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Factors Affecting Food Delivery Riders' Intention to Participate in the Gig Economy

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ABSTRACT

Since COVID-19 became a global pandemic, there has been a rise in the number people joining the food delivery platforms (FDPs). Although this form of gig work is gaining its pace, food delivery riders (FDRs) are seen to be falling behind in terms of rules and legislations designed to safeguard their employment. To understand the spread of these unstable forms of employment, it is essential to comprehend the factors that keep FDRs in it. This quantitative study employed PPM to determine the relationship between push, pull, and mooring factors and FDRs' intention to participate in the gig economy; and to test whether these factors prevent or lead to their participative behaviour. The SPSS 26.0 and Smart PLS 3.30 programmes were used to analyse the survey data from 393 respondents. Economic necessities, extra income, flexibility, and control and autonomy, encourage FDRs' gig economy participation, whereas limited alternatives and enjoyment minimise it. It is also evident that FDRs will have lower participation due to the lack of employment protection that also moderates the relationship between economic necessities and their participation in the gig economy. This research provides widespread implications for both theory and practise.

Keywords: *food delivery riders, food delivery platforms, gig economy, precarious employment, labour laws*

INTRODUCTION

'Gig economy' refers to a segment of the labour market where independent firms and contractors utilise internet marketplaces to hire temporary workers and pay them by the project or hour (Roy & Shrivastava, 2020). In the gig economy, customers hire independent freelancers (or 'giggers') via internet platform companies. The advent of this technological breakthrough has allowed companies and customers to have access to inexpensive, on-demand labour, but the experiences of gig workers have been more nuanced. They have access to employment that is very adaptable and may even be entirely independent, but they must also overcome obstacles stemming from the insecurity of the job and their interactions with platform companies (Bajwa *et al.*, 2018). Gig worker refers to a self-employed person who works on many short-term projects or contracts for a variety of different companies. In the field of managing, one's online reputation, some people may find gig work via the use of a website or mobile application, while others may depend more heavily on personal recommendations (Mukhopadhyay & Chatwin, 2020). The Department of Statistics Malaysia (DOSM) defines the gig economy as 'work that is short-term, project-based, and outcome-defined, work that is obtained through an online platform with work doled out in bits and pieces' (Abraham *et al*., 2018). 'Crowd work' which involves doing tasks online, and 'work-on-demand through applications' are also part of the gig economy (De Stefano, 2018).

As of the year 2018, 3,043,300 Malaysians were doing part-time jobs in the private sector or on their own accounts. 559,900 employees were classified as independent contractors (18.4 percent). It was estimated that there were 302.1 thousand male gig workers, making up 54 percent of the total, while there were 257.7 thousand female gig workers (46 percent). Despite being controlled by males, women are overrepresented in the gig economy (38.9 percent) (Ahmad, 2020). The service sector, which accounts for most economic activity, has the most gig workers. Most gig workers work in wholesale, retail, transportation, and storage. These sectors account for 36.8 percent and 16.2 percent of the entire workforce, respectively (Ramli *et al*., 2018). Over 160,000 people in Malaysia are currently working as drivers for e-hailing services. It is currently predicted that there would be between 50,000 and 60,000 Grab and Uber drivers, although there are just 37,000 taxi drivers in the area in less than five years since the start of these

services (Suhaimi *et al.*, 2018). Furthermore, the growth of digital mediums has enabled independent work to be disseminated abroad. According to statistics collected from six of the most prominent English-language labour platforms in the world, the global labour platform economy expanded by more than 26 percent between July 2015 and June 2016, as measured by the number of tasks and projects that were successfully completed.

The topic of employees' involvement in the gig economy has been the subject of several research, with many of these studies examining the aspects that have been demonstrated to have either a positive or negative influence on workers' participation; locus of control, need for achievement, egoistic passion, desire for independence, drive, self-efficacy, risk-taking propensity, and tolerance for ambiguity. For example Karlsson and Wranne (2019), examine intrinsic motivation, competence needs, relatedness needs, and autonomy needs (Jabagi *et al*., 2019), assignment or sales, autonomy, payment by task, and short-term relationship between the worker and the customer (Manyika *et al*., 2016), extra charges, delivery delays and unclear distribution of responsibility (Asih *et al.*, 2019), financial insecurities, isolation, stress, and uncertainties due to short-term schedules. There is a paucity of studies that empirically examine the lack of employment protection as a predictor of employees' engagement in the gig economy in time of COVID-19 pandemic. The notion of Push-Pull-Mooring (PPM), is often employed to ascertain people's propensity to transfer jobs, has also been underutilised in the context of the gig economy. Furthermore, this study found that no studies have been conducted to yet in Malaysia to evaluate variables affecting the intention of FDRs to join in the gig economy. Therefore, the purpose of this research is to fill the gap by identifying the elements that either attract or discourage people from participating in the gig economy. The findings will contribute to the existing literature by providing the relevant stakeholders with the recommendations for the development of better policies, rules, and regulations regarding the administration of FDRs employment in Malaysia.

LITERATURE REVIEW

Intention to Participate in the Gig Economy

The term 'attitude toward behaviour' refers to how positively or negatively one feels about engaging in a certain behaviour, whereas the term 'social norm' describes the degree to which one feels social pressure to engage in a particular behaviour from significant others like family and friends (Liñán & Chen, 2009). In addition, Mamman *et al.* (2016) noted that the complexity of an individual's desire to attempt and how much the purpose was intended to conduct a behaviour is characterised as the activity's aim. The notion of planned conduct, as articulated by Brayley *et al.* (2015), states that the purpose or readiness to participate in the activity is a precursor to action. In addition, Ajzen (2011) argues that one might gauge one's preparedness to do an action by one's intention or desire to show the activity. During the decision-making process, Zhang (2018) listed three factors attitude, subjective norms, and behaviour control that might affect an individual's conduct intentions. One of the things that motivates people to act is their purpose to behave in a certain way (Ajzen, 2012). Some of the oldest research on behaviour intention comes from Fishbein and Ajzen (1977), who state that the concept of behaviour intention was first introduced in the field of psychology. According to Yeo *et al.* (2017), a person's attitude might reveal their willingness to perform. An individual's behaviours are decided by his or her behaviour criteria, and a positive attitude leads to behaviour that result in product or technology adoption. In this research, gig economy participation will be used as a dependent variable.

Push Factors and Intention to Participate in the Gig Economy

Push factors explores into certain unfavourable aspects of life that induce people to leave their homes (Moon, 1995). These elements, often known as stresses, are those that cause individuals to stop using the goods or services that are already available (Kang *et al.*, 2021). In this study, push factors can be defined as the reason that forces FDRs into the gig economy. Push factors describe the unfavourable features of the FDRs. FDRs are encouraged to keep working in the gig economy by these unfavourable characteristics. Push factors, which serve as independent variable in this

study, will include economic necessities, limited alternatives, and extra income.

