Pacific Asia Journal of the Association for Information Systems

ISSN 1943-7544

Research Paper doi: 10.17705/1pais.14303 Volume 14, Issue 3 (2022)

Workers' Affective Commitment in The Gig Economy: The Role of IS Quality, Organizational Support, and Fairness

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Abstract

Background: *The rapidly growing gig economy brings lots of opportunities and challenges, and one of them is workers' affective commitment. Because of the gig economy's nature, gig workers depend on the technology-enabled platform to finish their tasks. We investigate how gig workers' perception of the platform's quality, or IS quality, will affect how they perceive organizational support and fairness, which further affects their affective commitment.*

Method: *We surveyed 239 Uber drivers in Indonesia to test our model via snow-balling technique. We used PLS with a second-order formative construct model to validate our hypotheses.*

Results: *The results showed that the two dimensions of IS quality, information quality and system quality, were positively associated with organizational support. Only information quality was positively associated with fairness. Both organizational support and fairness were positively associated with affective commitment.*

Conclusion: *For uber drivers, information quality and system quality of the Uber App serve as drivers of perceived organization support. Information quality also contributes to perceived fairness. Drivers who perceive high organization support and fairness are more likely to be affectively committed to the organization.*

Keywords: Gig Economy Workers, Information Quality, System Quality, Affective Commitment.

This research article was submitted on 02-Sep-2021 and under two revisions, accepted on 17-Mar-2022.

Citation: Chiu, H. H., Palupi, G. S., & Zhu, Y. Q. (2022). Workers' Affective Commitment in The Gig Economy: The Role of IS Quality, Organizational Support, and Fairness. *Pacific Asia Journal of the Association for Information Systems, 14*(3), 52-76. https://doi.org/10.17705/1pais.14303

Introduction

Imagine one morning you are listening to Spotify while you are having breakfast at home. After breakfast, you start planning your upcoming vacation by searching on Airbnb for a room that matches your criteria. You are also thinking of renting a bike from Spinlister during your vacation. In the middle of your planning, you receive a call from an Instacart shopper asking for an alternative item on your list. You receive your groceries in half an hour and then call an Uber driver so you can meet your friend for lunch. Even though all these activities mentioned above are different and might seem unrelated, they are part of a new business model called the "gig economy."

Although there is no definitive definition of the gig economy, it usually refers to the economic system of intermediary firms that connect the on-demand workers or service providers with customers via internet-based technology or application (Cheng, 2016; Meijerink & Keegan, 2019; Sundararajan, 2016). Because of the gig economy's characteristics, it is also termed sharing economy, peer-to-peer economy, collaborative consumption, on-demand economy, and the platform economy (PricewaterhouseCoopers, 2015; Sundararajan, 2016; Sutherland & Jarrahi, 2018; Vallas & Schor, 2020). The estimated global revenue of five key sharing sectors (i.e., car sharing, finance, travel, staffing, and media streaming) was expected to grow from $14 billion in 2014 to $335 billion by 2025 (PricewaterhouseCoopers, 2015). In addition, labor statistics in the US have shown that the number of gig workers increased 15%, or 6 million, between 2010 and 2020 (Iacurci, 2020).

The rapid growth of the gig economy brings opportunities as well as challenges (Cheng, 2016; Dunn, 2020). For example, the gig economy's work schedule and pay flexibility fit the need of many people (Dunn, 2020). Younger people can earn income while going to school. People with or without a regular job can earn extra income, and older people can delay the collection of social security (Gleim et al., 2019). However, the on-demand nature of employment also contributes to unstable income and lower wages (Akhtar, 2019; Mims, 2019), as well as risky and coercive working conditions (Reid-Musson et al., 2020).

Furthermore, gig workers are treated as independent contractors, who do not have the "security blanket" provided by employers, such as minimum wages, health insurance, retirement plan, and paid vacation (Gleim et al., 2019; Iacurci, 2020). Because of all those challenges, the turnover rate for gig companies could be as high as 500% per year, compared to the fast-food industry with a turnover rate of 150% per year (Mims, 2019). This turnover creates some potential problems for the gig companies. The labor market of those who are interested in the job will be exhausted (Mims, 2019); further, customers are not getting consistent services (PricewaterhouseCoopers, 2015). We argue those problems are associated with gig workers' commitment.

Organizational commitment is defined as "the strength of an individual's identification with and involvement in a particular organization" (Porter et al., 1974, p. 604). It is one of the most researched concepts in management, organizational behavior, and human resource management (Ng, 2015). It has long been a predictor for important employee attitude and behaviors, such as job satisfaction (e.g., Neininger et al., 2010), organizational citizenship behavior (e.g., Bishop et al., 2000; Ng & Feldman, 2011), employee performance (e.g., Benkhoff, 1997; Riketta, 2002), and turnover intention (e.g., Joo & Park, 2010; Neininger et al., 2010). Researchers have argued that organizational commitment should be multi-dimensional (Meyer et al., 2002), and various models of commitment have been proposed (Cooper-Hakim & Viswesvaran, 2005). Meyer and Allen (1991) incorporated both attitudinal and behavioral perspectives and suggested that organizational commitment should encompass three components: a) an obligation (normative commitment), b) a need (continuance commitment), and c) a desire (affective commitment). We will focus on affective

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DOI: 10.17705/1pais.14303

commitment in this study, not only because more attention has been paid to the emotional attachment to organizations, but also compared to the other two components, affective commitment correlated more strongly with various work behaviors (Mercurio, 2015).

The purpose of this study is to examine the antecedents to gig workers' affective commitment to the gig company, which has been identified as one of the most pressing challenges for the gig economy (Liu et al., 2020). One of the core features of the gig economy is algorithmic management, defined as "oversight, governance and control practices conducted by software algorithms over many remote workers." (Möhlmann & Zalmanson, 2017). Scholars have observed the duality of algorithmic management's impacts. On the one hand, gig workers' behavior and performance are constantly checked and monitored by the platform's algorithm (Möhlmann & Henfridsson, 2019; Möhlmann & Zalmanson, 2017; Vallas & Schor, 2020). As a consequence, gig workers feel they are under constant surveillance, which undermines the autonomy that many gig workers value (Möhlmann & Henfridsson, 2019; Möhlmann & Zalmanson, 2017; Vallas & Schor, 2020). The tension between autonomy and control is believed to impact gig workers' turnover (Vallas & Schor, 2020; Wiener et al., 2021), and the feeling of being empowered or marginalizied (Deng et al., 2016). Prior research also identified information attributes, such as asymmetry, lack of transparency, misuse of data, repeatability etc. as concerns for gig workers (Deng, et al., 2016; Hong et al., 2020; Möhlmann & Henfridsson, 2019; Möhlmann & Zalmanson, 2017; Möhlmann et al., 2021). On the other hand, the guiding provided by algorithms, i.e., the overseeing and feedback on how they conduct their daily work has a positive effect on drivers' perceived autonomy, fairness and privacy (Wiener et al., 2021). Other technical capabilities such as management of work history data have been found to promote continuance of working on the platform (Taylor & Joshi, 2018). Since both turnover intention and empowerment are associated with affective commitment, the clues offered in prior literature raise some interesting, yet unsolved questions: what are the impacts of the features of the sharing platform on affective commitment? Does the duality still exist? As gig workers' linkage and communication to the gig company are almost entirely dependent on the technology platform (Wiener et al., 2020), we suggest that their perception of the platform will affect their affective commitment. To that end, we adopt the IS success model to examine how system quality (i.e. functionality of the platform) and information quality (i.e. accuracy and reliability of the information output) affect gig workers' perception of organizational support and fairness, which in turn affects their affective commitment to gig companies.

