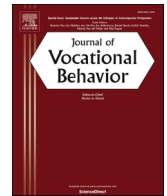




Contents lists available at ScienceDirect

Journal of Vocational Behavior

journal homepage: www.elsevier.com/locate/jvbSteering wheels to make ends meet: Understanding stressors and coping strategies among app-based taxi drivers in Tehran[☆]Mina Beigi^{a,*}, Shahrzad Nayyeri^b, Melika Shirmohammadi^c^a Southampton Business School, University of Southampton, 12 University Road, Highfield Campus, Southampton SO17 1BJ, UK^b Management and Technology Expansion Studies Center, Tarbiat Modares University, Jalal AleAhmad, Nasr, Tehran 14115-111, Iran^c Human Development and Consumer Sciences, University of Houston, 4235 Cameron Bldg, Room 227A, Houston, TX 77204-6020, USA

ARTICLE INFO

Keywords:

Coping
Stress
Context
Gig worker
App-based driver
Taxi driver
Tehran
Iran

ABSTRACT

Management scholars' understanding of occupational stress and coping is predominantly based on experiences of workers in standard employment relationships with organizations. Interviewing 64 app-based taxi drivers in Tehran, we examined stressors and coping strategies embedded in a growing occupational context—low-skilled app-based jobs—in an understudied non-Western developing Islamic country. Our findings revealed six stressors embedded in our participants' occupational and country contexts. The drivers coped with these stressors with six strategies that comprised (a) hiding their job, (b) adjusting at work, (c) rationalizing, (d) self-sacrificing, (e) trusting God, and (f) looking for another job. Our paper responds to the call for contextual and international perspectives in careers research, and informs career scholars and practitioners interested in examining and addressing the needs of similar groups of workers in similar occupational and country contexts.

1. Introduction

Amir began to work as an app-based taxi driver in Tehran when he was laid off from his work as an accountant, due to the country's economic downturns. Failing to find another salaried job, Amir considered signing up as a driver on an app-based taxi platform because it was readily available, and he could afford the required access to a car and smartphone. At first, he was reluctant, because he worried about how his extended family, neighbors, or colleagues from his previous job would react if they booked a ride with him or learned about his job. Being his household's breadwinner, despite worries about his reputation, Amir kept working long hours, accepting as many rides as possible to maximize his earnings. Even though driving provided an income, Amir had to deal with a significant amount of daily stress, which negatively impacted his well-being. What stressors did he experience in the specific context in which he navigated as an app worker? How did he cope with those stressors to continue working? This study addresses these questions as it seeks to unpack the stressors and coping strategies of app-based taxi drivers like Amir, who navigate a growing occupational context—low-skilled app-based work in a developing country.

Management scholars' understanding of stress and coping is predominantly based on the experiences of workers holding standard employment relationships with organizations (e.g., [Sonnentag, 2015](#)). In the context of app-based jobs, because digital algorithms replace many supervisory functions, app workers are often left to their own devices to manage their experience, which means they

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<https://doi.org/10.1016/j.jvb.2022.103782>

Received 1 April 2021; Received in revised form 8 August 2022; Accepted 27 August 2022

Available online 31 August 2022

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need to deal with clients on their own, protect themselves from danger, and manage any other difficulties (e.g., Duggan et al., 2020). Quantitative and qualitative studies have shown that experiences of app workers are not easily compared to those of employees in standard employment relationships or full-time workers (e.g., Gray & Suri, 2019; Manriquez, 2019; Pesole et al., 2018; Rosenblat, 2018). App work represents a distinctive form of economic activity, influenced by open employment relations or independent contracts that reduce personnel selection criteria and offer workers autonomy over when and how often they work (Vallas & Schor, 2020). As a result, app workers constantly face pressure to secure jobs, compete for bids on platforms, and cope with high levels of uncertainty and low levels of access to income and benefits (Schor et al., 2020).

The stress and coping perspectives predominant in the literature address workplace dynamics, such as job demands and resources, and co-worker and supervisor relationships (e.g., Inceoglu et al., 2018; Nielsen et al., 2017; Sonnentag, 2015), which bypass the stressful situations experienced by independent contractors working outside workplace boundaries. The few studies that have examined app workers have focused on challenges such as power dynamics, lack of voice, and control embedded in the platform organizations' context (e.g., Kougianou & Mendonça, 2021; Wood et al., 2018). Little is known about socially embedded stressors that low-skilled app workers may face due to the nature of their work. To bridge this gap, we borrow from social stress theory¹ (Aneshensel, 1992; Pearlin, 1989), which elucidates the role of individuals' social context on their stress and coping.

There is also a dearth of knowledge about how low-skilled app workers cope with their work stressors, given the limited resources available to them. Extant management literature suggests that coping outcomes depend on job resources (i.e., physical, psychological, social, or organizational aspects of the job that help to either achieve work goals or reduce job demands) and personal resources (i.e., individual factors that help workers master their environment and achieve their goals) (e.g., Inceoglu et al., 2018; Nielsen et al., 2017; Sonnentag, 2015). The few studies that have examined app workers' stress primarily present coping as a set of active responses that require tapping into personal and social resources, such as finances (Chafe & Kaida, 2019), personal agency (Anwar & Graham, 2019), and social capital and networks (Kougianou & Mendonça, 2021), which may not be an option for low-skilled app workers. By exploring the coping strategies that emerge in the context of app-based taxi drivers, we extend our understanding of coping strategies applicable to vulnerable workers with limited resources in the absence of organizational support (Restubog et al., 2021).

Our qualitative study focuses on stressors and coping strategies among 64 app-based taxi drivers in Tehran, Iran, which responds to the call for contextual and international perspectives on careers research by drawing attention to the effects of occupation and country context on app work (Spurk, 2021). We use the term *stressor* to refer to experiences an individual perceives as taxing or exceeding resources (Taylor & Stanton, 2007). *Coping strategies* are efforts to manage, master, minimize, reduce, or tolerate the demands created by stressful experiences (Taylor & Stanton, 2007). By emphasizing context, we enable a better understanding of how app-based workers' experiences are socially and culturally determined (Härtel & O'Connor, 2014). As independent contractors, app workers have minimal access to organizational structures and are susceptible to direct effects from broad contexts, such as the economy and culture in the country where they live. Our work unfolds in a country that exemplifies a non-Western, developing, and Islamic context. Except for a limited number of studies that have focused on app work in East Asia (Wood et al., 2018), most of the existing research has been conducted in developed Western countries (e.g., Chafe & Kaida, 2019; Tassinari & Maccarrone, 2019; Veen et al., 2019). The existing discourse centers on how digital platforms have created new employment opportunities for informal workers in non-Western developing countries (e.g., Rani & Furrer, 2021). In comparison, studies in Western developed countries emphasize the issues of voice, power, and possibilities of collective action for app workers, as well as legal and regulatory struggles over workers' rights (e.g., Caza et al., 2021). Still, non-Western app workers' challenges and ways they overcome them are left relatively unattended.