Economic Necessities

Previous research distinguished between those forced into temporary labour by economic conditions and those unable to obtain permanent job (Feldman, 1990). Korábová (2019) discovered that consumers joined the e-hailing service Uber because of their need for money. The findings reveal that a larger proportion of respondents reported a favourable impact on their plans to participate in the sharing economy. It is claimed that collaborative consumption has already altered the competitive landscape in a number of sectors and industries and promoted the entry of new competitors. Due to its economic advantages (cost-savings), the sharing economy has drawn the attention of many (Henten & Windekilde, 2016). Individuals may have different experiences with gig workers depending on their financial circumstances. Some people may use their gig economy employment as their main source of income, while others may only use it to pass the time between their permanent jobs or other side gigs (Kalleberg & Dunn, 2016). Also, the duration of work seems to influence the amount of salary that gig workers gain (Ashford *et al.*, 2018). As most workers have experienced a reduced income during the COVID-19 pandemic due to various industrial relation exercises (e.g., Layoff, and termination), this study proposes the following hypothesis:

H1a: Economic necessities are positively related to FDRs' intention to participate in the gig economy.

Limited Alternatives

Since the beginning of the pandemic, there has been a significant shift in the working world. The risk of a pandemic has resulted in a dramatic alteration of people's working life, including a rise in the incidence of unemployment, sudden shifts in working hours, and the need that people work from home whenever it is feasible (Lafferty *et al.*, 2022). MacDonald and Giazitzoglu (2019) suggested that the 'gig economy' and other modern labour market features (such as the 'low-pay, no-pay' cycle, self-employment, and 'zero-hours contracts') that young people confront seem to be characterised by a lack of choice. Keith *et al.* (2019) found that workers using Mechanical Turk (MTurk) as their primary source of income

due to them being unemployed. The gig workers can be considered to have limited labour rights such as protection for discrimination, safety, and health purposes (Christie & Ward, 2019). Sevilla (2020) found that working in online transport platforms often means that workers do not have to have a higher education degree and diverse working experiences. The results showed that one of their reasons for joining the gig economy is because of their lack of options in choosing a job. It ranges from limited skills, education, to working experiences. For several participants, these limitations pushed them into working into this industry, which only requires their driver and transport license. Based on these findings, this study proposes the following hypothesis:

H1b: Limited alternatives are positively related to FDRs' intention to participate in the gig economy.

Extra Income

In a study conducted by Moussawi and Koufaris (2015) it was found that money was cited as the primary motivation for participating in crowdsourcing platforms by the respondents. Moreover, employees said that the money they brought in either was a complement to their main source of revenue or was used as their main source of funding altogether. Some gig workers made their living exclusively via one of these sites for a number of years, while others have supplemented their income with the odd gig (Smith, 2016). According to Barany *et al.* (2020), being a Grab partner has enhanced their reputation in the eyes of lenders, making it simpler for them to get loans. This study also found that majority of the respondents claiming joining Grab increased their credibility with lenders. The biggest motivator for gig labour, according to Churchill and Craig (2019), is money. According to Berg *et al.* (2018), a third of employees on digital platforms said that gig work was their primary source of income while the other half said that they undertook this work to supplement the money from other occupations. Diogo and Branco (2019) discovered that Grab drivers were interested in the position since it let them earn more money because they were paid daily, and because it did not put them under excessive stress. Based on those findings, this study proposes the following hypothesis. Based on these differences of findings, this study proposes the following hypothesis.

H1c: Extra incomes are positively related to FDRs' intention to participate in the gig economy.

Pull Factors and Intention to Participate in the Gig Economy

Pull factors are frequently used to describe appealing aspects of a place to visit. The benefits that a location provides to individuals are known as push factors and are sometimes referred to as attractors. This might involve better career prospects, higher income or educational levels, more favourable surroundings, or chances to engage in novel activities (Bansal *et al.*, 2005). Pull forces entice someone to take up a new position (Gussek & Wiesche, 2022). The pull factors, which serves as an independent variable in this study can be defined as the reason that attracts FDRs to participate in the gig economy. The push factors include flexibility, control and autonomy, and enjoyment.

Flexibility

The systems that support the gig economy seem to provide employees an incredible amount of temporal flexibility, allowing them to have complete discretion over how they spend each hour and minute of the day (Lehdonvirta, 2018). From the point of view of employees, flexibility refers to their capacity to define and regulate their working hours, as well as their location of employment, their speed of work, and their work schedules - all of which are essential components of the quality of their jobs (Kalleberg, 2011). Wood *et al.* (2019) argued while emerging research on the gig economy has pointed out that such flexibility remains a fantasy for most employees, the facts remain that workers experience some of the benefits associated with flexible working arrangements hence pull them into the gig economy. According to Chen *et al.* (2019), one of Uber's appeals is the flexibility provided to drivers. Drivers have the option of providing relatively few hours per week, as well as flexible scheduling of these hours throughout the week. The capacity of an Uber driver to adjust on an hourly basis to variations in demands on her time is another significant source of flexibility. According to Ashkrof *et al.* (2020), the main incentive for drivers to join the system was their appreciation for the freedom to select a working schedule and location. Based on these various arguments, this study proposes the following hypothesis:

H2a: Flexibility is positively correlated with FDRs' intention to participate in the gig economy.

Control and Autonomy

According to Ashkrof *et al.* (2020), drivers for ride-sharing services are also fleet owners in addition to being chauffeurs. During the course of their employment, ride-sourcing drivers must make various key decisions, including whether to take a trip, their relocation plans, their working shift, and their geographic location. According to Wood *et al.* (2019), the majority of workers also had to put in long, unpredictable hours despite appreciating the chance to choose their own schedules in order to fulfil client demands. Every person in the gig economy has access to several sorts of control. The types of control are explained by Kalleberg and Dunn (2016), which first, autonomy is a form of the workers' control over what they do on their job, second, scheduling in a way that the workers manage their priorities and timing to find a work-life balance, and how long the workers can keep their jobs. In this section, the framework will focus on the workers' capabilities in controlling their work in order to assess how they experience such control in the gig jobs. MacDonald and Giazitzoglu (2019) found gig workers enjoy the autonomy that they experience during their work on the online transport platforms, a significant number of findings however shows that they experience many concerns regarding their low income. Based on these arguments, this study proposes the following hypothesis:

H2b: Control and autonomy are positively correlated with FDRs' intention to participate in the gig economy.