We also seek to advance the theoretical understanding of gig workers by bridging the IS success model with organizational behavior research. Prior IS success model research has mostly been focused on intentions to use and satisfaction as the end results (for a reviw, see Petter & McLean, 2009). We expand the application of the IS success model to predict organizational behavior outcomes such as perceived organization support and perceived fairness to address the pivotal role of information systems in the gig economy. In technology-mediated work environments like the gig economy, technology and information systems take roles that was traditionally performed by human managers, challenging the validity of our extant understanding of how employees develop their perceptions and reponses in such organizations. We adopt the sociotechnical perspective in the Information Systems discipline (Sarker et al., 2019), which recognizes the interaction between the technical component (i.e. the system and the information) and the social component (i.e. gig workers' perceptions of fairness and support) and theorize the process of how platform IT characteristics exert their impact on organizational behavior.

This study further contributes to the gig economy literature by surveying Uber drivers in a developing country. Previous research has shown that gig workers in lower- and middle-income countries were more content and satisfied with the works they were doing compared to those in high-income countries (Wood et al., 2019). While previous research on the gig economy mainly focused on gig workers in developed countries (i.e. Gleim et al., 2019.,

Möhlmann & Henfridsson, 2019; Möhlmann & Zalmanson, 2017), our unique sample will shed light on how algorithmic management affect gig workers in developing countries.

We propose and validate a model explaining gig workers' affective commitment and use social exchange theory as an overarching theory in this study. Social exchange theory posits that social exchanges are a series of reciprocial interactions between two or more parties (Cropanzano & Mitchell, 2005; Cropanzano et al., 2017). The social exchanges for gig workers no longer exist among individuals versus managers, but are expected to exist between indiviuals and the platform. Previous research has found that gig wokers tend to perceive the algorithm as their "boss" (Wiener et al. 2021), and it is assumed that the interaction of the platform, which is controlled by the algorithm, forms the basis of gig workers social exchanges with gig companies. By examining the relationship between gig workers and the platform from the social exchange perspective, social exchange theory provides a plausible framework for us to understand the relationship between various variables in our model.

The rest of the study is organized as follows. First, we introduce the social exchange theory and develop our hypotheses from it. We then describe the methodology of the study and present the results of our analyses in the following sections. Finally, we discuss our results and provide both the theoretical and managerial implications of the study.

Theory and Hypotheses

Social Exchange Theory

Social exchange theory has been one of the most influential theories to understand employee attitude in the work setting (Cook & Rice, 2006; Cropanzano et al., 2017; Cropanzano & Mitchell, 2005; DeConinck, 2010; Redmond, 2015). Homans (1961) viewed social exchange as the exchange of activities associated with costs and rewards between at least two persons (Cook & Rice, 2006; Redmond, 2015). He posited that the social behavior resulted from the social processes with mutual reinforcement or lack of it. Behaviors that are rewarded tend to continue (Cook & Rice, 2006).

Unlike Homans' emphasis on reinforcement, Blau (1964) took an economic and utilitarian perspective on social behaviors. That is, rewards are expected when social behaviors occur (Cook & Rice, 2006). Based on Blau (1964, p. 91), "Social exchange … refers to voluntary actions of individuals that are motivated by the returns they are expected to bring and typically do in fact bring from others." Even though the rewards are not spelled out in advance and are left for individuals to decide (Cook & Rice, 2006; Redmond, 2015), the reciprocal exchange of extrinsic benefits becomes the result of social interactions.

Despite the differences, all social exchange theorists share some common ground. Social exchanges are a series of interactions creating unspecified obligations between two or more parties (Cropanzano & Mitchell, 2005; Cropanzano et al., 2017). The exchange is through the process of reciprocity in a way that one party repays the action of another party regardless of good or bad deeds (Cropanzano et al., 2017). Social exchanges are different from economic exchanges because reciprocity is not spelled out clearly. Instead, it is left for the parties to decide (Redmond, 2015). In other words, social exchanges involve more trust and flexibility compared to economic exchanges (Cropanzano et al., 2017). Because of the theory's focus on costs and rewards, as well as obligations and reciprocity, social exchange theory has been used to examine topics, such as justice, power, commitment, organizational citizenship behavior, communication, status, and social network (Cook & Rice, 2006; Cropanzano et al., 2017; Cropanzano & Mitchell, 2005; DeConinck, 2010; Redmond, 2015).

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DOI: 10.17705/1pais.14303

Since algorithmic management is the core feature in the gig economy, social exchanges are expected to be different in such a context. In a traditional work setting, social exchanges happen between individuals, and the use of "social power" among coworkers and managers is common. However, that is no longer the case for gig workers (Wiener et al., 2021). Gig workers are matched and controlled by the algorithm, and the algorithem is perceived as the proxy of the boss (Möhlmann et al., 2021; Wiener et al., 2021). As a consequence, social exchanges are expected to happen between gig workers and the platform, because interpersonal interactions might not be available. As such, experiences with the platform becomes the basis of the social exchange for gig workers.

IS Quality

Since the role of technology-enabled platforms is central to the gig economy, it is clear that gig workers' perception of the information system that enables the platform affects their perception of the organization. Delone and McLean (1992, 2003) proposed the Information System Success (ISS) model and argued that factors influencing information systems' success should be multifaceted. The ISS model consists of quality measures (information quality and service quality) and two different outcomes: attitudinal outcomes (use and satisfaction) and performance-related outcomes (individual and organizational impact). Both of these different outcome factors are interconnected. In general, the model suggested that quality measures affect attitudinal outcomes, which further affects performance-related outcomes. This study will examine quality measures of the technology-enabled platform: information quality and system quality.

Information quality refers to the quality of information system outputs, which is comprised of four dimensions: completeness; accuracy; format; and currency (up-to-dateness) (Nelson et al., 2005). Previous research has found that information quality influenced various outcomes, such as mobile service intention (Koivumaki et al., 2008), user loyalty (Zhou et al., 2009), knowledge sharing (Durcikova & Gray, 2009), customer service capabilities (Setia et al., 2013), and design quality of the website (Liu et al., 2000).

