobs Currently	
	Low Income	Med Income	High Income	No	Yes
No retirement savings Fund, 5% higher income	0.756*** [0.0477]	0.795*** [0.0446]	0.702*** [0.0474]	0.712*** [0.0419]	0.780*** [0.0350]
No retirement savings Fund, 10% higher income	0.771*** [0.0464]	0.796*** [0.0399]	0.658*** [0.0547]	0.735*** [0.0439]	0.756*** [0.0341]
Monthly pension upon retirement based on contribution, 5% lower income	0.674*** [0.0492]	0.639*** [0.0530]	0.609*** [0.0512]	0.583*** [0.0439]	0.693*** [0.0391]
Monthly pension upon retirement based on contribution, 10% lower income	0.663*** [0.0513]	0.641*** [0.0546]	0.581*** [0.0535]	0.664*** [0.0435]	0.595*** [0.0430]
N	343	347	348	466	572

Standard errors in brackets

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 5b. Likelihood of Choosing Job A with alternate retirement income coverage offers/ earnings by current access to EPF and private retirement savings

	EPF Currently		Retirement Savings	
	No	Yes	No	Yes
No retirement savings Fund, 5% higher income	0.753*** [0.0317]	0.740*** [0.0517]	0.752*** [0.0360]	0.746*** [0.0410]
No retirement savings Fund, 10% higher income	0.731*** [0.0320]	0.797*** [0.0488]	0.759*** [0.0362]	0.736*** [0.0403]
Monthly pension upon retirement based on contribution, 5% lower income	0.646*** [0.0346]	0.627*** [0.0563]	0.614*** [0.0395]	0.675*** [0.0440]
Monthly pension upon retirement based on contribution, 10% lower income	0.623*** [0.0352]	0.644*** [0.0628]	0.638*** [0.0411]	0.616*** [0.0462]
N	762	276	577	461

Standard errors in brackets

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

### Insurance for Work-Related Injuries

Table 6 below shows the coefficients of the LPM with dependent variable is the dummy variable for the choice of Job A (= 1 if the respondent chooses job A, 0 if she chooses job B). In the case of insurance for work-related injuries, Job A includes no insurance for work-related injuries, and earnings are set at the same level as the respondents' current income. Two options of Job B (B1 and B2) offer include full coverage of expenses incurred for treatment of work-related injuries, as is currently offered through SOCSO coverage. Earnings through Jobs B1 and B2 are offered as 0.5% and 1% lower than respondents' current earnings, roughly in line with real-rife contribution rates for SOCSO coverage.

Table 6: Likelihood of Choosing Job A given work-related injuries insurance and alternate deductions from earnings, total and by Gender, Age Group

(Dep Var = 1 if Job A preferred to Job B, else 0. Job A has no workplace injury insurance coverage and offers earnings equal to respondents' current income)

	Gender		Age			Total
	Male	Female	Age < 30	Age 30 - 39	Age >= 40	
Full insurance cover for injuries during work, 0.5% lower income	0.324*** [0.0403]	0.317*** [0.0416]	0.348*** [0.0499]	0.299*** [0.0493]	0.313*** [0.0512]	0.321*** [0.0289]
Full insurance cover for injuries during work, 1% lower income	0.323*** [0.0377]	0.279*** [0.0428]	0.282*** [0.0491]	0.316*** [0.0472]	0.313*** [0.0512]	0.305*** [0.0283]
N	291	237	177	185	166	528

Standard errors in brackets

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

We see that the majority of respondents (around two-thirds) in all circumstances tend to prefer a job that includes insurance for workplace injuries even if that means a reduction in income by 5% or 10%, while about one-third does not. This pattern does not appear to vary much by gender, age, or income levels of the workers, nor do respondents appear to be very sensitive to the share of income foregone for workplace injuries insurance (between the two options, 5% and 10%).