Enjoyment

Lee *et al.* (2018) found the degree to which users believe they will profit from participating in the sharing economy (in terms of both enjoyment and financial gain) is the factor that has the most impact on their decision to do so. Therefore, in order to promote user engagement in the sharing economy, businesses have to concentrate on conveying the idea that doing so would result in good economic return and a pleasurable experience. In addition, businesses should come up with reasonable pricing plans for the services related to the sharing economy that they provide. According to Smith *et al.* (2014), enjoyment is a positive affective state that happens when a person participates in an event or activity that meets a need or want, including but not limited to the need for love, esteem, belongingness, security, or pleasure. The level of perceived enjoyment associated with engaging in the sharing economy, independent of any potential performance implications, is

referred to as enjoyment (Marquis *et al.*, 2018). The sharing economy has been widely viewed as having significant inherent benefits, and enjoyment is one among them (Oliveira *et al*., 2022). According to Ostztovits (2021), 63 percent of respondents said that interacting with traditional businesses was less enjoyable than doing so in the sharing economy. According to McArthur (2015), people are drawn to participate in lodging sharing (such as Airbnb) because it gives them a feeling of novelty and real experience. Based on these arguments, this study proposes the following hypothesis:

H2c: Enjoyment is positively correlated with FDRs' intention to continue participating in the gig economy.

Mooring Factor and Intention to Participate in the Gig Economy

Mooring considerations, also known as intervention barriers, are associated with components that encourage human migration. These characteristics are supplementary components to the push-pull effect of PPM and are connected to individual circumstances, mental factors, values, standards of life, and societal effects (Kim *et al.*, 2019). In the absence of a proactive governmental strategy to regulate and support the expansion of paid employment, Rachmawati *et al.* (2022) observed that online ojek riders faced significant obstacles from new types of non-employee labour. In order to evaluate the associated antecedents that may influence FDRs' desire to continue working in the gig economy, this study used a variety of characteristics on precarious employment settings from previous studies.

Lack of Employment Protection

Desperation among freelancers stems from their well-known vulnerability and is exacerbated by the confluence of factors altering their employment landscape. Freelancers working online are inclined to give in to market pressure and keep bidding for additional work, even when doing so is counterproductive because of the growing quantity of available work and the resulting decrease in pay. According to Horney (2016), the emergence of the gig economy and online talent portals has given a new definition to employment, employees, and employers that do not fall under the purview of existing labour laws, posing a significant problem and necessitating

the development of new labour models. Gig employment has detrimental effects on gender equality since it does not offer paid parental or maternity breaks or time off for caregivers (Altenried, 2021). Employment law faces its biggest difficulty, coping with a vastly different reality than when it was created. This article explains why employees need protection. Even when the state provides for it, taking time off can be dangerous since platforms for absence can deactivate or remove employees, and access to positions rely on reputation, with excellent reviews being crucial for recently completed tasks (Goods *et al.*, 2019). According to Popan and Anaya-Boig (2021), self-employed contractors who receive minimal social security are hired by food delivery start-ups like Deliveroo, Uber Eats, or Glovo. This study assumes that the lack of employment protection would not encourage FDRs' participation in the gig economy. Therefore, this study proposes the following hypothesis:

H3: The lower the lack of employment protection between the FDRs and the FDPs, the lower the FDRs' intention to participate in the gig economy.

Lack of Employment Protection as a Moderator

As highlighted earlier, this research is giving emphasis on the precarious work setting in relation to FDRs' intention to participate in the gig economy. The recent Malaysia High Court ruling dated July 9th 2021 that determined the claimant, an e-hailing Grab driver, was not an employee is regarded as being of great significance and could have an impact on FDRs' decision to continue participating in the gig economy (Cheah, 2021). This study predicted that, during the COVID-19 pandemic, the lack of employment protection would moderate the relationship between push and pull factors with FDRs' intention to continue participating in the gig economy. Based on these arguments, this study argues that the lack of employment protection has positive moderating effect on the push and pull factors; hence, the following hypothesis is suggested:

H4a: The lack of employment protection will moderate the relationship between the economic necessities with FDRs' intention to participate in the gig economy.

H4b: The lack of employment protection will moderate the relationship between the limited alternatives with FDRs' intention to participate in the gig economy.

H4c: The lack of employment protection will moderate the relationship between the extra incomes with FDRs' intention to participate in the gig economy.

H4d: The lack of employment protection will moderate the relationship between the flexibility with FDRs' intention to participate in the gig economy.

H4e: The lack of employment protection will moderate the relationship between the control and autonomy with FDRs' switching intention to participate in the gig economy.

H4f: The lack of employment protection will moderate the relationship between the enjoyments with FDRs' intention to participate in the gig economy.

Push Pull Mooring Theory

This research will use PPM to analyse FDRs' gig economy participation. PPM explains human migration (Hou *et al.*, 2014). The PPM idea comes from human migration studies (Lee, 1966), which investigate push and pull factors from origin to destination (Chang *et al*., 2014). Moon (1995) added mooring aspects to the pull-push concept. In migration theory, mooring factors restrict or assist movement. Loss of job, natural catastrophe, bad working conditions, minimal fringe benefits, and limited promotion opportunities are push factors. PPM theory has been used in many domains. Xu *et al.*(2021) studied online learning platform user switching. Lin *et al.* (2021) studied telelearning's switching intention during the COVID-19 outbreak, Guo *et al.* (2021) studied Chinese customers' switching intention of smartphone manufacturers, and Chang *et al.* (2014) studied the push, pull, and mooring effects in virtual migration for social networking sites. This is completely consistent with the challenges faced by most FDRs who were engaged by the FDPs. FDPs need to solve the challenge of encouraging FDRs to continue taking part in the gig economy. Hence, drawing from the findings of the earlier research, in particular studies made by Angelucci (2020), Keith *et al.* (2019); Sevilla (2020); Paul (2018); and Karlsson and Wranne (2019), as well as the connection between theory and practices made by past studies, this study used the PPM theory as a guide to conduct an investigation into the elements that affect FDRs' intention to participate in the gig economy.