Information quality is vital for gig workers because they depend on the technology to finish their job, and their income depends on the output the technology provides. For example, an Instacart shopper is connected to customers who need groceries via an app. A shopper needs an accurate and complete shopping list to finish the job. During shopping, the shopper sometimes needs to communicate with the customers about backup items or change orders. Each order's earnings are determined by the number of items, types of items, driving distance, and shopping efforts. A shopper is also entitled to have 100% of tips if good services are recognized by customers (Instacart, n.d.). Therefore, if the app does not provide complete, accurate, understandable, and current information, a shopper will not complete the job and get paid.

Similarly, an Uber driver uses the driver app to complete the task. With the driver app, an Uber driver will be able to use Uber navigation (or Google Maps or Waze), receive and respond to the passenger request, check the trips and earning details, and access passengers' ratings and reviews. If they are close to the airport, Uber drivers will know how many drivers are in the queue in the airport and the approximate wait time (The Rideshare Guy, 2018). In addition, Uber uses a reward program, "Uber Pro," to motivate drivers. There are different reward levels for Uber drivers based on their points during a fixed 3-month period. In addition to points, drivers are required to maintain a certain level of other ratings, such as customer rating, acceptance rate, and cancellation rate, if they want to move up to the next level to receive more rewards (The Rideshare Hustle, 2019; Uber, n.d.). Therefore, it is not a surprise that previous research on drivers of various ride-hailing platforms showed that drivers had higher willingness to work if the platformr provides a passenger rating system and a dummy phone number to communicate between the passengers and drivers (Hong et al., 2020).

Another quality measure is system quality. System quality is related to functions and features system offers, which is comprised of three dimensions: reliability (dependability of system operation); accessibility (the ease with which information can be accessed or extracted from the system); and response time (the degree to which the system offers timely responses to requests for information or action) (Nelson et al., 2005). Previous research has shown that system quality impacted perceived ease of use (Rai et al., 2002), user satisfaction (Bailey & Pearson, 1983), and user trust (Vance et al., 2008).

Reliability and accessibility play an essential role and are regarded as important values in gig employees' work (Deng et al., 2016). For example, Uber searches for drivers by the closest distance. When a request comes in, a driver has to respond in a short time. Whether or not to take that request depends on factors, such as passenger rating, what kind of ride is requested, distance, etc. If the system is not reliable or accessible, a driver might not get the request or take an unpleasant ride. Similarly, Airbnb provides an Airbnb host with a coordinated calendar and pricing tool to manage the property (Airbnb, n.d.). If the system's quality is questionable, a host might have conflict reservations, the price might not be competitive, or the host might not answer the customers' questions timely, which will affect their customer ratings and income.

IS Quality and Organizational Support

Perceived organizational support is commonly defined as employees' perceptions of the extent to which organizations value their contributions and care for their well-being (Eisenberger et al., 1986; Eisenberger & Stinglhamber, 2011; Kurtessis et al., 2017). The previous meta-analysis has shown that working conditions are an antecedent of perceived organizational support (Kurtessis et al., 2017). As we argued earlier, gig workers rely on the technology-enabled platform to communicate with potential clients. If gig workers perceive the information provided by the platform is complete, accurate, readable, and up-to-date, and the system is reliable and timely, they will be more likely to finish their jobs smoothly and receive the earning or award associated with their work.

Based on the social exchange theory, the social exchange process starts with an organization actor treating an employee positively or negatively. In response, that employee will reciprocate the treatment with good or bad behaviors. Social exchange theory posits that if the organizational actor's initial action is positive, the employee will be more likely to have more or fewer negative responses, either relationally or behaviorally, even though one will affect the other. After a series of successful reciprocal exchanges, a high-quality social exchange relationship is expected to form between the organization actor and the employee (Cropanzano et al., 2017). Therefore, when gig workers perceive both the information quality and the system quality are high, they will be more likely to believe that organizations treat them favorably and care about them. Therefore, we hypothesize:

H1a: Information quality is positively associated with perceived organizational support.
H1b: System quality is positively associated with perceived organizational support.

IS Quality and Perceived Fairness

Equity theory (Adams, 1965; Mowday, 1991) provides a framework as to how employees respond to (un)fairness both cognitively and behaviorally in the workplace (Steers et al., 2004). It posits that an employee evaluates the relationship with the organization by computing a ratio between inputs and outcomes (Janssen, 2001). Inputs could be investments, experiences, skills, and contributions brought to the work setting (Bolino & Turnley, 2008; Janssen, 2001), and outcomes could be money, status, desired job-related responsibilities, or punishment (Bolino & Turnley, 2008; Janssen, 2001). This employee also compares input-outcome ratios with other people's ratios and decides if there is equality or fairness. When inequality is

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DOI: 10.17705/1pais.14303

perceived, either under reward or over reward, the employee tends to have unpleasant emotions and adjust his behaviors, such as reducing the efforts put in the work, withdrawing from the work (Janssen, 2001), or asking for more rewards to restore equity.

The business model in the gig economy is that gig workers receive and respond to work requests through the technology or application and carry out the work. Gig workers then receive payments, tips, and customer ratings associated with the services they provide. High quality information provided by a good system facilitates gig workers' job, making it easier for them to match with assignments and finish each assignment smoothly (i.e., reducing input), and achieve higher income (i.e., increase outcome). Based on equity theory, gig workers' input-outcome ratio will determine their perception of fairness. As a consequence, their perception of IS quality and system quality will positively affect their perception of fairness. Therefore, we hypothesize:

H2a: Information quality is positively associated with perceived fairness.
H2b: System quality is positively associated with perceived fairness.

Perceived Organizational Support and Affective Commitment

Affective commitment reflects the employees' emotional attachment to, involvement in, and identification with the organization they are working for (Lee & Peccei, 2007; Mercurio, 2015; Meyer & Allen, 1991; Panaccio & Vandenberghe, 2009). Previous research has shown that employees with high affective commitment are more likely to demonstrate organizational citizenship behavior (Mercurio, 2015; Ng & Feldman, 2011) and less likely to leave the organization or be absent from the job (Mercurio, 2015). Therefore, organizations must seek ways to strengthen employees' affective commitment. Since there is a loose connection between gig workers and gig companies, it becomes a pressing issue to increase gig workers' affective commitment (Liu et al., 2020).

It is believed that a high-quality exchange between employees and the organization they are working in will contribute to affective commitment (Ng, 2015). Previous research has shown that perceived organizational support is positively associated with affective commitment because of the social exchange process (Kurtessis et al., 2017; Lee & Peccei, 2007; Mercurio, 2015). In other words, when employees believe that organizations care about their needs and well-being, it creates a felt obligation of reciprocity for them to meet the objectives of the organization they are working for (Kurtessis et al., 2017; Lee & Peccei, 2007; Panaccio & Vandenberghe, 2009). In addition, feeling supported by the organization will fulfill employees' socioemotional needs, resulting in more respect, greater identification with, and more commitment to the organization (Kurtessis et al., 2017; Lee & Peccei, 2007; Panaccio & Vandenberghe, 2009). As a result, various meta-analyses have shown that perceived organizational support is a strong antecedent of affective commitment (Kurtessis et al., 2017; Meyer et al., 2002). Therefore, we hypothesize:

H3: Perceived organizational support is positively associated with affective commitment.