This study contributes to careers literature in various ways. Adopting a social stress theory lens, which describes the explanatory pathway from stressful work experiences to well-being (Boyd et al., 2009; Thoits, 1995), we identify the stressors and coping strategies that enable app workers to mitigate their stress and navigate their work. Our findings can inform career scholars and practitioners interested in examining and addressing the needs of similar groups of workers in similar occupational and country contexts.

2. Literature review

2.1. What is app work?

App work refers to work performed for customers by workers through digital platforms managed and maintained by a service-providing organization (De Stefano, 2015). Scholars have categorized different types of app work based on skill levels, nature of the work, kind of service offered, delivery mode (digital or physical), and local or global dispersion (Vallas & Schor, 2020). Recognizing different categorizations of app work and their overlaps, we refer to two occupational categories of app work relevant to our study. The first is low-skilled app work, which includes online and offline tasks and activities that generally require less training and experience than the work conducted by skilled app workers. Low-skilled app work includes work arranged via apps but generally performed physically, such as driving, home repair, food delivery, and care work, as well as low-skilled microtasks performed online, such as describing images or transcribing audio files (Vallas & Schor, 2020). The second category is skilled app work, including workers who offer professional services, such as cloud-based consultants, freelancers, and technologists. These categories of app work

¹ It is noteworthy to mention that we adopted social stress theory (Aneshensel, 1992; Pearlin, 1989) upon analyzing our data. We reviewed the existing stress process theories (e.g., Avison et al., 2009) and found social stress theory most compatible with the emergent categories in our findings. Adopting the social stress theory accommodated "theory data alignment"—where the theoretical framework fits the data—recommended in qualitative research (Köhler, 2016, p. 411; Pratt, 2009, p. 860).

as an occupation need to be treated with caution since app work may change as algorithmic designs, digital organizations, and markets change over time (Vallas & Schor, 2020).

Regardless of being low-skilled or skilled, common representations of app work assume that, because of its flexibility, app work offers employees valuable job resources, such as high levels of autonomy and control in handling the schedule and location of work, which could be linked to less stress and increased well-being (e.g., Lehdonvirta, 2018). However, research suggests that app work, because it is managed by algorithms instead of humans, limits not only workers' control over their schedule, but also their voice and power (Caza et al., 2021; Galière, 2020; Gegenhuber et al., 2020; Kougianou & Mendonça, 2021). Research has also reported poor work conditions in the absence of an organizational partner to advocate for workers' needs, such as the absence of safety nets (including sick pay or adequate injury insurance), work intensification (Tassinari & Maccarrone, 2019), and little social protection (Schoukens et al., 2018). It is plausible to assume that the challenges associated with app work will lead to strain and consequently to poor mental health.

2.2. What are stressors and coping strategies?

The predominant stress and coping perspectives in the management literature have focused on job-related factors (i.e., job stressors, job resources, and colleague and supervisor relationships) as key predictors of employee stress and well-being (e.g., Inceoglu et al., 2018; Nielsen et al., 2017; Sonnentag, 2015). Job stressors are features of the work situation that potentially elicit physiological and psychological strain reactions (Sonnentag, 2015). Research suggests that job stressors, such as job demands, workload, and responsibilities have a predominantly challenging nature, while other stressors, such as workplace constraints and work role ambiguity, predominantly hinder task accomplishment (Lepine et al., 2005). Job resources are physical, psychological, organizational, or social aspects of the job that help workers to either achieve work goals and reduce job demands and the associated physiological and psychological costs, or to stimulate personal growth, learning, and development (Bakker & Demerouti, 2017). Typical job resources are autonomy or job control, feedback, and task variety, as well as opportunities for learning and development. Social support is among the resources that are most often assumed to play a helpful role in addressing demands at work, and much of the existing research evidence supports that assumption (Chao, 2011).

Employees in standard employment relationships with organizations can access physical, psychological, and social resources, as well as initiatives such as workplace health promotion and wellness programs that can help them cope with stress. These resources have been found helpful in enhancing job and personal resources for employees (Tetrick & Winslow, 2015). Personal resources and coping strategies become especially important for workers who function outside formal organizations and have limited access to organizational resources. Since app work is an emergent type of work, how workers cope with their context-induced stressors is a new and evolving area of inquiry. The few studies that have touched on this topic suggest that app workers rely on self-initiated actions and use their agentic resources to deal with the difficulties of being managed and controlled by algorithms. For example, resisting algorithmic management included maximizing their earnings, ignoring platform controls, working towards self-imposed targets, blurring work and play, and reworking where and how to wait (Veen et al., 2019). Other active expressions of coping include community bonds and protests (Panteli et al., 2020), exploring new trajectories and modes of voice to influence working conditions (Kougianou & Mendonça, 2021), and direct appeals, balancing, exit intention, unveiling platform interests, identifying alternative possibilities, and fostering resistant solidarity (Shanahan & Smith, 2021). We contextualize coping strategies by unpacking how our participants cope with their occupational and country context stressors on a daily basis.

2.3. What role can country and occupational contexts play?

Our understanding of app work is relatively context-neutral, where the role of the broader country and occupational contexts have been left unexamined. When Uber was introduced in the United States in 2010, other countries initiated similar services, such as DiDi in China and OlaCabs in India (Bond, 2014; Carson, 2018); however, studies of workers treat all digital platforms the same, focusing on the ubiquity of mobile devices to connect workers and customers independently of organizations (Manyika et al., 2016). Also, performing app work on digital platforms, such as Upwork, Uber, and Airbnb, tends to follow near-universal functions, such as joining, moving through, and leaving the platform, because those functions are facilitated by artificial intelligence through mobile device and smartphone software programs designed to perform these functions for the user (Dickinson et al., 2014). At first glance, one might assume that app work experiences are universal due to their dependence on similar technologies. However, as we discuss below, country, and occupational contexts play an important role in how app work is perceived and performed.