Research Model

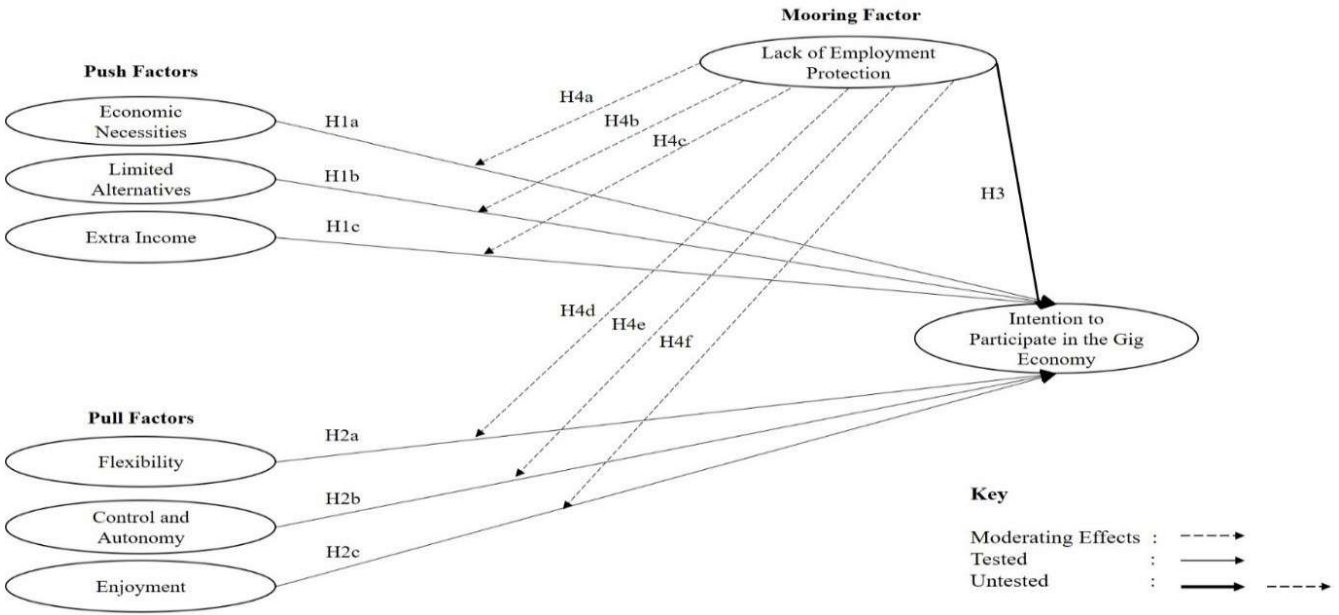

Figure 1: Research Model

This research applied PPM theory to identify factors that affect FDRs' intention to participate in the gig economy. Secondly, this study tested whether the PPM variables prevented or supported those intentions by placing particular emphasis on the lack of employment protection (mooring factor). The research model is shown in Figure 1. This study identified seven factors that are hypothesized to directly affect the FDRs' intention to participate in the gig economy.

RESEARCH METHODOLOGY

Research Design

An experimental research design has been used in this quantitative study as it assists in determining the causal relationships between variables. This design assists the researcher by systematically creating a set of procedures to test the proposed hypothesis. The independent variable in experimental research is subjected to intervention, or the active modification of the variable. It is necessary to choose a sample of the population at random, and participants are divided into distinct groups using this method. The participants, the dependent variable, are subjected to an intervention, and the results of this process are documented. If the study finds that the intervention does have an impact on the population in question, then the researcher will examine the changes that have been brought about by the intercession in order to establish how and why those effects came about. The goal of such an investigation is to determine the influence of some external component or independent variable on some other element of interest. According to Kabir (2016), research conducted with the explicit goal of disproving an existing theory is known as hypothesis-testing research. It might be either experimental or non-experimental in nature.

Questionnaire Development and Measurement

In this study, a multi-dimensional, multi-item scale was created. Thirteen dimensions were identified after literature research. The survey's objective was described in the cover letter, along with the confidentiality and anonymity of the responders. A quick explanation on how to answer was also supplied. The questionnaire featured close-ended questions in each

of its five sections. On a five-point Likert scale that ranges from 1-strongly disagree to 5-strongly agree, respondents were asked to indicate how much they agreed with the various statements. Measurement items for constructs were adapted whenever possible from earlier, verified studies. To make sure the items are relevant to this specific study environment, the wordings of the items have undergone rigorous revision. This study modified questions from Sevilla (2020), Bajwa *et al.* (2018), and Graham *et al.*(2017) to better reflect the economic necessities' variables. The same method was used for limited alternatives variables of the said study. The other items for extra income, flexibility, control and autonomy, and enjoyment, were modified from studies executed by Keith *et al.* (2020) and Keith *et al.* (2019). While precarious work setting item was modified from the past studies made by Paul (2018), Rachmawati *et al.* (2022), and Sargeant (2017).

Questionnaire Pre-test

To ascertain the questionnaire is valid and reliable, focus group pretesting method was conducted with 30 FDRs that have been selected randomly. The respondents were identified based on their active communication via FDR's Facebook group especially those selling preloved items such as food delivery gears (indicating a shift in FDPs). They were then contacted directly via Facebook private messages and later communicated via WhatsApp application. The two-week pre-test was finished in October 2021. Based on the pretesting, the terminology of the questionnaire was adjusted to reflect the actual delivery methods utilised by the FDRs' participants based on the findings of the pre-test and interviews. A Malay set of questionnaires has been drafted to suit the FDRs' language barrier. A certified proofreader has been engaged to translate the Malay drafted questionnaire before disseminating them to the FDRs. Emphasis has been given on the ethical considerations in accordance to recommendations made by Bryman and Bell (2007).

Sampling Frame

This study used the purposive sampling method after taking into consideration the aims and goals of the research project, different categories of people are likely to possess unique and significant points of view with regard to the concepts and issues at hand, and as a result, they need to be

included in the sample (Robinson, 2014). According to Palinkas *et al.* (2015), the discovery and selection of examples through purposeful sampling is an approach that makes optimal use of the limited research resources that are available. It is 'used to choose responders who are most likely to offer appropriate and helpful information'. Although various platform contains 'super apps' that allow users to have a range of order delivery options via the app, such as parcel delivery, this study has focused solely on FDRs in accordance with the study's scope. Out of 20 FDPs currently operating in Malaysia (Sia, 2022), five FDPs in Klang Valley has been selected with an estimate 150,000 FDRs.

Data Collection

The survey has been conducted online. A permission has been sought and obtained from several administrators managing FDRs' Facebook for various FDPs operating in Klang Valley to communicate with the FDRs. The questionnaire took an average of 15 minutes to complete. The research's objective was described in the cover letter, which also guaranteed the respondents' anonymity and confidentiality. Potential participants had 10 days to complete and submit the questionnaires for this study. Participants have to consent to providing their informed consent before moving on to the survey questions. Respondents were informed in the questionnaire that taking part in the study was optional. The data was gathered from October 2021 to February 2022. The researchers got 403 surveys from a projected 384 sample size (Raosoft, 2014), with an error margin set at five percent and a confidence range of 95 percent. Ten questions were removed because they did not fulfil the requirements for a minimum of survey completion. A response rate of 92.31 percent was obtained from the 393 questionnaires.

Data Analysis

SPSS 26.0 and SmartPLS 3.30 were used to conduct the analysis. The programme performs statistical analysis on a sizable sample and use structural equation modelling (SEM) to estimate measurement indicators and latent variables in the model. A mathematical model called PLS-SEM provides an objective representation appropriate for processing models in several stages. It is frequently used to assess the relationship between observable and latent variables in the fields of behavioural and social

sciences. Since SmartPLS version 3.30 (Ringle *et al.*, 2015) suits the researchers' prediction-oriented purpose, the researchers used it to analyse the data. Additionally, the model featured a substantial number of latent variables, and the data were not regularly distributed.

RESULTS

Assessment of Reflective Measurement Model

In accordance with the validation guidelines provided by Straub *et al.* (2004) the reflective measurement model needs to undergo at least the following tests in order to be considered fit for use: the unidimensionality procedure, the internal consistency reliability, the indicator reliability, the convergent validity, and the discriminant validity. The goal of unidimensionality is to get rid of the thing that have a less proportional impact on these parameters. To be more specific, the process for removing items consisted of two distinct types: the multidimensionality technique and the unidimensionality approach. Despite the fact that both procedures seem to be quite different while they are being used to carry out the study, they both perform the same essential function in preserving the items that are associated to the factor. In most cases, researchers choose value above quantity (Afthanorhan, 2013).