Perceived Fairness and Affective Commitment

In the gig economy, gig workers receive and accept the work request via the technology-enabled platform. After they put in time and effort to finish the job, they will see their reward via the platform. When gig workers perceive equity between their inputs, such as time and energy, and their outcomes, such as customer ratings, earnings, and rewards, they will feel fair and satisfied. The reciprocity aspect of the social exchange theory suggests that when gig workers feel they are fairly treated, it is more likely to form a high-quality exchange relationship between them and the gig companies (Cropanzano et al., 2007), and they were more likely to have higher continuence intention and less workaround use (Wiener et al., 2021). The high-quality relationship will make gig workers more emotionally attached to and identify more with the gig organization, which will enhance their affective commitment. Therefore, we hypothesize:

H4: Perceived fairness is positively associated with affective commitment.

We present our research model in Figure 1 below.

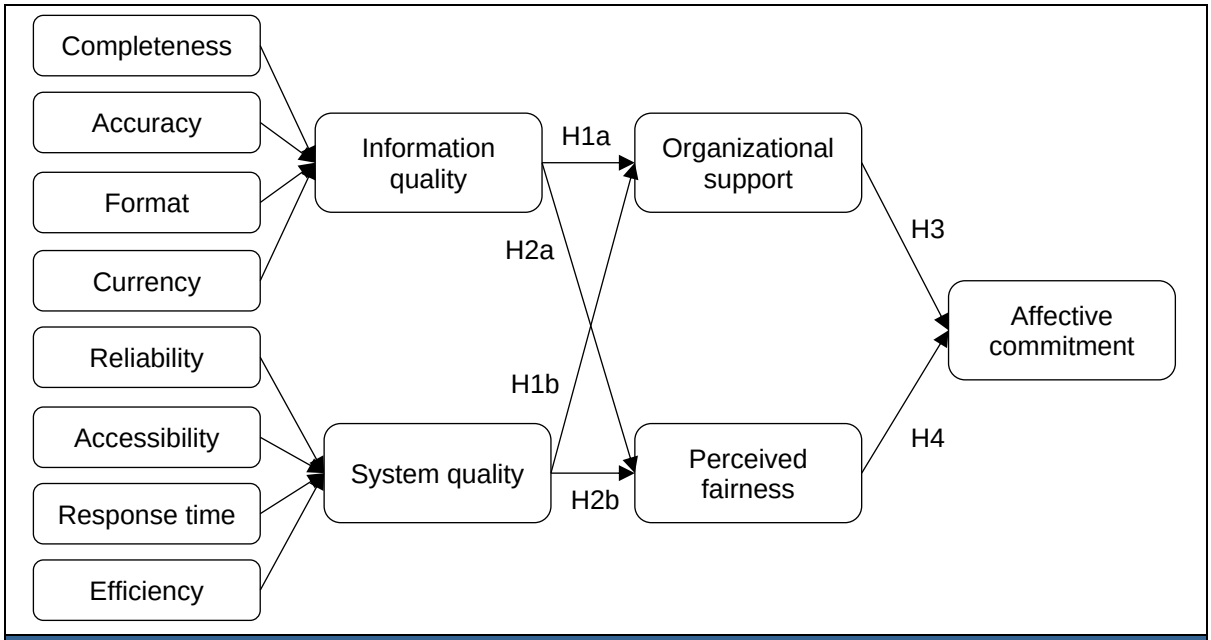

Figure 1 – Research Model.

Method

We collected our data with a structured paper-based questionnaire in Surabaya City, Indonesia. Surabaya is the third-largest city in Indonesia, with a sizeable Uber driver community. A total number of 252 Uber drivers participated via snowball sampling (Atkinson & Flint, 2001), of which 239 provided completed data and were used in the final analysis. Snowball sampling is a nonprobability method of survey sample selection that relies on referrals from initially sampled respondents to other persons believed to have the characteristic of interest. It has been commonly used for, but is not limited to hard-to-reach populations, e.g., people who are e geographically dispersed and without formal organization structure, such as jazz musicians or unregulated workers, which is fit for our context (Parker et al., 2019). The limitation for snowball sampling lies in that the sample is dependent on the researcher's personal resources and contacts, thus may lead to sampling bias (Parker et al., 2019). To overcome the bias due to a single reference, we initiated the survey with three respondents with varying demographic features for diversity. As depicted in Table 1 below,

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the final sample consisted of 71.1% males and 28.9% females. Most of the respondents were 31–40 years old. The dominant level of education was high school education (79.9%). The majority of them work full-time as Uber drivers (73.6%). Most of them had been with Uber for less than a year.

Table 1 – Respondent Demographics

	Items	Frequency	Percentage
Gender	Male	170	71.1%
	Female	69	28.9%
Age	Under 20 years old	1	0.4%
	21-30 years old	42	17.6%
	31-40 years old	177	74.1%
	41-50 years old	17	7.1%
	Over 51 years old	2	0.8%
Education	Middle school or below	0	0%
	High school	191	79.9%
	Bachelor's degree	48	20.1%
Status	Full time	176	73.6%
	Part time	63	26.4%
Tenure with Uber	Less than 3 months	5	2.1%
	4-6 months	29	12.1%
	7-9 months	41	17.2%
	10-12 months	109	45.6%
	More than 13 months	55	23%

Measures

The questionnaire consisted of two parts. The first part covered the demographic information about Uber drivers, including gender, age, education, tenure, work hours per week, etc. The second part of the questionnaire measures constructs in the research model with items measured with a five-point Likert scale (1 Strongly Disagree to 5 Strongly Agree).

Most of our measures were adapted from scales that had been validated in prior research. The scales were customized wherever needed to make them relevant to the context of our research. Following prior research on information and system quality, we conceptualized them as two second-order formative constructs (Hsu et al., 2015; Setia et al., 2013). Information quality as a second-order formative construct consisted of completeness, accuracy, format, and currency as the first-order constructs. System quality consisted of reliability, accessibility, response time, and efficiency as the first-order constructs. The rationale for this conceptualization was two-fold. First, the causality directions move from the sub dimensions to the overall assessment of information and system quality, rather than from information and system quality to the sub-dimensions (Petter et al., 2007). Second, as indicators of the higher-order construct, SQ, the sub-dimensions are not interchangeable (Petter et al., 2007). Except for efficiency, all other first-order constructs were measured with the items from Nelson et al. (2005). Since the app is the sole channel for Uber drivers to communicate with Uber the company and passengers, we added efficiency in communication as a system quality dimension and developed the measure for it. The perceived organization support scale was from Eisenberger et al. (1986), whereas perceived fairness was from Kim and Leung (2007), and affective commitment was from Allen and Meyer (1990). Furthermore, we controlled for gender, work status, and tenure with Uber. Table 2-1 and 2-2 presented the items and their sources.