Table 7 shows that the preference for job A (without workplace injuries insurance) appears to be higher among those who already have SOCSO, private health insurance, or EPF coverage. This provides some evidence that the need for workplace injuries insurance is felt a little bit more acutely by those who do not have any other source of formal insurance, whether social or private, to fall back upon.

Table 7. Likelihood of Choosing Job A with alternate earnings scenarios for job B with workplace injuries insurance, by current access to EPF, private health insurance and SOCSO coverage

	EPF Coverage		Private Health Insurance		SOCSO Coverage	
	No	Yes	No	Yes	No	Yes
Full insurance cover for injuries during work, 0.5% lower income	0.258*** [0.0318]	0.486*** [0.0593]	0.288*** [0.0376]	0.362*** [0.0448]	0.280*** [0.0334]	0.413*** [0.0554]
Full insurance cover for injuries during work, 1% lower income	0.268*** [0.0315]	0.412*** [0.0601]	0.265*** [0.0380]	0.346*** [0.0419]	0.294*** [0.0328]	0.333*** [0.0559]
N	388	140	282	246	376	152

*Standard errors in brackets*

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

### Robustness Tests

We examine our results after weighting sample observations to make the sample representative of the employed population of Malaysia (whether full- or part-time). Weights are assigned using the inverse of the probability of distinct sets of workers grouped by the intersection of age, gender and education level. Our results (in Annex 1) are robust to weighting the sample to provide working population-level estimates. We also show that our results are robust to controlling for the variables that the random assignment of treatment arms was not balanced (Section 5b) in Annex 2.

## 6 Conclusions

Our analysis has revealed the large unmet need for social insurance coverage among gig workers in Malaysia and has also provided evidence in favor of the majority of such workers being willing to forgo shares of their earnings in exchange for social insurance. The willingness to pay is particularly high for unemployment insurance, as it may be quite likely that digital workers face uncertainties and volatility in the steady availability of work and could potentially benefit from protection against spells of unemployment. That they remain uninsured despite having the option to contribute voluntarily to secure retirement savings or private health insurance further suggests that the existing design and outreach of social insurance instruments may be either limited or unsuitable to the specific needs of gig workers. Given the gig workers' willingness to pay, the prerogative for government and policy agencies therefore is to review the design and accessibility of existing social insurance programs to make them more amenable to gig workers' requirements, who unlike more formal workers in standard employment relationships, do not have mandatory social insurance coverage. More than subsidies, this segment of the workforce could perhaps benefit from better-tailored, more flexible, and more easily accessible instruments for social insurance. While subsidized contributions may in some cases lead to higher enrollment in social security and increased formalization among standard employees (Aşık et al., 2022), our analysis shows that affordability (on the part of workers) is not the main constraint for gig workers in the Malaysian context, and that the willingness to pay for social insurance is not driven by demographic, education or income-related worker characteristics.

Interestingly, we find some evidence of substitution between distinct insurance instruments. Those who have access to retirement savings appear to be less willing to pay for unemployment insurance. This may be because of the recent experience in Malaysia where the government authorized, as an exception, contributors to the retirement savings fund to withdraw part of their savings well before retirement to deal with any exigencies during the COVID-19 pandemic. That this was done four times in 2 years to help workers cope with labor market shocks such as unemployment and reduced income may have blurred the distinction between retirement savings and unemployment insurance instruments.<sup>8</sup> Looking ahead, as retirement savings are unlikely to be exceptionally allowed again to help workers cope with unemployment, it would be important to promote unemployment insurance schemes on their own merit and for the distinct protection it can offer to digital workers, or explicitly allow some combination of benefits that can and cannot be withdrawn during the working life to maintain a balance between securing immediate and longer-term protection.

We also see that workers with private health insurance may be less inclined than others to be willing to pay for insurance against work-related injuries. While such insurance through the state agency (SOCSO) is mandatory for formal workers in standard jobs, gig workers can perhaps be protected against such risks through either public (SOCSO) or private health insurance; expanding the bouquet of options to ensure choice, access, flexibility and suitability for the specific needs and preferences of gig workers.