Demographic Profile of Respondents

This study included the information of FDRs as control variables. The variables include FDRs' age, qualifications, current attachment, years of work, and delivery vehicle used for delivery as shown in Table 1. These control variables were commonly used by scholars (Liang, 2019).

Table 1: Descriptive Statistics of the FDRs' Basic Information

Category	Items	Sample Size	(%)
Age	18-20	41	10.4
	21-30	225	57.0
	31-40	90	22.9
	41-50	37	9.4
	51-60	1	0.3
Qualification	SRP/PMR	5	1.3
	SPM	67	17.0
	STPM/Diploma or equivalent	168	42.6
	Bachelor Degree or equivalent	144	36.5
	Masters/PhD Degree or equivalent	5	1.3
	Others	5	1.3
FDP	Grabfood	152	38.6
	FoodPanda	134	34.0
	BungkusIt	48	12.2
	HomeTaste	27	6.8
	DahMakan	18	4.6
	Others	15	3.8
Years of work	Less than 1 year	269	68.3
	1 to less than 3 years	112	28.4
	3 to less than 6 years	12	3.0
	6 years or more	1	0.3
Delivery Vehicle	Bicycle	1	0.3
	Scooter	6	1.5
	Motorcycle	372	94.4
	Car	15	3.8

Measurement Model Analysis

Examining the measurement model includes convergent and discriminant validity. Loadings, AVE, and composite reliability are needed to establish if convergent analysis was successful (Gholami *et al.*, 2013). Table 2 shows the measuring model.

Table 2: Measurement Model

Latent Construct	Items	Factor Loadings	Average Variance Extracted	Composite Reliability	Cronbach's Alpha
Control and autonomy	CA	0.688	0.624	0.827	0.763
Enjoyment	E	0.594	0.520	0.812	0.760
Extra income	EI	0.728	0.573	0.841	0.777
Economic necessities	EN	0.714	0.601	0.857	0.779
Flexibility	F	0.797	0.601	0.856	0.776
Intention to participate	ITP	0.692	0.906	0.949	0.767
Limited alternatives	LA	0.668	0.572	0.842	0.761
Lack of employment protection	LEP	0.768	0.709	0.924	0.761

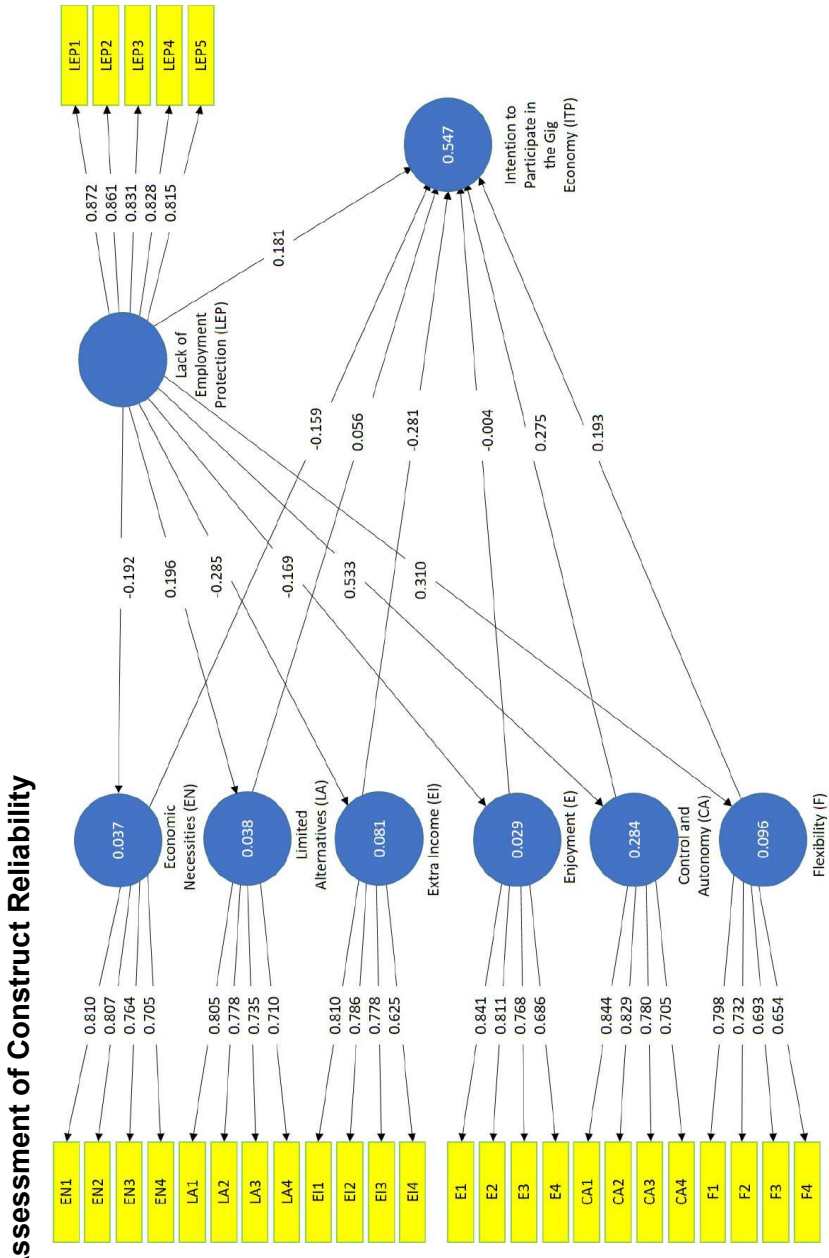

Figure 2: Measurement Model with PLS Algorithm

All item loadings above 0.5 indicate indicator reliability (Hulland, 1999). This study tested the scale items' convergent validity using three criteria. First, as recommended by (Hair Jr *et al.*, 2017). Each construct's composite reliability should surpass 0.70. Each construct's AVE should be >0.50 (Fornell & Larcker, 1981). AVE is the squared indicator loadings divided by the number of indicators. All constructs in this analysis had convergent factor loadings. All loadings were over 0.50, most over 0.60. High factor loadings indicate convergent validity. As all AVE are above 0.50, the model has converged. All constructions' composite reliability and Cronbach's coefficient were over 0.70, ensuring the scale's internal consistency. The structural model was accurate because both R-square and the path coefficient were over 0.43 and 0.65. Figure 2 summarises the measurement model using SEM with eight variables (refer Table 4).