Table 2-1 – Measurement of Second-Order Constructs						
Second-order Construct	**Type**	**First-order Construct**	**Type**	**Code**	**Items**	**Source**
Information Quality	Formative	Completeness	Reflective	IQ11	The Uber App provides me a complete set of information.	Nelson et al. 2005
				IQ12	The Uber App produces comprehensive information.	
				IQ13	The Uber App provides me with all the information I need.	
		Accuracy	Reflective	IQ21	The Uber App provides correct information.	Nelson et al. 2005
				IQ22	There are few errors in the information I obtain from the Uber App.	
				IQ23	The information provided by the Uber App is accurate.	
		Format	Reflective	IQ31	The information provided by the Uber App is well formatted.	Nelson et al. 2005
				IQ32	The information provided by the Uber App is well laid out.	
				IQ33	The information provided by the Uber App is clearly presented on the screen.	
		Currency	Reflective	IQ41	The Uber App provides me with the most recent information.	Nelson et al. (2005)
				IQ42	The Uber App produces the most current information.	
				IQ43	The information from The Uber App is always up to date.	

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DOI: 10.17705/1pais.14303

Table 2-2 – Measurement of First-Order Constructs			
First-order Construct	**Code**	**Items**	**Source**
Reliability	SQ11	The Uber App operates reliably.	Nelson et al. (2005)
	SQ12	The Uber App performs reliably.	
	SQ13	The operation of the Uber App is dependable.	
Accessibility	SQ21	The Uber App allows information to be readily accessible to me.	Nelson et al. (2005)
	SQ22	The Uber App makes information accessible.	
	SQ23	The Uber App makes information easy to access.	
Response Time	SQ31	It takes too long for the Uber App to respond to my request (Reverse coded).	Nelson et al. (2005)
	SQ32	The Uber App provides information in a timely fashion.	
	SQ33	The Uber App returns answers to my request quickly.	
Efficiency	SQ41	I can communicate efficiently with Uber using the Uber App.	Self- developed
	SQ42	I can communicate efficiently with passengers using the Uber App.	
Perceived Organizational Support	POS1	Uber takes pride in their drivers' work.	Eisenberger et al. (1986)
	POS2	Uber really cares about their drivers' well-being.	
	POS3	Uber values their drivers' contributions to its well-being.	
	POS4	Uber strongly considers the driver's goal and values.	
	POS5	Uber shows little concern for the driver.	
	POS6	Uber is willing to help their drivers if drivers need help.	
Overall Fairness	OF1	In general, I am fairly treated by Uber	Kim & Leung (2007)
	OF2	All in all, Uber treats me fairly.	
	OF3	Overall, I believe I receive fair treatments from Uber	
Affective Commitment	AC1	I am proud to tell others I work for Uber.	Allen & Meyer (1990)
	AC2	I feel personally attached to Uber.	
	AC3	I feel a strong sense of belonging to Uber.	
	AC4	Working at Uber has a great deal of personal meaning to me.	
	AC5	I enjoy discussing Uber with people who do not work here	

Analysis and Results

To validate our measurement model and hypotheses, we used SmartPLS2.0 to perform PLS-SEM analysis. PLS-SEM technique allows for modeling multiple interdependent relationships and second-order constructs (Setia et al., 2013). It can accommodate research models that contain both formative constructs and reflective constructs (Hair et al., 2011). We performed reliability, convergent validity, discriminant validity tests for the measurement model, and analysis for the structural model.

Measurement Model Testing

For the measurement model, we assessed internal consistency reliability, convergent validity, and discriminant validity of the constructs. Reliability was evaluated by computing AVE (Average Variance Extracted) and composite reliability. A construct with an AVE value of 0.5 or higher indicates a sufficient degree of convergent validity, meaning that it explains more than half of its indicator variances (Fornell & Larcker, 1981).

Internal consistency reliability was assessed with composite reliability. Composite reliability is preferred to Cronbach's Alpha measure of internal consistency since it uses the theoretical model's item loadings (Fornell & Larcker, 1981). Nonetheless, the interpretation of the

composite reliability score and Cronbach's Alpha is the same (Memon & Rahman, 2013). According to Hair et al. (2012), composite reliability is used to replace Cronbach's alpha. Cronbach's alpha tends to provide a conservative measurement in PLS-SEM (Wong, 2013). Composite reliability exceeding a cut-off value of 0.7 indicates an acceptable level for confirmatory research (Chiu & Wang, 2008)

Convergent validity indicates the extent to which the items within the construct measure the same construct (Zheng et al., 2013). Convergent validity was evaluated by computing the loading factor for each item within the construct. Items with a loading of 0.7 or above are considered significant items. Items with loadings of less than 0.4 should be dropped, and the item with loading between 0.4 to 0.7 be reviewed and may be dropped if they do not increase value to composite reliability (Hulland, 1999). In PLS, researchers noted that the sufficient criterion to meet discriminant and convergent validity is that the items load above 0.50 on their associated first-order construct. The loading within the constructs is higher than the loading across the constructs (Wixom & Todd, 2005). With the criteria mentioned above, we reviewed and deleted four items with loadings of less than 0.6. After the deletion, the measurement model met all the proposed values for AVE, composite reliability, and convergent validity. The result of the analysis was detailed in Table 3.

Table 3 – Reliability and Convergent Validity Results

Second-order Construct	First-order Construct	Items	Outer Loading	AVE	Composite Reliability	Mean	SD
Information Quality	Completeness	IQ11	0.85	0.66	0.86	4.23	0.50
		IQ12	0.87			4.41	0.52
		IQ13	0.72			4.49	0.51
	Accuracy	IQ22	0.66	0.61	0.75	4.57	0.49
		IQ23	0.88			4.54	0.50
	Format	IQ31	0.80	0.65	0.75	4.54	0.50
		IQ32	0.81			4.61	0.50
	Currency	IQ41	0.81	0.76	0.90	4.49	0.50
		IQ42	0.91			4.44	0.51
		IQ43	0.89			4.46	0.56
System Quality	Reliability	SQ11	0.86	0.71	0.88	4.38	0.49
		SQ12	0.86			4.42	0.49
		SQ13	0.81			4.50	0.50
	Accessibility	SQ21	0.81	0.61	0.76	4.55	0.50
		SQ22	0.76			4.39	0.49
	Response Time	SQ31	0.73	0.54	0.78	4.35	0.55
		SQ32	0.78			4.56	0.51
		SQ33	0.75			4.63	0.50
	Efficiency	SQ41	0.83	0.69	0.82	4.58	0.49
		SQ42	0.84			4.59	0.49
NA	**POS**	POS2	0.65	0.58	0.83	4.26	0.48
		POS3	0.76			4.34	0.47
		POS4	0.78			4.39	0.52
		POS5	0.77			3.08	1.45
		POS6	0.66			4.53	0.50
NA	**Perceived Fairness**	OF1	0.85	0.67	0.86	4.44	0.51
		OF2	0.86			4.46	0.51
		OF3	0.74			4.49	0.51
NA	**Affective Commitment**	AC1	0.89	0.66	0.87	4.50	0.52
		AC2	0.68			2.90	1.56
		AC3	0.84			4.49	0.53
		AC4	0.82			4.50	0.51
		AC5	0.82			4.54	0.51

Note: The items dropped were IQ21, IQ33, SQ23, POS1, with loadings of 0.571, 0.523, 0.492, 0.587, respectively.