Our analysis also provides some program-specific insights for reforming or adjusting design parameters that could induce greater uptake among gig workers. These pertain to the sustained willingness to pay for workplace injuries insurance offered by SOCSO at even higher than prevailing rates (a subject of ongoing discussion for the financial sustainability of SOCSO), and the potential attractiveness of monthly pensions rather than a lumpsum payment as the form of retirement income support offered by the EPF.

As the gig economy continues to grow and create more opportunities for employment across the world, concerns over the protection of workers may likely increase. As our analysis indicates, many of these concerns can be addressed by recognizing and tapping into the synergies of public and private insurance instruments, careful modifications to the design parameters of social insurance programs to make both contributions and benefits more suitable to gig workers' needs, as well as better outreach for enhancing the uptake of programs. Emphasizing subsidized contributions alone may not sufficiently address the barriers gig workers face in securing sufficient protection.

---

<sup>8</sup> The four withdrawals are referred to as *i-Lestari*, *i-Sinar*, *i-Citra*, and special withdrawal. Members were allowed to withdraw a maximum of RM6,000, RM10,000, RM5,000, and RM10,000 for each scheme respectively. For the last two schemes, members were required to have a balance of at least RM100 after withdrawals.

## References

- Ahmed, S., Hoque, M. E., Sarker, A. R., Sultana, M., Islam, Z., Gazi, R., & Khan, J. A. (2016). Willingness-to-pay for community-based health insurance among informal workers in urban Bangladesh. *PLoS ONE*, *11*(2), e0148211
- Aşık, Güneş & Bossavie, Laurent Loic Yves & Kluve, Jochen & Nas Ozen, Selin Efsan & Nebiler, Metin & Oviedo Silva, Ana Maria, 2022. "The Effects of Subsidizing Social Security Contributions : Job creation or Informality Reduction ?," *Policy Research Working Paper Series 9904*, The World Bank.
- Bärnighausen, T., Liu, Y., Zhang, X., & Sauerborn, R. (2007). Willingness to pay for social health insurance among informal sector workers in Wuhan, China: a contingent valuation study. *BMC Health Services Research*, *7*, 1-16.
- Behrendt, C., Nguyen, Q. A., & Rani, U. (2019). Social protection systems and the future of work: Ensuring social security for digital platform workers. *International Social Security Review*, *72*(3), 17-41.
- Berg J. et al. (2018). Digital labour platforms and the future of work: Towards decent work in the online world. Geneva, International Labour Office.
- Corujo, B. S. (2017). The 'Gig' Economy and its Impact on Social Security: The Spanish example. *European Journal of Social Security*, *19*(4), 293–312. <https://doi.org/10.1177/1388262717745751>
- Dartanto, T., Rezki, J. F., Pramono, W., Siregar, C. H., Bintara, U., & Bintara, H. (2016). Participation of informal sector workers in Indonesia's national health insurance system. *Journal of Southeast Asian Economies*, 317-342.
- Djahini-Afawoubo, D. M., & Atake, E. H. (2018). Extension of mandatory health insurance to informal sector workers in Togo. *Health Economics Review*, *8*, 1-13.
- Eurofound (2021). Initiatives to improve conditions for platforms workers: Aims, methods, strengths and weaknesses, in *New forms of employment series*. Publications Office of the European Union, Luxembourg.
- Eriksson, T., & Kristensen, N. (2014). Wages or fringes? Some evidence on trade-offs and sorting. *Journal of Labor Economics*, *32*(4), 899-928.
- Forde, C., M. Stuart, S. Joyce, L. Oliver, D. Valizade, G. Alberti, K. Hardy, V. Trappmann, C. Umney and C. Carson (2017) The Social Protection of Workers in the Platform Economy, Study for the EMPL Committee, European Parliament.
- Huyen, D. T. T., & Van Minh, H. (2014). Willingness to pay for health insurance among informal sector workers: A case study from Hanoi Capital Vietnam. *Vietnam Journal of Public Health*, *2*(2).
- Khan, J. A., & Ahmed, S. (2013). Impact of educational intervention on willingness-to-pay for health insurance: A study of informal sector workers in urban Bangladesh. *Health Economics Review*, *3*(1), 1-10.
- Mas, A., & Pallais, A. (2017). Valuing alternative work arrangements. *American Economic Review*, *107*(12), 3722-3759.