2.4. Country context

While it may seem that app-facilitated work should be relatively immune to country influences, perceptions of it as an occupation, its social status, and its classification are susceptible to social construction and contextual contingencies. Also, the standards by which work is judged vary depending on values, beliefs, technologies, and economies, which function uniquely in every country (Ollier-Malaterre & Foucreault, 2017). For example, the discourse in Western developed countries involves wide-scale protests, debates, and legal actions pressuring platform organizations to improve transparency and acknowledge workers' rights (De Stefano, 2017; Schoukens et al., 2018). Also, studies reflect cultural acceptance of bottom-up strategies for drivers to improve their working conditions by business planning, leveraging competition between platforms, and using social media to voice their concerns (Woodside et al., 2021). While the existing studies argue that the distinctive features of digital platforms (i.e., the use of platforms to assign,

monitor, and evaluate work) have created access to tasks, compensation, and flexible work arrangements for workers in developing countries (Rani & Furrer, 2021), the challenges faced and coping strategies used by app workers performing low-skilled work in developing countries have received less attention. When conducting research in the Middle Eastern countries characterized as Muslim dominant, as in our case, the Islamic context can be expected to influence coping strategies used by individuals navigating that context. Research examining life adversities has shown that Muslims and Christians adopted different coping strategies when facing comparable scenarios. Fischer et al. (2010) found that Muslims tended to adopt interpersonal and collective coping strategies (e.g., seeking social support or reaching out to family members), while Christians preferred to engage in intrapersonal and individualistic coping (e.g., cognitive restructuring or reframing the event). The value of these findings notwithstanding, they only explain coping with general life stressors, rather than coping with contextual stressors specific to a country or an occupation.

2.5. Occupational context

Low-skilled workers hold occupations that require little or no formal education to perform their tasks (Fernández-Reino et al., 2020). These occupations are typically characterized as highly routinized with fixed production or service hours, and therefore, limited in task variety and schedule autonomy. Research shows that low-skilled occupations are often physically and psychologically demanding, where job-holders tend to work in isolated workstations with limited social support (Beblavý et al., 2016). Individuals working in low-skilled occupations have been found to experience adverse outcomes, such as strain, fatigue, or low job satisfaction (Appelbaum et al., 2003; Gruenberg, 1980; Jason et al., 1995), and they tend to be stigmatized to varying degrees (Bosmans et al., 2016). The existing knowledge has been generated based on the experiences of workers performing typical low-skilled jobs, such as assemblers or machine operators (Wilmot & Ones, 2021). This knowledge may not apply to emerging types of work, such as low-skilled app work, that have not yet been indexed by occupational standard sources, and their associated tasks, contexts, and job activities have not been examined.

2.6. How can social stress theory contribute?

Our study is informed by social stress theory (Aneshensel, 1992; Pearlin, 1989), which enables us to explain the stressful work experiences of low-skilled app workers in relation to their country and occupational context. Social stress theory suggests that the sources of people's difficulties—the stresses and strains of everyday life—arise out of the social conditions in which they live (Aneshensel & Avison, 2015; Pearlin, 1989). Research building on the theory has expanded this notion and has shown that individuals with low social status are exposed to more stressful situations and have fewer resources to cope with stressors than those of high social standing (Aneshensel, 1992). To date, studies have portrayed the challenges low-skilled app workers, such as participants in our study, face (e.g., precarious work conditions and income insecurity), which potentially position them in a low social standing. Also, research has found that in specific cultural contexts, low-skilled workers are susceptible to social stigma (Bosmans et al., 2016). Therefore, informed by social stress theory and research, it is reasonable to assume that performing low-skilled app work in a non-Western, developing, and Islamic context may lead to stress and other adverse outcomes.

Many studies have adopted social stress theory to explain the mental health disparities (i.e., excessive disease or negative mental health outcomes among disadvantaged in comparison with advantaged social groups) observed among minorities, drawing attention to the role of social stressors, such as prejudice, discrimination, and socioeconomic status (Schwartz & Meyer, 2010). Researchers adopting this theoretical lens have predominantly examined the relationship between social factors and well-being in medical disciplines (Horwitz, 2007) by arguing that a disadvantaged position in the social status leads to an increase in exposure to stress and adverse outcomes (Thoits, 1995; Wheaton, 1999). Social stress theory and research have consistently shown that the effects of stressful experiences can be exasperated for social groups with limited resources (e.g., low socioeconomic and minorities) (Turner, 2009). However, research regarding coping strategies has been less consistent, suggesting that the use and effectiveness of coping strategies to relieve stress depends on the context and the nature of the problem confronted (Meyer et al., 2008; Turner, 2009). Our study contextualizes coping strategies by unpacking how our participants dealt with context-induced stressors. In doing so, we agree with and provide empirical evidence for discussions that argue for identifying and understanding coping strategies in the specific context that creates the stress (Clark et al., 2014; Erera-Weatherley, 1996; Oakland & Ostell, 1996).

3. Methods

3.1. Methodology

We used a qualitative interpretive approach in which we followed the tenets of social constructivist epistemology. This lens posits that meaning is constructed via interactions among humans, and multiple realities are generated by different individuals as a result of their different interactions with the same social phenomenon (Crotty, 1998). A qualitative research design emphasizes studying a phenomenon in its natural setting and understanding it in terms of the meaning people attribute to it (Denzin & Lincoln, 2011). A social constructivist approach encourages the qualitative researcher to theorize in the interpretive tradition, which aims to “conceptualize the studied phenomenon to understand it in abstract terms” (Charmaz, 2006, p. 127).

3.2. Our study's country and occupational context

We conducted our research in Iran, located in the Middle East, with a population of 85,028,759 million (World Population Review, 2021a) — 99.4 % of whom are Muslim (World Population Review, 2021b) — and an Islamic government that has been in place since the 1979 revolution in Iran. Traditional family roles are still prevalent, practiced in many households, and reinforced by the dominant religion. However, the country is transitioning from traditional to modern (Gheissari, 2009); in this transition, more women enter universities (Bahramitash & Hooglund, 2011) and the workforce (Bahramitash & Salehi Esfahani, 2009), and the rate of dual-worker families is increasing (Karimi, 2009). Technological developments, such as a surge of local 3G and 4G providers, have led to a significant increase in the number of internet users (Radcliffe, 2017) and to the growth of digital platforms and new online services (Salamzadeh et al., 2017). One area that has evolved quickly is app-based transportation, where Uber-like apps are used by people living in major cities, especially in the capital, Tehran (Radcliffe, 2017).