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DOI: 10.17705/1pais.14303

Discriminant validity reflects the extent to which constructs are significantly different from each other (Zheng et al., 2013). It is assessed in two ways. First, for satisfactory discriminant validity, the square root of the constructs' average variance extracted (AVE) should be greater than the correlation shared between the construct and other constructs in the model (Fornell & Larcker, 1981). Table 4 summarized the correlation matrix and square root of the AVE of our constructs. As it showed, all square roots of AVEs on the main diagonal were greater than the pairwise correlations between constructs on the off-diagonal, implying that all constructs are distinct from each other, meeting the discriminant validity requirement.

Table 4 – Correlation Matrix and Discriminant Validity Assessment

	ACS	ACU	AC	COMP	CURR	EFC	OF	FORM	POS	RLB	RT
ACS	0.78										
ACU	-0.05	0.78									
AC	0.25	0.14	0.78								
COMP	0.20	0.13	0.27	0.82							
CURR	0.10	0.00	0.14	0.16	0.87						
EFC	0.25	0.03	0.08	0.05	-0.12	0.83					
OF	0.17	0.08	0.62	0.21	0.19	0.04	0.82				
FORM	-0.01	0.38	0.18	0.08	0.08	0.03	0.19	0.80			
POS	0.32	0.17	0.52	0.31	0.14	0.12	0.52	0.23	0.71		
RLB	0.39	0.06	0.13	0.13	0.11	0.26	0.09	0.09	0.21	0.84	
RT	0.23	0.10	0.13	0.28	0.09	0.42	0.11	0.08	0.09	0.14	0.74

Note: ACS: accessibility; ACU: accuracy; AC: affective commitment; COMP: completeness; CURR: currency; EFC: efficiency; OF: overall fairness; FORM: format; POS: perceived organizational support; RLB: reliability; RT: response time

Second, we checked item cross-loading, and each item should load higher on its designated construct than other constructs. Furthermore, the cross-loading differences should be higher than the suggested threshold of 0.10 (Gefen & Straub, 2005). Our results in Table 5 show that all items loaded with satisfactory loading to their designated constructs, and the cross-loading difference requirement was also met.

Table 5 – Loadings and Cross Loading

	AC	COMP	ACU	FORM	CURR	OF	POS	RLB	ACS	RT	EFC
AC1	0.83	0.20	0.05	0.14	0.18	0.59	0.37	0.08	0.14	0.08	0.02
AC2	0.68	0.48	0.17	0.24	0.13	0.38	0.57	0.29	0.36	0.22	0.20
AC3	0.84	0.11	0.12	0.10	0.11	0.48	0.31	0.08	0.18	0.06	0.04
AC4	0.82	0.11	0.09	0.10	0.09	0.46	0.32	0.00	0.13	0.00	0.01
AC5	0.82	0.11	0.11	0.11	0.04	0.51	0.33	0.04	0.15	0.11	0.03
IQ11	0.19	0.85	0.10	0.09	0.19	0.18	0.19	0.13	0.09	0.23	-0.01
IQ12	0.31	0.87	0.15	0.06	0.14	0.21	0.32	0.11	0.22	0.21	-0.01
IQ13	0.16	0.72	0.06	0.05	0.04	0.11	0.27	0.07	0.20	0.25	0.19
IQ22	0.08	0.09	0.64	0.15	-0.01	0.00	0.06	0.10	-0.05	0.10	0.12
IQ23	0.13	0.11	0.90	0.39	0.01	0.1	0.19	0.03	-0.03	0.06	-0.03
IQ31	0.17	0.08	0.35	0.8	0.03	0.11	0.23	0.04	-0.03	-0.05	-0.02
IQ32	0.12	0.05	0.26	0.81	0.10	0.18	0.14	0.11	0.02	0.18	0.06
IQ41	0.05	0.00	0.09	0.13	0.81	0.10	0.10	0.10	0.06	-0.06	-0.15
IQ42	0.17	0.15	-0.01	0.04	0.91	0.21	0.14	0.07	0.09	0.05	-0.09

Table 5 – Loadings and Cross Loading

	AC	COMP	ACU	FORM	CURR	OF	POS	RLB	ACS	RT	EFC
IQ43	0.14	0.24	-0.05	0.05	0.89	0.17	0.11	0.13	0.11	0.20	-0.07
OF1	0.42	0.10	0.07	0.16	0.19	0.85	0.43	0.03	0.08	0.06	0.00
OF2	0.53	0.16	0.09	0.18	0.13	0.86	0.36	0.09	0.10	0.13	0.01
OF3	0.55	0.23	0.04	0.12	0.14	0.74	0.46	0.09	0.21	0.08	0.09
POS2	0.25	0.31	0.13	0.17	0.12	0.28	0.65	0.09	0.08	0.03	0.01
POS3	0.28	0.10	0.15	0.18	0.03	0.30	0.72	0.12	0.14	-0.03	0.08
POS4	0.30	0.13	0.09	0.14	0.06	0.34	0.73	0.12	0.21	0.10	0.12
POS5	0.48	0.34	0.17	0.22	0.11	0.34	0.77	0.30	0.35	0.11	0.18
POS6	0.44	0.15	0.07	0.08	0.14	0.54	0.66	0.04	0.26	0.06	0.00
SQ11	0.15	0.08	0.13	0.15	0.17	0.14	0.20	0.86	0.31	0.18	0.24
SQ12	0.1	0.14	0.02	0.06	0.11	0.05	0.18	0.86	0.34	0.08	0.19
SQ13	0.07	0.12	0.02	0.02	0.00	0.04	0.15	0.81	0.35	0.11	0.21
SQ21	0.13	0.04	-0.06	0.00	0.03	0.04	0.20	0.39	0.81	0.09	0.23
SQ22	0.27	0.29	-0.01	-0.01	0.13	0.23	0.31	0.22	0.76	0.29	0.17
SQ31	0.10	0.25	0.00	0.05	0.12	0.11	-0.01	0.11	0.19	0.66	0.14
SQ32	0.08	0.15	0.13	0.09	0.07	0.11	0.08	0.06	0.18	0.79	0.25
SQ33	0.10	0.21	0.08	0.04	0.01	0.04	0.11	0.14	0.14	0.75	0.49
SQ41	0.05	0.05	0.02	0.01	-0.09	-0.02	0.06	0.21	0.19	0.35	0.82
SQ42	0.09	0.04	0.03	0.03	-0.10	0.09	0.15	0.21	0.23	0.35	0.84

Note: ACS: accessibility; ACU: accuracy; AC: affective commitment; COMP: completeness; CURR: currency; EFC: efficiency; OF: overall fairness; FORM: format; POS: perceived organizational support; RLB: reliability; RT: response time