Mohamad Norhaizam Ahmad , Ting, A. S., & Zafar Ahmed. (2018). Willingness to Pay (WTP) For National Social Health Insurance Scheme in Sarawak, Malaysia: A Contingent Valuation Study. *Global Business & Management Research*, 10(2).

OECD/International Labour Organization (2019), “Definitions of informal economy, informal sector and informal employment”, in *Tackling Vulnerability in the Informal Economy*. OECD Publishing, Paris.  
<https://doi.org/10.1787/103bf23e-en>

Petropoulos, G., J. S. Marcus, N. Moes and E. Bergamini (2019) Digitalisation and the European Welfare States, *Bruegel Blueprint Series*, Volume 30.

Wiswall, M., & Zafar, B. (2018). Preference for the workplace, investment in human capital, and gender. *The Quarterly Journal of Economics*, 133(1), 457-507.

## Annex 1. Robustness test: Regressions results using sampling weights to make the sample representative of the working population of Malaysia

Table A1.1: Likelihood of choosing Job A (with no unemployment insurance and earnings equal to respondents' current income), weighted estimates

	Unemployment insurance payment of MYR 800 per month for 6 months		Unemployment insurance payment of MYR 1,200 per month for 6 months	
	0.5% less income	0.2% less income	0.5% less income	0.2% less income
All respondents (n=1,038)	0.283*** [0.0481]	0.158*** [0.0352]	0.208*** [0.0448]	0.183*** [0.0373]
<u>Gender</u>				
Male (n=566)	0.276*** [0.0563]	0.130*** [0.0388]	0.237*** [0.0598]	0.205*** [0.0506]
Female (n=467)	0.298*** [0.0897]	0.205** [0.0668]	0.142** [0.0499]	0.135** [0.0424]
<u>Age</u>				
Less than 30 years (n=339)	0.336*** [0.0847]	0.167** [0.0625]	0.191** [0.0722]	0.215*** [0.0621]
30-39 years (n=362)	0.281*** [0.0705]	0.219*** [0.0627]	0.104* [0.0478]	0.176** [0.0582]
40 years or older (n=332)	0.258** [0.0860]	0.122* [0.0531]	0.276*** [0.0771]	0.168* [0.0703]
<u>Occupational skill level in main job</u>				
High-skilled (n=565)	0.323*** [0.0780]	0.146** [0.0471]	0.138* [0.0559]	0.169** [0.0618]
Mid- or low-skilled (n=370)	0.313*** [0.0699]	0.152** [0.0537]	0.239*** [0.0650]	0.192*** [0.0538]
<u>Income</u>				
Low income (n=343)	0.332*** [0.0992]	0.110** [0.0422]	0.321*** [0.0949]	0.122* [0.0523]
Medium income (n=347)	0.201** [0.0670]	0.199* [0.0827]	0.109 [0.0561]	0.145** [0.0464]
High income (n=348)	0.327*** [0.0832]	0.159*** [0.0478]	0.210** [0.0697]	0.277** [0.0840]
<u>Retirement savings</u>				
No savings (n=762)	0.256*** [0.0575]	0.0956*** [0.0267]	0.139** [0.0470]	0.105*** [0.0286]
EPF savings (n=276)	0.346*** [0.0899]	0.254*** [0.0748]	0.369*** [0.0962]	0.375*** [0.0951]
<u>Employers prior to current job</u>				
None (n=337)	0.369*** [0.0798]	0.233** [0.0808]	0.316*** [0.0811]	0.351*** [0.0862]
1 or more (n=701)	0.234*** [0.0609]	0.118*** [0.0294]	0.133** [0.0467]	0.103*** [0.0295]
<u>Other jobs currently?</u>				
No (n=466)	0.265*** [0.0714]	0.158** [0.0506]	0.189*** [0.0550]	0.140** [0.0497]
Yes (n=572)	0.302*** [0.0646]	0.159** [0.0487]	0.231** [0.0733]	0.223*** [0.0547]