Our study took place at a time that shared economy, facilitated by technology advancements, was being recognized in a labor market that was experiencing surplus due to a variety of causes, including country-wide economic pressures and international economic sanctions against Iran.² The labor surplus encompassed university graduates with a degree, those who were laid off or whose employers had gone bankrupt, those who were forced to hold a second job, and homemakers who had to work to help the family economy. Insecurity, unpredictability, health and safety risks, and lack of protection is the reality for many drivers around the world (Rodgers & Rodgers, 1989). However, Iran's economic status, partially caused by the sanctions against Iran³ and the national currency's decline against the United States dollar, has led to a sharp increase in car prices and maintenance costs,⁴ which adds an extra layer of pressure for drivers.

3.3. Participants and research interviews

Our participants were 64 drivers (53 % women), with an average of 19 months of driver experience, who worked for a minimum of 20 h weekly in Tehran, the capital city of Iran. Fifty-nine percent of our participants were married, with no (13 %), one (29 %), two (53 %), or three or more (5 %) children. Forty-five percent of the participants had a high school diploma, 37.5 % had an associate or bachelor's degree, and 8 % had a master's degree (see Appendix 1 for participants' demographic information).

We collected data using semi-structured interviews conducted in the participants' vehicles, except for one interview that took place in a coffee shop, and one interview that occurred in a participant's home during daytime. We reserved each trip via the taxi company app and asked the driver not to initiate the ride. We debriefed the drivers about our study, and, upon their agreement to participate and after signing the consent form, we proceeded with the interview. Interviews were conducted in Farsi, were recorded with the participants' permission, and lasted for an average of 56 min. Upon completion of each interview, interviewees were compensated with a gift card equivalent to their earnings for 90–120 min of driving. We continued data collection until we reached saturation—a point where we found no new information in the setting (Hesse-Biber & Leavy, 2010; Patton, 2002).

Our interview questions (appendix 2) focused on five themes, including (a) participants' personal and professional background; (b) their typical workday schedules and experiences; (c) the pros, cons, and critical incidents experienced in the job; (d) how participants navigated their professional and personal domains; and (e) how they managed them.

3.4. Interview data organization and analysis

The idea for this research arose as we were examining the career trajectories of women drivers in a different project (Beigi et al., 2020)⁵. During open coding and initial data analysis for the previous project, we encountered repetitive examples centered on multiple stressors and coping strategies that seemed unique and interesting, but were not directly relevant to that project's research focus. After finalizing the first project, we looked into the stress literature and found that our informants' stressors were heavily context-based. Thus, we undertook subsequent data collection to include both men and women drivers (Charmaz, 2006; Merriam, 2009; Suddaby, 2006) and to make sense of our initial observations. In the 30 additional interviews, we included the same questions as the first set of interviews, as well as questions about the work stressors that impacted our participants' work and nonwork domains. All 64 interviews

² The United States and European governments have worked together over the past few decades (starting in 1979) to impose various economic sanctions on Iran. The most recent wave of sanctions started in 2006 (Columbia, 2017).

³ During September 2019, the US government imposed new sanctions against Iran's national bank, which escalated the economic pressures on different industries (Sullivan, 2019).

⁴ A full-time app-based taxi driver can earn up to 8 million Tomans per month in Tehran (KhabarOnline, 2020), which is equivalent to \$283.20. The cheapest entry-level car named Kia Pride costs \$4708 in Iran (EghtesadOnline, 2021). Annual taxi insurance premiums in Iran are almost \$104.50 (donya-e-eghtesad, 2021). This amount does not cover natural disasters, vehicle accessories, and the personal belongings inside the vehicle. Also, this amount does not cover repair costs when the driver is at fault. If taxi drivers want to purchase insurance to cover these costs, they need to buy collision and comprehensive insurance, which covers the cost of a vehicle's damage if the driver hits an object or another car, and covers limited non-crash damage, such as weather, fire damage, and car theft. Annual taxi collision and comprehensive insurance premiums in Iran for the cheapest entry-level car cost \$53 (Bimito, n.d.). The average price of an oil and filter change is almost \$13 (Hamrah mechanic, n.d.). App-based taxi drivers may be looking at changing the oil as often as every month. Although the company reimburses half of the cost of gas for these drivers (Drivers club, n.d.), only filling the car tank costs \$2 per day.

⁵ This citation was blinded during the peer-review process.

were used in this project.

Interviews were transcribed verbatim (1214 pages of text; font-size 12; single-spaced). We used Excel software to analyze our data due to the incompatibility of available qualitative data analysis software with the Farsi language. We applied steps of constructive grounded theory (Charmaz, 2006, 2014) and constant comparative methods (Lincoln & Guba, 1985) to the data analysis. We undertook several steps that were not distinct from one another, but we present them distinctly for clarity. To ensure reliability and consistency, at least two authors engaged in all steps of the coding and analysis described below.

3.4.1. Step 1

We started the data analysis process by focused coding, which directed our analysis to pinpoint and develop categories related to our participants' stressors and their associated coping strategies. Focused coding means using the most frequent codes to sift through a large amount of data and deciding which initial codes make the most analytic sense (Charmaz, 2006, p. 57). We wrote preliminary analytic memos about our codes and comparisons and any other ideas about our data that occurred to us. At least one-fourth of our 64 participants contributed to each subcategory. This stage led to developing the subcategories and categories that were later used to construct our grounded model. As a team, we had several lengthy discussions to verify, enrich, and disconfirm the emergent categories and subcategories (Merriam, 2009).

3.4.2. Step 2

While the focused coding step fractured data into separate pieces and distinct codes, axial coding, our second step, brought the data back together again into a coherent whole (Charmaz, 2006). In this stage, we explored how categories and subcategories linked, and whether we could ascertain any logical order or storyline among them. We have not used axial coding according to Strauss and Corbin's (1990) formal procedures; instead, we developed subcategories of a category and identified the links between them as we learned about the experiences the categories represent (Charmaz, 2006). The subsequent categories, subcategories, and links reflect how we made sense of the data. The first draft of our model emerged at this point.