Structural Model Testing

The structural model was evaluated by examining the path coefficients (β) using SmartPLS 2.0 software. We used PLS because PLS is recommended for analyzing large and complex models, and models with formative constructs (Chin, 2010). PLS has the advantage in analyzing formative constructs over covariance-based techniques by avoiding problems related to identification, constraining structural parameters, and underrepresenting the variance of the underlying constructs (Addas & Pinsonneault, 2018; Temme et al., 2014; Lee & Cadogan, 2013). We modeled our second-order formative constructs following Lowry and Gaskin (2014). We further validated the formative constructs by examining the outer weights and Variance inflation factor (VIF) following Hair and Hult (2016). We first confirmed if the outer weights of all the formative items were significant. All items achieved a significant outer weight at the 0.05 p value. Multicollinearity is a critical issue for formative constructs since it may affect the weights and thus impact the whole outcome (Hair & Hult, 2016). The VIF statistics for both our formative constructs, system quality and information quality items ranged from 1.09 to 2.80, all within the range of below 3 as suggested by prior literature (Hair & Hult, 2016).

Two-tailed tests were performed on all hypotheses. All hypotheses, except for H2b, are supported at $p < 0.001$ level. Specifically, information quality was positively related to perceived organization support (H1a: $\beta = 0.301$, $t = 4.674$). Information quality was positively related to perceived fairness (H2a: $\beta = 0.271$, $t = 4.365$). System quality was positively associated with perceived organizational support (H1b: $\beta = 0.211$, $t = 3.155$). System quality, however, was not related to overall fairness (H2b: $\beta = 0.090$, $t = 1.388$). Thus, H2b was not supported. Perceived organizational support positively related to affective commitment (H3: β

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DOI: 10.17705/1pais.14303

= 0.275, t = 4.249); therefore, H3 was supported. The last hypothesis, overall fairness, positively affected affective commitment (H4: β = 0.493, t = 8.667). Overall, the model accounted for approximately 16.3% of the variance in perceived organizational support, 9.2% in overall fairness, and 45.0% in affective commitment. None of the control variables turned out to be significant. The results were summarized in Table 6 and Figure 2 below.

Table 6 – Summary of Hypotheses Testing

Hypothesis	Path	Path Coefficients β	T-Statistics	Supported
H1a	Information Quality → Organizational Support	0.30***	4.67	Yes
H2a	Information Quality →Fairness	0.27***	4.37	Yes
H1b	System Quality → Organizational Support	0.21***	3.16	Yes
H2b	System Quality →Fairness	0.09^{NS}	1.39	No
H3	Organizational Support → Affective Commitment	0.28***	4.25	Yes
H4	Fairness → Affective Commitment	0.49***	8.67	Yes

*Note: ***p < 0.001, NS: Not significant*

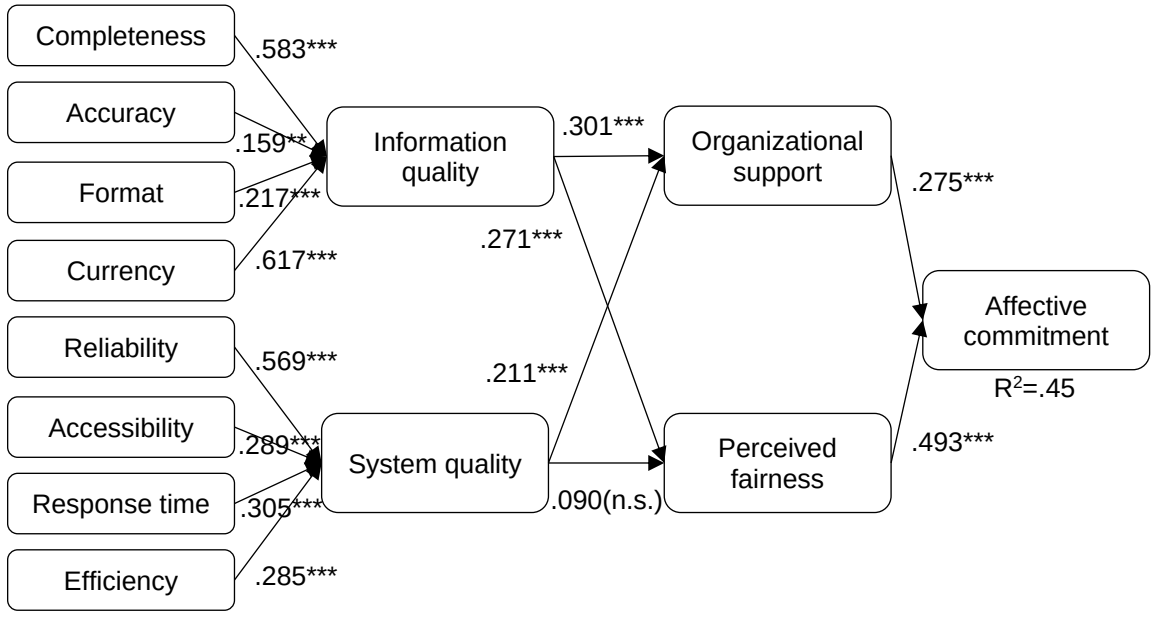

Figure 2 – Result

Mediation Testing

We used the Sobel test to examine the indirect effects of information systems quality on affective commitment and summarized the results in Table 7 (Tallon & Pinsonneault, 2011). As the table indicates, there were significant direct relationships between information and system quality dimensions and affective commitment. The relationships were partially mediated when perceived organization support was added to mediate the relationship between information quality and system quality to affective commitment, as path coefficients in the mediated model are still significant. Similarly, the result of perceived fairness mediation between the quality of information on commitment is also partially mediated. However, the relationship was completely mediated when perceived fairness was added to mediate the relationship between system quality and affective commitment. The path coefficient in the mediated model became insignificant.

Table 7 – The Significance of Mediation Effects				
Mediation	**Direct Model (without mediation)**	**Direct Model (with mediation)**	**Sobel Test Statistic**	**Mediating Effect**
Information Quality → Organizational Support → Affective Commitment	0.36	0.18	5.69***	Partially mediated
System Quality →Organizational Support → Affective Commitment	0.296	0.10	4.51***	Partially mediated
Information Quality → Fairness → Affective Commitment	0.36	0.11	4.29***	Partially mediated
System Quality → Fairness →Affective Commitment	0.296	0.09	2.19*	Completely mediated

*Note: ***p < 0.001, **p < 0.01, *p < 0.05*

Conclusion

Discussion of Results

The rise of the gig economy has drastically changed how millions of people work and live. However, there are many unanswered questions about gig workers. How do they perceive their work from an organizational perspective? What drives their perceptions and emotional connections to the organization from a technology perspective? We try to find some of the answers with this research. While algorithmic management is at the center of the gig economy, we extended the IS success model to see how gig workers' perception of the platform affects their perception of the gig company's fairness and support, which further impacts their affective commitment. We used the social exchange theory to explain the underlying mechanism of all our hypothesized relationships. We surveyed Uber drivers in Indonesia to test our model. All our hypotheses were supported except one (H2b). Below we briefly discuss our findings.