Assessment of Convergent Validity

Convergent Validities produced from AVE observations are the first aspect of the measurement models to be observed. The AVE should be greater than 0.50 (AVE > 0.50) (Fornell & Larcker, 1981). AVE is the average positive association between a set of variables and their related construct or latent variables (LV). This is calculated by dividing the full amount of data (all variables) by the number of constructions or LV. Every AVE was over 0.5, proving convergent dependability (Bagozzi & Yi, 1988). Internal consistency is demonstrated when the composite reliability (CR) is greater than 0.70. (Gefen *et al*., 2000). When Cronbach's alpha is larger than 0.7, the indication is dependable (Nunnally, 1978). When all factor loadings and the average variance were over 0.5, convergent validity was met. The Fornell and Larcker (1981) technique was used to validate divergent validity.

Assessment of Discriminant Validity

Fornell and Larcker (1981) advise calculating the square root of AVE in each variable's correlation coefficient to verify discriminant validity. For every data, the square root of the variance between each structure and each AVE is bigger than any correlation coefficient between structures and the meeting's good discriminative validity requirement. The constructs' correlation exceeds the diagonal value, proving the measurement tool's construct validity.

Cross Loading Criteria of Discriminant Validity

The survey's discriminant validity measures how well questions distinguish across notions or ideas. This will be identified by looking at item cross loading (Table 5) and Fornell and Larcker (1981) criteria (Table 6). Table 3 shows that every loading was larger than the total of the cross-loadings, proving discriminant validity. In the following analysis, the correlations between distinct constructs were compared to the square root of each construct's average variance.

Table 3: Indicator Items Cross Loading

Items	CA	E	EI	EN	F	ITP	LA	LEP
CA	0.843	0.270	-0.192	-0.223	-0.272	0.442	0.243	0.457
E	0.118	0.778	-0.345	-0.150	0.076	0.197	0.159	0.128
EI	-0.136	-0.135	0.810	0.315	0.134	-0.379	0.049	-0.196
EN	-0.225	0.005	0.251	0.810	0.003	-0.296	-0.051	-0.126
F	-0.338	-0.013	0.163	0.102	0.798	-0.341	0.404	-0.307
ITP	-0.546	0.217	-0.468	-0.429	-0.412	0.954	0.241	0.486
LA	0.232	0.061	-0.017	-0.051	0.267	0.185	0.805	0.183
LEP	0.456	0.143	-0.281	-0.139	-0.255	0.462	0.216	0.872

Table 6 shows Fornell and Larcker (1981) discriminant validity results. Bagozzi and Yi (1988), define discriminant validity as the difference between first- and second-principal indexes. All diagonal values were bigger than row and column values, indicating discriminant measures.

Fornell and Larcker (1981) Criteria of Discriminant Validity

An indicator's outer loading on the related construct should be bigger than all of its loadings on other constructs on each item row. Cross loadings that exceed indicator outer loadings indicate discriminant validity issues (Hair Jr *et al.*, 2014). No cross loading differed from the selected indicator by less than 0.2 across each indicator row (see Table 3). Hence, this study shows discriminant validity. The AVE mode compares the square root of the AVE values with the LVC in the row and column (Table 4).

Table 4: Discriminant Validity (Fornell and Larcker Criterion)

Items	CA	EN	E	EI	F	ITP	LEP	LA
CA	**0.791**							
EN	-0.279	**0.773**						
E	-0.138	0.176	**0.779**					
EI	-0.024	0.427	0.404	**0.753**				
F	-0.143	-0.061	-0.034	-0.180	**0.721**			
ITP	0.329	-0.407	-0.210	-0.497	0.419	**0.952**		
LEP	0.562	-0.191	-0.169	-0.286	0.310	0.510	**0.842**	
LA	0.341	-0.084	0.175	0.021	0.332	0.256	0.194	**0.758**

HTMT Criteria for Assessing Discriminant Validity

HTMT was used to evaluate discriminant validity. Table 11 shows results. If the HTMT value is higher than 0.85 (Kline, 2015) or 0.90 (HTMT0.90), discriminant validity is questionable (Gold *et al.*, 2001). Table 5 showed that all values passed HTMT0.90 and HTMT0.85, establishing the measurement model's discriminant validity.

Table 5: Discriminant Validity (HTMT)

Items	CA	EN	E	EI	F	ITP	LEP	LA
CA								
EN	0.303							
E	0.193	0.246						
EI	0.248	0.531	0.521					
F	0.378	0.133	0.115	0.244				
ITP	0.642	0.439	0.242	0.583	0.476			
LEP	0.620	0.194	0.202	0.325	0.344	0.569		
LA	0.414	0.128	0.214	0.161	0.418	0.294	0.219	

Assessment of the Structural Model for Collinearity Issues

As the measurement model assessment was satisfactory, we went on to the structural model assessment. Before model analysis, constructs were tested for collinearity. Sarstedt and Cheah (2019) proposed that VIF values 5.0 indicate predictor collinearity. Table 6 shows construct VIF values, all

below 3.0. All constructions had no collinearity concerns. PLS-SEM analysis depth varies on project scope, model complexity, and existing literature. A comprehensive PLS-SEM study may involve multicollinearity testing.