3.4.3. Step 3

In light of the conceptual model developed in our analysis, and to be sure we had captured all the links in our data, one author coded the whole dataset line-by-line again to re-examine the data from all interviews and to determine the adequacy of the codes (Charmaz, 2006). We also looked for explicit references to links between contextual stressors and also for coping strategies corresponding to those stressors. A second author double-checked all the codes, and we discussed and resolved points of disagreement. We engaged in data-driven reduction of the categories and subcategories that seemed unrelated. The emergent model continued to be refined during this process (e.g., two strategies were added to our findings at this stage). The end result is the model depicted in Fig. 1.

3.5. Trustworthiness

Informed by Lincoln and Guba (1985), we adopted three strategies to ensure the trustworthiness of our work. We kept a reflexive journal for the project, in which we reflected on our thought processes while conducting the study. We also used peer-debriefing and

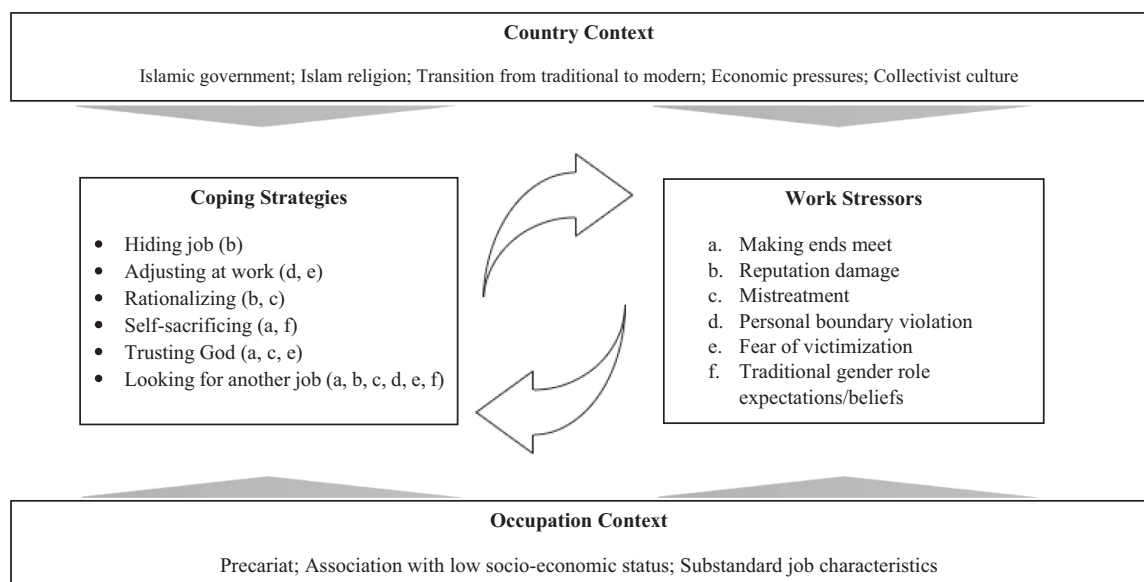


Fig. 1. Coping with work stressors among app-based taxi drivers.

Note: The letters in parentheses in front of each strategy represent the stressors addressed using the corresponding strategy.

asked qualitative researcher colleagues who were not involved in the research to answer the question of to what degree our analysis gives voice to the different constructions of reality found in our data. Once the data analysis was complete, we engaged in member checking by sharing summaries of our findings with five drivers to get feedback on how well our model depicted their experiences (Pratt et al., 2020).

4. Findings

Our findings unpack multiple stressors (see Fig. 1) that emerge from the country and occupational context of 64 app-based drivers in Tehran, Iran. To cope with these contextual stressors, the drivers adopted six coping strategies that enabled them to protect themselves and continue their work. Below we outline the stressors, followed by the coping strategies supported by representative quotations from the interviews.

4.1. Stressors

4.1.1. Making ends meet

Many of our participants came from families struggling financially at the time and, as drivers with insufficient earnings, worried about making ends meet. Drivers highlighted their country's rising inflation rate and increasing prices several times in the interviews. It was common for many participants to have debts or no savings and to be desperate for readily available earn-as-you-work jobs. D₃₆, father of a two-year-old son, with fifteen years' experience in a prestigious international company, was made redundant over night by an email terminating his employment on the spot due to the United States sanctions against Iran. Many participants were constantly preoccupied with their family finances, as showcased below:

I am already stressed for the coming year because the landlord increases the deposit every year... utility bills phone bills all stress me because I know it means we will have less money to spend, and I need to put more hours into work. I think about all these... I have these conflicts in my mind [when giving rides].

(D₆₂-Man)

I wake up at five and head off at half five; I don't even get a lunch break. My son is 24 and does things here and there... he has a disability and [does not earn much]. Rent, food, and groceries are all on me. I am under all these pressures; I have had a recent operation on my neck and suffer from sciatica, but I have no choice; I have to work.

(D₂₂-Woman)

4.1.2. Damaging reputation

The majority of our participants were under the impression that others had negative attitudes towards driving as a job. Thirty out of 64 participants were worried about damaging their own or their family's reputation if others learned about their job as a driver. These thoughts were more prevalent among the drivers who were highly educated, had been laid off from a professional job, or came from a family that disparaged their job. The drivers were particularly stressed about damaging their reputation when their trips were close to where relatives or friends lived, due to the risk of being seen by them, as stated by D₅₇: "I [always] have stress. I'm anxious about giving a ride to a passenger who might recognize me." Another example is D₄₀, whose family did not approve of his job. He shared with us that he carried this burden all day long.

I come from a well-educated family. My brother is now a faculty member at uni... My sister has a Ph.D.... My younger sister is a [professional] and I have an engineering degree... That's why they are not keen... They want me to have a prestigious job, just like themselves... They always push me to look for a better job... they prefer a job that matches the social status of the family.

(D₄₀-Man)

4.1.3. Mistreatment

All drivers had experienced, and were frustrated with, being disrespected by passengers, typically manifested by issuing orders and treating them as servants, or regarding them as personal drivers who must drive anywhere, regardless of what is booked on the system. A few drivers had been insulted for minor errors, inevitable incidents, or following company rules that banned smoking during the ride. The following quotation illustrates D₅₃'s frustration with being mistreated.