Note: Standard errors are in brackets \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table A1.2: Likelihood of choosing Job A (with standard EPF coverage features and earnings equal to respondents' current income), weighted estimates

	No retirement savings fund or pension		Monthly pension upon retirement based on contribution	
	5% more income	10% more income	5% less income	10% less income
All respondents (n=1,038)	0.730*** [0.0465]	0.783*** [0.0367]	0.644*** [0.0465]	0.596*** [0.0519]
<u>Gender</u>				
Male (n=568)	0.726*** [0.0587]	0.749*** [0.0507]	0.616*** [0.0609]	0.613*** [0.0639]
Female (n=470)	0.737*** [0.0760]	0.854*** [0.0359]	0.688*** [0.0718]	0.552*** [0.0860]
<u>Age</u>				
Less than 30 years (n=339)	0.739*** [0.0789]	0.806*** [0.0524]	0.724*** [0.0710]	0.656*** [0.0720]
30-39 years (n=367)	0.778*** [0.0586]	0.733*** [0.0584]	0.646*** [0.0696]	0.673*** [0.0818]
40 years or older (n=332)	0.698*** [0.0794]	0.826*** [0.0640]	0.588*** [0.0892]	0.538*** [0.0824]
<u>Occupational skill level in main job</u>				
High-skilled (n=565)	0.704*** [0.0751]	0.830*** [0.0402]	0.604*** [0.0574]	0.525*** [0.0771]
Mid- or low-skilled (n=370)	0.784*** [0.0606]	0.738*** [0.0596]	0.652*** [0.0755]	0.651*** [0.0752]
<u>Income</u>				
Low income (n=343)	0.772*** [0.0734]	0.839*** [0.0522]	0.626*** [0.0759]	0.596*** [0.0938]
Medium income (n=347)	0.738*** [0.0787]	0.809*** [0.0594]	0.655*** [0.0866]	0.557*** [0.0918]
High income (n=348)	0.692*** [0.0820]	0.704*** [0.0739]	0.648*** [0.0763]	0.638*** [0.0804]
<u>Retirement savings</u>				
No savings (n=762)	0.738*** [0.0539]	0.758*** [0.0452]	0.646*** [0.0534]	0.577*** [0.0609]
EPF savings (n=276)	0.714*** [0.0896]	0.833*** [0.0632]	0.641*** [0.0892]	0.643*** [0.0991]
<u>Private retirement savings</u>				
No savings (n=577)	0.721*** [0.0601]	0.749*** [0.0548]	0.627*** [0.0618]	0.580*** [0.0669]
Yes (n=461)	0.747*** [0.0720]	0.822*** [0.0471]	0.668*** [0.0706]	0.627*** [0.0800]
<u>Employers prior to current job</u>				
None (n=337)	0.653*** [0.0891]	0.752*** [0.0665]	0.674*** [0.0763]	0.683*** [0.0802]
1 or more (n=701)	0.770*** [0.0528]	0.805*** [0.0417]	0.623*** [0.0577]	0.563*** [0.0642]
<u>Other jobs currently?</u>				
No (n=466)	0.722*** [0.0654]	0.801*** [0.0538]	0.644*** [0.0621]	0.641*** [0.0706]
Yes (n=572)	0.739*** [0.0663]	0.767*** [0.0501]	0.644*** [0.0695]	0.538*** [0.0745]