Table 6: Checking of Collinearity Issues VIF

Items	VIF
CA	2.010
E	2.506
EI	2.050
EN	1.828
F	1.403
ITP	2.929
LA	1.628
LPE	2.654

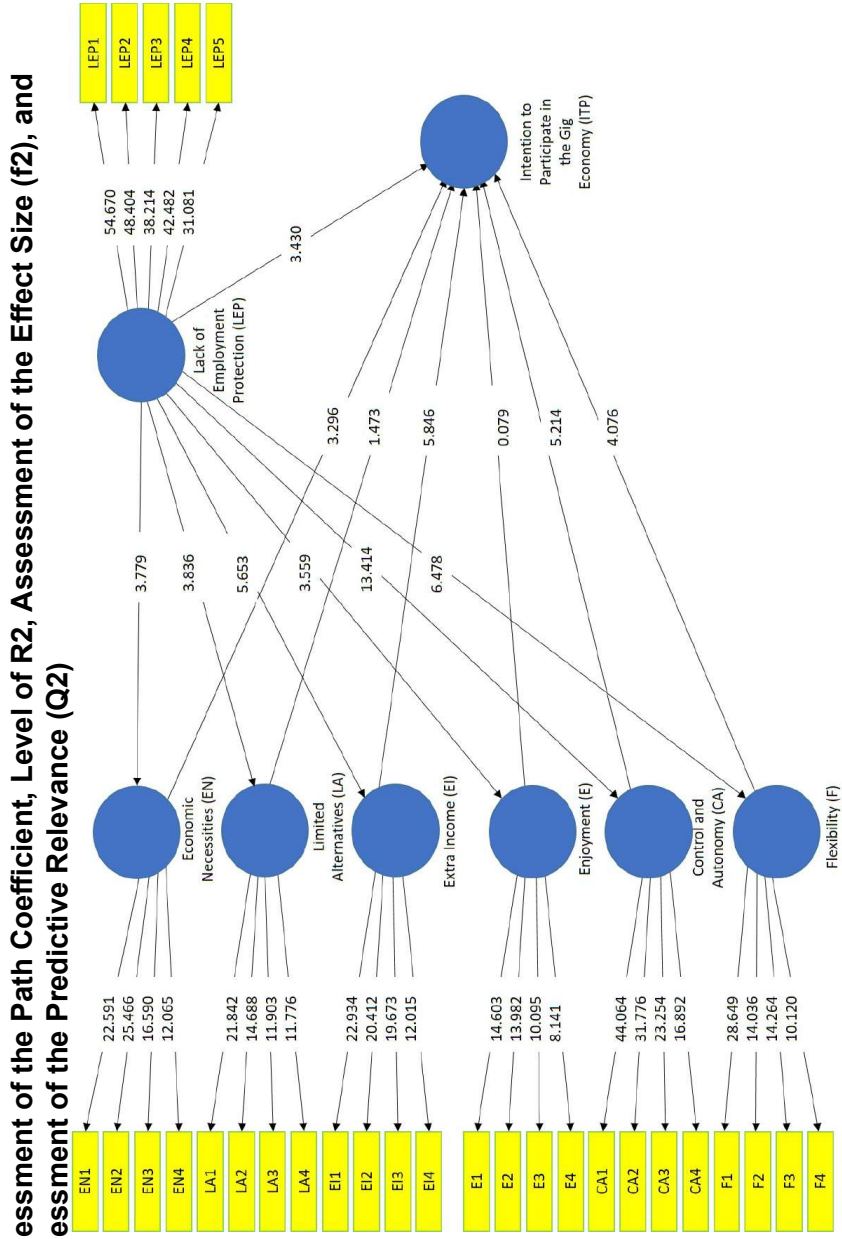

Figure 3: Hypothesis Testing: Bootstrapping Direct Effect Results

After vetting the model for collinearity, this research zeroes in on the model's predictive capability using structural model analysis. Figure 3 displayed the direct effect outcome from bootstrapping. Steiger (1990) explains that the estimations of the path coefficients and the R2 value, which define the predictive power of the tested model, constitute a structural model that denotes the causal links among the constructs in the model. Using a bootstrapping approach with a resample of 5,000, Hair Jr *et al*., (2017) suggested examining R2, beta (β), and the corresponding *t*-values. Additionally, they suggested that researchers record effect sizes (f2) and predictive relevance (Q2) in their reports.

Hypotheses Testing

Table 7 summarised the theories' direct correlations. EN (= -0.161, *t* >1.96, *p* 0.05), EI (= -0.277, *t* >1.96, *p* 0.05), CA (= 0.273, *t* >1.96, p 0.05), and LEP (= 0.176, *t* >1.96, *p* 0.05) affected FDRs' intention to participate in the gig economy. These supported H1a, H1c, H2b, H2c, and H3. LA and E had no effect on ITP with t values below 1.96 and *p*-values above 0.05. H1b and H2b were not supported. LEP moderated the relationship between EN (= -0.083, *t*-value >1.96, *p*-value 0.05) and FDRs' intention to participate in the gig economy. Hypotheses H4b, H4c, H4d, H4e, and H4f were not supported. The model's R2 for lack of employment protection (0.948) and gig economy participation (0.930) show that 90% of the dependent variable's variance is explained by the independent variable. The benchmark index explains 90% of the variance. According to Nakagawa and Schielzeth (2013), $r > 0.7$ indicates a strong impact size. This study concluded that described variances are adequate.

Table 7: Results of Hypotheses Testing

HT	Path	Standard Beta	Standard Error	*T*-Value	*P*-Values	Decisions
	Push Factors -> ITP					
H1a	EN-> ITP	-0.161	0.048	3.306	0.001	Supported
H1b	LA -> ITP	0.060	0.041	1.370	0.171	Not supported
H1c	EI -> ITP	-0.277	0.049	5.778	0.000	Supported
	Pull Factors -> ITP					
H2a	E -> ITP	-0.047	0.054	0.872	0.383	Not supported
H2b	CA -> ITP	0.273	0.053	5.157	0.000	Supported
H2c	F -> ITP	0.133	0.048	2.701	0.007	Supported
	Mooring Factors -> ITP					
H3	LEP -> ITP	0.176	0.050	3.678	0.000	Supported
	Moderation Effect 1 (Mooring Factors with Push Factors -> ITP)					
H4a	LEP with EN -> ITP	0.083	0.044	2.021	0.044	Supported
H4b	LEP with LA-> ITP	0.041	0.035	1.266	0.206	Not supported
H4c	LEP with EI -> ITP	0.014	0.036	0.375	0.708	Not supported
	Moderation Effect 2 (Mooring Factors with Pull Factors -> ITP)					
H4d	LEP with F -> ITP	-0.043	0.043	1.004	0.316	Not supported
H4e	LEP with CA -> ITP	0.012	0.047	0.226	0.821	Not supported
H4f	LEP with E -> ITP	0.077	0.041	1.760	0.079	Not supported