The passengers do not think that we are human beings not just taxi drivers; they can't imagine the one giving ride to them might be a decent educated person... especially the young generation. Someone pins the wrong location, you get there and give them a call learning they are two blocks away! When reminding they have pinned the wrong location, they shout at me saying "it is what it is, and you are wrong". I have had cases who made me so angry I refused to accept their payment [and just wanted them out of the car]. I used to be a calm relaxed person; now there is this chaos inside me.

(D₅₃-Man)

For some women drivers, mistreatment had roots in women driver stereotypes. For example, some passengers refused to be given rides by women drivers or made negative comments about their driving skills during the ride.

Men go too far when they see a woman in this job. Once I was driving and had to block a man driver's way for a sec; he got so mad he was about to hit my car. I reacted fast, but it really shocked me.

(D₄-Woman)

4.1.4. Personal boundary violation

Some passengers took advantage of having access to the drivers' phone numbers. Many drivers installed the company's app on their personal phones, because they could not afford a second phone, which gave passengers' access to the drivers' personal numbers. Some passengers, not mindful about privacy issues, used the phone number to request a taxi during nontraditional hours. Other passengers called drivers after the ride to ask for a date or an intimate relationship. Although such experiences were not frequent, the possibility of such treatments stressed our participants, as shown in the example below.

I gave a ride to a man [passenger]... the next day he called... I had no idea who he was... I asked if he had left anything in my car he said "No, I am the one you gave a ride to yesterday." I replied ok, and asked what can I do for you? He said "I really liked you and want to be with you... I'll pay all your debts and costs. Just be with me"

(D₃₂-Woman)

The other day... someone called and said go to the restaurant and get me some food, I'll pay you when you got here or in a worse case... a guy calls me midnight and says go get me stuff from the drugstore! These cases make me feel so bad.

(D₅₄-Man)

Some men do not leave the car once the ride is done... they want to know if I am single or married... these moments are very scary.

(D₂₄-Woman)

4.1.5. Fear of victimization

Although the drivers' phones were linked to the internet company's central navigation system, the drivers were well aware that giving rides to passengers whose identity could not be easily verified had its own risks. The drivers' complaints from passengers could lead to blocking the passengers, but some drivers still had this fear and discussed it in the interviews. The fear of being attacked or victimized by passengers was shared by both men and women drivers, but it was mainly brought up by the women drivers. Some women drivers envisioned being in danger when giving rides to men passengers. Envisioning victimization increased when they discussed giving rides late at night, especially in rough neighborhoods or suburbs.

The bad thing about this job... well it is stress from the very beginning... [you keep asking yourself] what if the passenger is not a decent man? What shall I do then? These are my fears.

(D₂₄-Woman)

I do not accept rides to the airport late at night. It is close to deserts, and who knows? I may get mugged.

(D₃₆-Man)

4.1.6. Traditional gender role expectations or beliefs

The country's culture and dominant religion, Islam, emphasize men's role as breadwinner (Bahramitash & Olmsted, 2014); therefore, the men participants who struggled to provide for their families repeatedly expressed feelings of anxiety. Only 27 % of men drivers came from dual-earner families; however, the majority of the men drivers did not welcome the idea of their spouse's employment and took it for granted that it was the husband's responsibility to find a solution.

Cost of living has gone up... I was forced into this job... A man has to work hard to provide for his wife... If she is appreciative, he has to even work an extra shift to make more money for his wife to spend. She starts life with a man with lots of hopes and dreams. She doesn't come to be a slave.

(D₆₃-Man)

Islamic countries' religious and traditional values highly emphasize the significance of child-rearing for women (Karimi, 2011). When integrated with gender roles in families with traditional values, this presumes a homemaker role for women. Even in families with a woman breadwinner—typically single-mother households—the women drivers were committed to being both a breadwinner and a homemaker, despite having children who could play a stronger role in helping with family finances and tasks. In this context, some women drivers' family members expected them to take care of the lion's share of household chores despite working long hours. The woman drivers who approved of such expectations were stressed about not doing enough for their families while at work and blamed themselves for it. However, the drivers who did not endorse such expectations, and argued for sharing housework among family members, felt pressured by family expectations and had difficulty putting in all the hours they wished at work.

I start in the morning and finish [early] by... 1 pm. After all, I'm a housewife and need to cook. My husband is always home and I need to take care of him as well... brew tea, prepare his lunch make something for dinner or vacuum the house... I have a daughter who works... She takes packed lunch to work; so, I have to cook the night before. My husband does nothing around the

house. Once in a blue moon, he might do the dishes when I'm not there. I also do my daughter's chores... I wash her clothes; even I wash her underwear.

(D₁-Woman)

4.2. Coping strategies

4.2.1. Hiding job

Hiding their job was a common strategy adopted by 58 % of our participants to deal with their stress about damaging their reputation. Depending on their circumstances, our participants hid their job from their immediate family or in-laws, their extended family, or their friends and acquaintances. Some waited until they were far from their neighborhood to turn on their taxi apps to avoid receiving requests from their neighbors, and some were conscious of not accepting passengers when close to areas where their friends or extended family lived. When asked by others about their jobs, some drivers either gave a generic response and changed the conversation or lied about their job, as shown in the two examples below.

My brother-in-law, my sisters, and my wife know about it, no one else... someone asked me if I could get him something from my previous job. I said I left there two months ago. He said, what do you do for a living then? I said currently unemployed, nothing special. Being a taxi driver, how can I put it, does not count as a good job... people will look down on you; it is not even a real job.

(D₅₇-Man)

Only my youngest sister-in-law knows about it... the rest don't. I'm not keen. It's like falling from the top... not easy for my husband and me. My husband has been up and wealthy all the time, and I don't want to lose face with relatives and all... that's why I won't let anyone know.

(D₃₀-Woman)

4.2.2. Adjustment at work

Making adjustments in how, where, and when work was done was a strategy adopted by our participants to cope with personal boundary violation and fear of victimization. To control the misuse of their phone number linked to the internet taxi system, the drivers who could not afford a second phone or wanted to avoid such encounters adjusted their work to avoid them. For example, some drivers refused ride requests coming from passengers of the opposite sex.

I only give rides to women. I feel shy about being in a closed space with a man [I don't know]. It makes me feel uncomfortable to be in the car [with a man]. I cancel the ride as soon as I see a passenger is a man.

(D₁₆-Woman)

In addition to privacy issues, some drivers envisioned being in danger when giving rides to passengers, especially late at night, in rough neighborhoods or suburbs. Not driving during nontraditional hours or in the suburbs and refusing to give rides to passengers that looked suspicious or had not provided enough information were manifestations of the adjusting at work strategy.