Note: Standard errors are in brackets \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table A1.3: Likelihood of choosing Job A (without workplace injury insurance coverage and earnings equal to respondents' current income), weighted estimates

	Full insurance cover for injuries during work	
	5% less income	10% less income
All respondents (n=528)	0.312*** [0.0455]	0.362*** [0.0485]
<u>Gender</u>		
Male (n=291)	0.296*** [0.0565]	0.382*** [0.0599]
Female (n=237)	0.345*** [0.0755]	0.327*** [0.0833]
<u>Age</u>		
Less than 30 years (n=175)	0.386*** [0.0758]	0.293*** [0.0747]
30-39 years (n=187)	0.309*** [0.0702]	0.359*** [0.0693]
40 years or older (n=166)	0.275*** [0.0789]	0.397*** [0.0874]
<u>Occupational skill level in main job</u>		
High-skilled (n=286)	0.333*** [0.0757]	0.365*** [0.0718]
Mid- or low-skilled (n=184)	0.293*** [0.0594]	0.382*** [0.0775]
<u>Income</u>		
Low income (n=170)	0.410*** [0.0902]	0.268*** [0.0776]
Medium income (n=184)	0.159*** [0.0466]	0.447*** [0.0834]
High income (n=174)	0.407*** [0.0838]	0.354*** [0.0823]
<u>Retirement savings</u>		
No savings (n=388)	0.242*** [0.0494]	0.310*** [0.0550]
EPF savings (n=140)	0.448*** [0.0890]	0.489*** [0.0907]
<u>Private health insurance</u>		
No (n=282)	0.249*** [0.0535]	0.312*** [0.0668]
Yes (n=246)	0.412*** [0.0765]	0.424*** [0.0699]
<u>SOCSO coverage</u>		
No (n=376)	0.266*** [0.0582]	0.331*** [0.0573]
Yes (n=152)	0.363*** [0.0717]	0.418*** [0.0870]

Note: Standard errors are in brackets \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

## Annex 2. Robustness test: Regressions results including controls for variables that random assignment was not balanced on

### 1. Unemployment Insurance

Controls include: dummies for Indian ethnicity, High Income category

Table A2.1: Likelihood of Choosing Job A with alternate unemployment insurance coverage offers/ earnings, total and by Gender, Age Group

(Dep Var = 1 if Job A preferred to Job B, else 0. Job A has no unemployment insurance and earnings equal to respondents' current income)

UI Coverage, Earnings features in Job B	Gender		Age			All respondents
	Male	Female	Age < 30	Age 30 - 39	Age >= 40	
Payment of RM 800 per month for 6 months, 0.5% lower income	0.242*** [0.0378]	0.176*** [0.0407]	0.206*** [0.0443]	0.220*** [0.0540]	0.220*** [0.0540]	0.211*** [0.0276]
Payment of RM 800 per month for 6 months, 0.2% lower income	0.188*** [0.0356]	0.187*** [0.0369]	0.149*** [0.0368]	0.211*** [0.0510]	0.211*** [0.0510]	0.186*** [0.0255]
Payment of RM 1,200 per month for 6 months, 0.5% lower income	0.205*** [0.0372]	0.119*** [0.0328]	0.164*** [0.0427]	0.230*** [0.0536]	0.230*** [0.0536]	0.164*** [0.0251]
Payment of RM 1,200 per month for 6 months, 0.2% lower income	0.230*** [0.0387]	0.152*** [0.0369]	0.247*** [0.0475]	0.191*** [0.0503]	0.191*** [0.0503]	0.192*** [0.0267]
<i>N</i>	568	470	344	332	332	1,038

Standard errors in brackets

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table A2.2. Likelihood of Choosing Job A with alternate unemployment insurance coverage offers/ earnings, total and by Current and Previous Employment Status