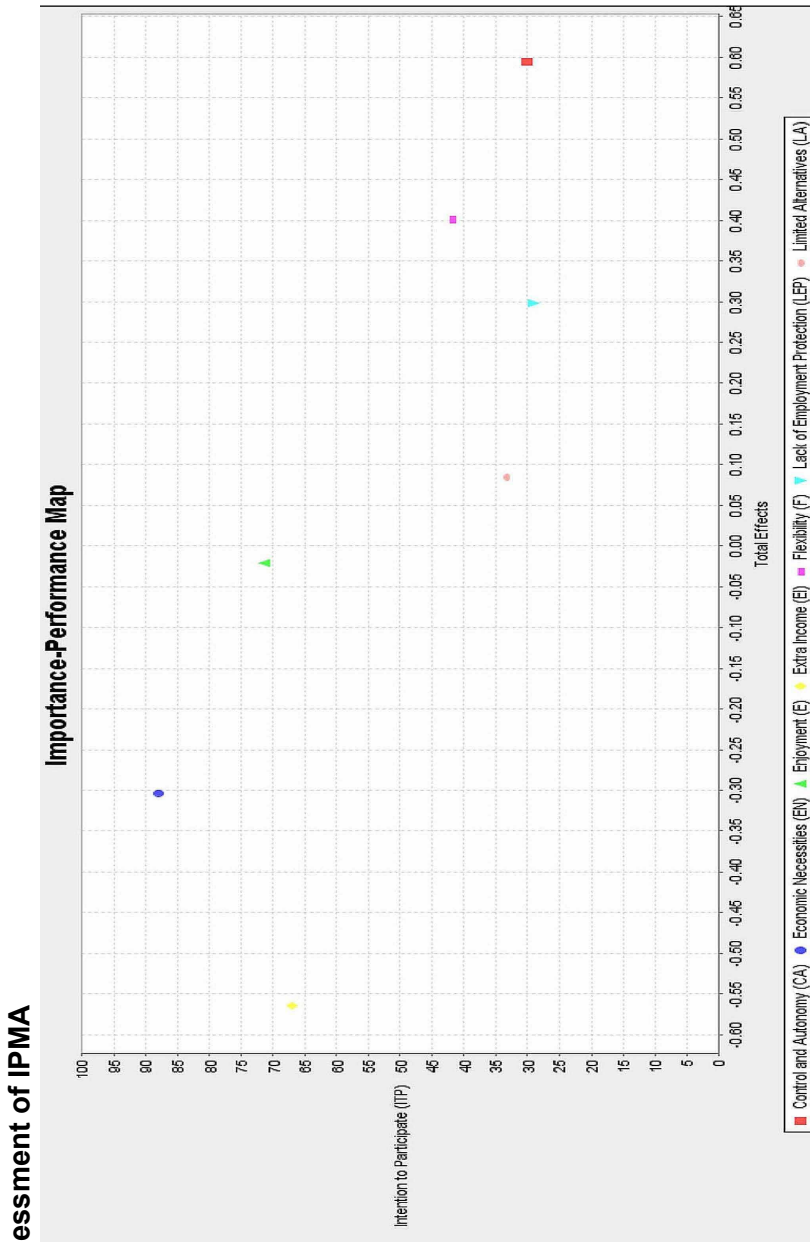

Figure 4: IPMA Matrix Analysis

Table 8: Total Effect and Performance for Intention to Participate in the Gig Economy

Items	CA	EN
CA	0.594	30.120
EN	-0.303	87.957
E	-0.021	71.308
EI	-0.565	67.030
F	0.400	41.833
LEP	0.298	29.150
LA	0.084	33.300

This study employed IPMA with 'gig economy intention' as the target construct. Figure 4 and Table 8 reveal that EN, E, and EI are key ITP components. The three structures also affected ITP well. EN and E shaped the situation's importance.

DISCUSSION

The objective of this study is to identify factors that affect FDRs' intention to participate in the gig economy. Secondly, this study tested whether the PPM variables prevented or supported those intentions by placing particular emphasis on the lack of employment protection (mooring factor). This study found that the 'push factors' (economic necessities, and extra income) exert positive influences on FDRs' intention to participate. The 'pull factors' (flexibility, and control and autonomy) also have positive effect in affecting FDRs' intentions. The same goes with the 'mooring factor' (lack of employment protection) having positive effect in affecting FDRs' intentions to participate in the gig economy. However, this study found neither 'limited alternatives' (push factor), nor 'enjoyment' (pull factor) have positive effect in such intention. 'Lack of employment protection', which was used as a moderating variable, has moderated positive relationship between 'economic necessities' and FDR's intention to participate in the gig economy. This study expanded the push-pull framework by adding a mooring factor to the past studies made by Sevilla (2020), Angelucci (2020), Keith *et al.* (2019), Keith *et al.* (2020), and Paul (2018). In addition to this, this study also compliments the past studies made by Fana *et al.* (2020), Bajwa *et al.* (2018), Rachmawati *et al.* (2022), Graham *et al.* (2017), and Sargeant (2017).

PRACTICAL IMPLICATIONS

Practically, this study provides useful recommendations for FDRs' employment in the country. It allows the relevant stakeholders namely, the Ministry of Human Resources, The Labour Department for Peninsular Malaysia, The Ministry of Finance, The Ministry of Entrepreneur and Collective of Malaysia, The Statistics Department of Malaysia and the Social Security Organization Malaysia to start taking the employment and welfare of the FDRs seriously and emphatically. This is to encourage FDRs' participation in the gig economy. In time of COVID-19 pandemic, FDRs were pushed into gig economy due to the economic necessities and in search for extra income. The finding suggests that FDRs' participations are not voluntary in nature since most of them have experienced job loss because of MCO imposed by the Malaysian government. The loss of income has left them with no option but to join the FDPs to generate a decent income. It is also evident from this study, although flexibility and control and autonomy have positive correlation with FDRs' intention to participate in the gig economy, the lack of employment protection has brought in behavioural change for which the tendency for them to leave the platform would be very high. Although, the lack of employment protection was perceived to be impactful in driving FDRs away from the gig economy, it was evident that due to the economic necessities, FDRs' have no options but to stay. By exploring the different associated antecedents as well as the moderating factors that encourage these FDRs to remain in the gig economy, this study provides empirical evidence on the factors that influence FDRs' intention to participate in the gig economy in this country. According to the Malaysian viewpoint, this study is considered pertinent and significant in determining the demography of FDRs in the nation and variables relating to employment and welfare. The findings of this study have important applications in evaluating the insecure working conditions faced by FDRs and FDPs in the gig economy. Concerted efforts must be geared by promulgating necessary laws, and regulations to safeguard the employment of FDRs in Malaysia.

LIMITATION

This study was subjected to some restrictions. The results of this study may not be generalisable to other regions of Malaysia because it was restricted to

Wilayah Persekutuan Kuala Lumpur and Selangor (Klang Valley). Secondly, because this study is limited to the top five FDPs, thus, it cannot be applied to all FDPs in Malaysia. Third, the nature of FDRs has proven to be a substantial impediment to direct connection with FDPs. Although this study focuses solely on FDRs, the absence of FDPs in this study opens the door for future research. The demographics presented may not highlight these two groups for references because this study is not gender or race focused.

CONCLUSION

This study has witnessed that precarity in terms of 'lack of employment protection', for the FDRs is strongly linked to the absence of sufficient employment protection by the FDPs that lead the FDRs' job to be insecure and unstable. The lack of contractual labour arrangements as contemplated under the Employment Act of 1955, Sarawak Labour Ordinance (Cap 67), and Sabah Labour Ordinance is evidence of this (Cap 67). As FDRs are not defined as workmen under the said Labour Laws, there is so much fear of FDRs to experience job loss. The absence of workmen definition also prohibits them to join labour unions in accordance to the Industrial Relations Act 1967, hence embedded in cultural of precariousness and the ways in which insecurity and competitive culture pit one worker against another. FDRs are part of a global workforce, working in all major cities, and with the potential to contribute to the emergence of a transnational movement of labour. Future research should emphasize more within this grey area. It is becoming more and more clear that fundamental social security and safety should not be sacrificed in favour of autonomy and flexibility, and that the market cannot be trusted to address the precarity of employment. A wake-up call should be given as a result of the COVID-19's heightened precarity at work. Policymakers and platform aggregators must take proactive measures in response to this perilous position. In conclusion, this study contributes to our knowledge of the characteristics of FDRs, the factors that affect and attract them to the gig economy, and the precarious working conditions that both FDRs and FDPs experience. The results showed a variety of intriguing and unexpected factors that affect FDRs' propensity to continue participating in the nation's gig economy, which may pique the curiosity of future scholars for further investigation. This crucial information might also help Malaysian lawmakers realise and establish appropriate legislation to safeguard FDRs'

employment in the nation. In short, the findings are expected to serve as a starting point for further investigation on FDRs specifically and the gig economy in general.

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