I would prefer not to work late at nights though the fare rate is higher, and the traffic is the least... [I am] home at 8 p.m. every night.

(D₃₅-Man)

I never wear make-up at work. I'm always simple... [when I do not work as a taxi driver] I wear make-up, but [not when I'm working.]

(D₃₁-Woman)

4.3. Rationalizing

The strategy the drivers adopted to cope with their concerns about damaging their reputation or being mistreated was to rationalize their job by either refusing to identify with it and regarding it as temporary or by emphasizing its positive features. Those who had lost a job or foresaw a more prestigious future job tried to relieve themselves from those pressures by justifying the taxi job as a means of survival to help them earn money until they found a decent job. Also, they continually discussed their qualifications, skills, and achievements in their previous jobs; this mindset mitigated their stress.

In the past year and a half, I honestly didn't consider [this job] as my occupation. I'm praying to God to help me find a job. I mean. I take driving... as a temporary fun job or a second job I can leave at any moment. I never take this job as my main occupation.

(D₆₂-Man)

Other participants convinced themselves that doing this job was better than asking others for money, and some emphasized that this job is no different from other service provision jobs. Those with religious beliefs emphasized the importance of earning halal income⁶ through hard work, and some even counted doing a job below what they deserve as a divine test from God that they had to pass.

4.4. Self-sacrificing

To cope with stressors, including making ends meet and traditional gender role expectations or beliefs, many of our participants overused their personal resources to address their family's financial struggles or assumed a breadwinner or homemaker role, regardless of their circumstances. Many drivers sacrificed their health, sleep, exercise, and well-being by working very long hours to ensure they provided for their families and fulfilled their children's wishes. We had examples of drivers who left home so early and arrived home so late that their children did not get to see them on those days; these drivers believed that, as a breadwinner, they had to do everything possible to help their family thrive.

Trust me it's difficult to get up in the morning. I go home around 1 or 2 am and get to sleep at 2 or 3 am, wake up again around 7:30 or 8 am. I get very little rest, but I have to... I have had an accident and my leg hurts... From my knee to pelvis there is platinum... everything got more complicated when I married... I don't want to lose face in front of my wife... I really want to impress her... I want her to know me as the man of her life, knowing that I won't back down.

(D₅₁-Man)

I have a bad back, heart issues, and other things going on... I eat breakfast and lunch in the car and say my prayers by the street side. I have to. I got loans for my children's [education]... I've spent a lot for my son to get his degree. I have small debts here and there and I have to repay them... I have to do the groceries, give my kids' pocket money and all that.

(D₂-Woman)

I don't get to see my child very often... I see her every two or three days... My wife has become really sick and tired of this situation, very unhappy; but I can't do anything, I have no other option... I'm forced to work from 6 a.m. till midnight or 1 a.m. I told you, sometimes I even have to work till 2 a.m. Ever since I started this job, all my time is spent just for work, and I can't do anything about it, nothing.

(D₄₁-Man)

4.5. Trusting God

Many drivers referred to their trust in God as a means to remain hopeful that things would eventually change for the better. When frustrated with being mistreated or worried about victimization, and when working extensive hours to make ends meet, the drivers trusted that God was there to protect and help them.

Have a look [showing a photo from his mobile phone to the interviewer]; this is my photo wearing a tie sitting at my desk [in my previous job]... I lost my grip... but I convince myself this is part of life. Maybe God wants to test me... to see if I can manage myself my life now that I fell from the top.

(D₃₆-Man)

I am always stressed someone might learn about my job. I just pray God to save my face until my situation changes.

(D₅₃-Man)

4.6. Looking for another job

Thirty-five of the 64 drivers were actively looking for jobs to change their lives. Not having insurance and benefits was a major concern for the drivers who were their family's breadwinner and had lost a percentage of their income; they were worried about what would happen to their family if they were unable to work due to an unexpected adversity. Some drivers, who refused to identify with their jobs and assumed their job was temporary, were hopeful that sooner or later they would find a better job, and kept looking for available opportunities.

How can I put it? Driving is not a good job; it is not good at all. If you are off one day, you have no money. Other jobs have a monthly payment, and you don't need to worry. You can take time off while your pay is secured; not in this job, no way. Today is the weekend; I had no money if I did not resist my temptation to have a lie-in. I am looking for jobs, have asked a few to refer me... I'll leave if I get the O.K.

(D₅₆-Man)

Among the six coping strategies we identified, only this one could be categorized as an active strategy in which the individual

⁶ In this case, halal money refers to money earned from ethical means.

directly addressed the source of the problem and attempted to modify the stressor. The remaining strategies mitigated the experienced stress, but did not work towards lifting the stressors causing it.

5. Discussion

5.1. Theoretical contributions

The qualitative nature of our work and its focus on an understudied population and context revealed findings that extend careers research to take account of contextualized stressors and coping strategies unfolding in an emerging occupation. We empirically show that despite the standardized nature of app work, it cannot be examined apart from the context in which it is experienced. Following, we will describe our contributions and elaborate on how occupational and country contexts played a role in our participants' work experience.

When examined in relation to their specific occupational context (i.e., characterized as precarious, associated with low socioeconomic status, substandard job characteristics), app-based drivers' experiences contradicted the common perceptions of independent contract work as a desirable and flexible work arrangement (e.g., [Lehdonvirta, 2018](#)). App-based taxi drivers could be seen as exemplars of low-skilled app work, characterized by very low pay, often insufficient availability of work, and other unfair practices, whose experiences raise questions about the benefits of app work as promoted by platform organizations (e.g., [Lehdonvirta, 2018](#)). Also, within the extant literature, there seems to be a tendency to emphasize the economic benefits of app work in developing countries, which may downplay workers' stressful work experiences ([Rani & Furrer, 2021](#)). We suggest that, while there are undeniable benefits (e.g., new employment opportunities for informal workers and the unemployed), app-based taxi driving undertaken to make ends meet brings about certain stressors, depending on the context.