	Employers prior to current job		Other Jobs Currently?	
	None	1 or More	No	Yes
Payment of RM 800 per month for 6 months, 0.5% lower income	0.262*** [0.0481]	0.148*** [0.0348]	0.179*** [0.0397]	0.241*** [0.0386]
Payment of RM 800 per month for 6 months, 0.2% lower income	0.169*** [0.0417]	0.157*** [0.0338]	0.203*** [0.0410]	0.175*** [0.0326]
Payment of RM 1200 per month for 6 months, 0.5% lower income	0.230*** [0.0469]	0.0933*** [0.0281]	0.155*** [0.0365]	0.173*** [0.0349]
Payment of RM 1200 per month for 6 months, 0.2% lower income	0.278*** [0.0496]	0.112*** [0.0300]	0.147*** [0.0349]	0.230*** [0.0389]

N	337	701	466	572
---	-----	-----	-----	-----

Table A2.3. Likelihood of Choosing Job A with alternate unemployment insurance coverage offers/ earnings, by Access to Retirement Savings Income

	EPF Coverage		Pvt. Retirement Savings	
	No	Yes	No	Yes
Payment of RM 800 per month for 6 months, 0.5% lower income	0.184*** (0.0305)	0.280*** (0.0616)	0.231*** (0.0374)	0.183*** (0.0411)
Payment of RM 800 per month for 6 months, 0.2% lower income	0.140*** (0.0275)	0.267*** (0.0538)	0.173*** (0.0337)	0.195*** (0.0387)
Payment of RM 1200 per month for 6 months, 0.5% lower income	0.0917*** (0.0241)	0.339*** (0.0611)	0.131*** (0.0299)	0.205*** (0.0418)
Payment of RM 1200 per month for 6 months, 0.2% lower income	0.138*** (0.0279)	0.321*** (0.0614)	0.164*** (0.0312)	0.244*** (0.0480)
N	762	276	577	461

## 2. Retirement Savings

Sample is balanced across treatment arms; no controls needed

## 3. Workplace Injury Insurance

Controls include: dummy for having children, marital status, time preference index

Table A2.4: Likelihood of Choosing Job A given work-related injuries insurance and alternate deductions from earnings, total and by Gender, Age Group

(Dep Var = 1 if Job A preferred to Job B, else 0. Job A has no workplace injury insurance coverage and offers earnings equal to respondents' current income)

	Gender		Age			Total
	Male	Female	Age < 30	Age 30 - 39	Age >= 40	
Full insurance cover for injuries during work, 0.5% lower income	0.290*** [0.0754]	0.408*** [0.0840]	0.505*** [0.111]	0.294** [0.104]	0.313** [0.0954]	0.290*** [0.0754]
Full insurance cover for injuries during work, 1% lower income	0.288*** [0.0760]	0.374*** [0.0895]	0.441*** [0.120]	0.305** [0.107]	0.326*** [0.0919]	0.288*** [0.0760]
N	291	237	177	185	166	528

Standard errors in brackets

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table A2.5. Likelihood of Choosing Job A with alternate earnings scenarios for job B with workplace injuries insurance, by current access to EPF, private health insurance and SOCSO coverage

	EPF Coverage		Private Health Insurance		SOCSO Coverage	
	No	Yes	No	Yes	No	Yes
Full insurance cover for injuries during work, 0.5% lower income	0.361*** [0.0650]	0.361*** [0.106]	0.310*** [0.0766]	0.403*** [0.0844]	0.352*** [0.0671]	0.320** [0.102]
Full insurance cover for injuries during work, 1% lower income	0.363*** [0.0677]	0.294** [0.106]	0.289*** [0.0815]	0.380*** [0.0839]	0.365*** [0.0694]	0.234* [0.108]
N	388	140	282	246	376	152

Standard errors in brackets

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$