For Uber drivers, information quality consisted of completeness, accuracy, format, and currency, while efficiency, reliability, accessibility, and response time were components of system quality. Although these findings were consistent with prior research (Nelson et al., 2005), they offered new insights into the gig worker context. Currency and completeness were the two most important dimensions to information quality, bearing the highest weights, whereas reliability and response time were the leading dimensions for system quality. Therefore, for Uber drivers to improve their perception of system and information quality, these dimensions should be prioritized. Information quality and system quality, in turn, were positively related to perceived organizational support (H1a and H1b), indicating that Uber drivers perceive a well-designed APP with quality data to be an essential form of support from Uber.

Information quality is positively associated with perceived fairness (H2a), indicating that Uber's drivers feel being fairly treated when they obtained the information or data in accordance with the quality they expected. System quality, however, was not significantly related to perceived fairness (H2b). One possibility is that there were other more salient factors contributing to perceived fairness than system quality. Our observation and interaction with drivers revealed that they tended to complain about the high percentage of income they had to pay Uber as commissions rather than the Uber app's system quality. Therefore, it is likely that system quality does not have a large enough influence on perceived fairness when there are other more important factors.

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Perceived organizational support had a significant effect on affective commitment (H3). It is in line with findings in previous studies. Perceived organizational support increases affective commitment by fulfilling such socioemotional needs as affiliation and emotional support (Eisenberger et al., 1986). Greater perceived organizational support is expected to result in greater affective attachment and feelings (Allen et al., 2003).

Perceived fairness is significantly related to affective commitment (H4). This relationship implies drivers would have a higher affective commitment toward Uber when they feel fairly treated by Uber. Fairness reinforces the emotional bond to the group or the organization (Tyler & Lind, 1992). In the Uber context, even though there is little or no human interaction, by providing drivers with dignified, fair treatment, they can develop an emotional bond and commitment to the organization.

Theoretical Implications

We make several contributions to extant literature. First, this research contributes to the literature on the gig economy by examining the gig economy from a worker's affective commitment perspective. Commitment predicts a range of important job outcomes, and has been identified as one of the most pressing challenges for the gig economy (Liu et al., 2020). Such research is needed to understand the work experiences in the gig economy, shape public policy, and help organizational researchers remain relevant in the changing world of work (Keith et al., 2020). Sharing platforms consistently argue, and communicate to the public and the workers, that gig workers are self-employed, rather than in an employer-employee relationship (Kaltner, 2018), thus it may be expected that gig workers should have little commitment to the organization. However, our results indicate that gig workers, despite the transactional nature of work, do develop an affective commitment to organizations, echoing prior research that gig workers can develop organizational identification (Rockmann & Ballinger, 2017). This contra-intuitive finding may provide insights on how to treat gig workers and improve their performances.

Second, while in traditional work environments employees develop social exchange with the organization via interaction with their managers, gig organizations deploy advanced digital technologies, instead of human supervisors, to control their freelance workforce. We examined how the socio-technical artifacts generated through platform interactions change both the scope and the nature of the social exchange between employees and organizations, as interactions previously observed socially are now addressed through human/platform/algorithm interaction (Möhlmann & Henfridsson, 2019). Our results indicate that social exchange in the sharing economy goes beyond interpersonal interaction to include social-technical interaction. This echos what has been observed in the media equation theory, that claims people tend to assign human characteristics to computers and treat them as if they were real social actors (Reeves & Nass, 1996). In the gig economy, people develop social exchange with the platform App, developing commitment with resources in forms of information quality, system quality and organization support. The results confirmed that information quality and system quality as valuable resources in the social exchange with the gig company, and both contributed to perceived organization support and fairness. This is in contrast to the duality of algorithm control identified in prior literature (Möhlmann & Henfridsson, 2019; Möhlmann & Zalmanson, 2017; Vallas & Schor, 2020), and points to possible ways to alleviate the negative impact of algorithm control. This usurpation of social exchange through socio-technical interaction provides an interesting and robust contribution to the literature[1].

Third, we propose and validate a model of IS success factors in the gig economy and advance our theoretical understanding of gig economy workers by focusing on the technology platform's characteristics and gig workers' responses. Our model bridge IS success and

[1]We thank an anonymous reviewer for providing this insight.

organizational behavior research, enriching the IS success literature by expanding its application to organization behavior research. In addition, we theorized and validated organizational support and fairness as mediators. In doing so, we enhance our understanding of how IT artifacts impact worker perceptions and responses by describing the process of its influence, which has been lacking in prior research.

Finally, we proposed and tested the dimensions of information quality and system quality in the gig economy context. The on-demand, quickly changing nature of the gig economy differs from a traditional organization and demands different priorities regarding information quality and system quality. In response to the gig economy's unique features, information needs to be first current and complete, whereas systems should prioritize reliability and response time.

Practical Implications

This research offers several practical implications for managers in the gig economy. First, based on the research results, currency is the most prominent dimension in perceiving information quality. Therefore, updated data is the most valued characteristic for gig workers. Managers should prioritize the currency of data in their platform, ensuring that the data is up-to-date and without delay. One way to do that is by setting automatic updates for the data being used. Depending on different business needs, the intervals for updates may differ, but whatever the requirement is, companies must ensure that it is implemented as a first priority.

Second, reliability is the most critical dimension in terms of system quality. One could imagine what would happen if an Uber driver uses the app to communicate with a customer, and the app crashes. Therefore, managers should stress the importance of reliability in system development and explicitly set reliability goals, such as the percentage of uptime, and incorporate them in system requirements. By doing so, we fulfill the expectations of gig workers and provide them a system that could maximize their satisfaction.

Third, in the gig economy, although each job is transactional and temporal, providing support and creating a sense of fairness for gig workers can enhance their affective commitment. Our study suggests managers can leverage the technology platform, such as the Uber app, as an intermediary for gig worker engagement, a form of support, and a way of fair treatment. Managers may consider providing some interactive feature that enables feedback and communication between gig workers and the organization to enhance their commitment to the organization

Limitation and Future Research

This research has several limitations, which provide some directions for future research. First, our sample is limited to Uber drivers in a single city via non-probabilistic sampling. Therefore, the sample's generalizability to other types of gig work and areas outside of Southeast Asia may be limited. Future research could tap into other types of gig workers in different geographic locations and cultures. Second, this research only focused on two aspects of employee perceptions (perceived organizational support and perceived fairness) and individual outcomes (affective commitment). Therefore, it would be interesting to explore other vital constructs, such as performance and satisfaction and how they are formed and shaped in the gig economy. Finally, we used PLS with the second-order formative construct model for information and system quality, which lacks adequate and accurate measures of model fit. Future research could take extra measures of overall information and system quality, and validate the second-order formative constructs via redundancy analysis.

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DOI: 10.17705/1pais.14303

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