As independent contractors, the app-based drivers had minimal access to organizational resources that protect against work stressors, such as mistreatment, personal boundary violation, and fear of victimization. Compared to employees in standard employment relationships with organizations, independent contractors are on their own to face the negative aspects of the job. As previous research has suggested, some aspects of app work complicate the application of traditional employment contracts (e.g., [Forde et al., 2017](#)). Studies conducted in developed Western countries have suggested that independent contract workers, including app-based drivers, have protested, found solidarity, and taken collective action to negotiate employment rights ([Caza et al., 2021](#); [Shanahan & Smith, 2021](#)). However, participants in our study were burdened by economic challenges in a collectivist culture, and relied on their coping strategies to continue working as a driver. Our findings suggest that workers who function outside formal organizations and have limited access to organizational resources may have to depend on personal resources and coping strategies.

All but one of the six coping strategies adopted by the drivers were passive and non-agentic. This pattern supports the argument that app-based drivers, as low-skilled workers, are positioned to be a socially disadvantaged group; they tend to encounter social stressors and have fewer coping resources than their more advantaged counterparts. Limited access to coping resources, such as organizational or community support, led the drivers to depend on passive and non-agentic coping ways. Failing to find a job matched with their qualifications, navigating a job categorized as low-skilled, and working long, low-paid hours—with a university degree in many cases—can explain why employing higher levels of agency was not an option for our participants. Therefore, our participants employed strategies that enabled them to protect themselves and survive their jobs. This provides additional support for previous research, which argues that when individuals perceive a situation as unchangeable, minimizing engagement with stressful situations through passive strategies may result in better coping outcomes ([Stanislawski, 2019](#)). Also, the similarity between the strategies used by our participants and the strategies used by those dealing with the occupational taint emerging from their job being categorized as dirty work ([Bergman & Chalkley, 2007](#); [Ostaszewicz et al., 2016](#)), provides further evidence for how a job that is not necessarily perceived as stigmatized in other country contexts was perceived as such in the context of our research. The issues of stigma and low-social status explain why the prevalent pattern found in previous research—Muslims using interpersonal and collective coping strategies such as seeking social support or reaching out to family members—did not emerge in our study ([Fischer et al., 2010](#)).

In this study, adopting a social stress theory lens, we identified socially embedded stressors that low-skilled app workers may face due to the nature of their work. By emphasizing the role of country and occupational contexts, we enable a better understanding of how app-based workers' experiences are socially and culturally determined. We suggest that, because perceptions of app work as an occupation and its social status may be susceptible to contextual contingencies, we must understand the context within which it is performed.

The stressors that emerged in our study extend previous research that has highlighted the substandard job characteristics (e.g., physically demanding and low pay) and fear of victimization among taxi drivers ([Choi, 2018](#)). All six stressors that emerged in our work had roots in either the occupational or the country context in which they unfolded. For example, the majority of our participants were very worried about the driving job damaging their reputation. This concern makes sense when an individual has been raised in a collective culture in which parents need to accept and approve their children's contacts with individuals outside the family, one's reputation is closely related to their family reputation, and honor and gender codes govern behaviors of men and women ([Mosquera, 2013](#); [Munniksma et al., 2012](#)). Also, living in a country that was under extensive economic pressures had pushed our participants to select a job for which they were overqualified. Forty-seven percent of our participants had a university degree (30 out of 64 had associate, bachelor's, or master's degrees) that had raised their own and others' expectations for obtaining suitable jobs; not meeting these expectations created strains that emerged from the contextual contingencies of the drivers' work. Our study expands the applications of social stress theory to career studies, given that much of the existing research has adopted it in health and well-being studies. We show that social stress theory could serve as a valuable lens to identify stressors of app work. It complements the

existing research that has focused on the negative psychological consequences of social status, mostly race and socioeconomic status (e.g., Thomas Tobin et al., 2021; Turner, 2009).

The coping strategies used by the drivers had contextual roots as well and reflected the dynamics of the culture in which they were embedded and practiced. For example, the strategy we labeled as trusting God reflected many of the religious beliefs reinforced in Islam, Iran's dominant religion, and naturalized in families and in the country's education system. Another example is the hiding job strategy, which might not emerge unless an individual is burdened by the unappealing features of a collective community that has a negative attitude towards their job. Members of collectivist cultures may espouse self-sacrifice on behalf of the greater good or family, whereas members of individualist cultures may be burdened by the assumptions of others that they have personally chosen to engage in work that most people would avoid. This finding points to the need for more research and theorization on the role of country and occupational contexts in how employees cope with stress. A lack of such understanding might lead to well-intentioned counseling or support that fails to help mitigate workers' stress.

5.2. Limitations and implications for future research

Although we have tapped into country and occupational contexts in our study, it is important to recognize that there are undoubtedly complex interactions among these elements that need further research. Our discussion suggests that it is difficult to provide a reasonably detailed account of app work without considering the culture in which it is embedded. Would an app driver in a developed Western country with an individualist culture have the same concerns? Would an immigrant from a non-Western collectivist country who works as an app-based taxi driver in a Western individualistic country worry about giving rides to their neighbors or friends? These, and many other similar questions, need to be addressed in future research; however, our findings emphasize and provide empirical support for the role of contextual contingencies, especially country context in low-skilled app work, that has not been sufficiently theorized in careers research. Another understudied area includes the prospects of agentic strategies, collective action, and support for app workers in developing non-Western contexts. Can workers gain support from platform companies and customers to alter the occupational dynamics and stressors? What forms of governance will be needed to protect workers' well-being? How may app-based companies' treatment of workers change the occupational dynamics in countries where unions and collective organizations are less likely to form.

Our participants were actively working as app-based taxi drivers when they were interviewed; therefore, their accounts reflect the experiences of workers who were able to cope with various stressors well enough to continue in their jobs. It is important to note that many people give up app-based taxi driving after trying it, and some work irregularly, dropping in and out of it. Future researchers should consider these groups to help build a holistic understanding of app workers' career patterns and the stressors associated with them.

In this study, we conducted one round of interviews and could not capture our participants' experiences over time. For example, while our interviews revealed how the drivers used coping strategies to minimize their stressors and remain in their job, it remains unexplored whether drivers staying in the job for a longer period would experience different stressors or modify their coping strategies. We conducted this study during the early stages of the emergence of platform organizations in Iran, when app-based taxi driving was a relatively new concept. Over time, the general public's perceptions of this occupation and the work conditions may change, potentially changing the drivers' stress and coping dynamics.

5.3. Practical implications

As work stressors play an essential role in the experience of app-based work, platform organizations should identify, understand, and reduce the occurrence of stressors in app workers' daily life. In doing so, they would be taking necessary steps towards improving app workers' ability to stay in their jobs. Such initiatives would benefit the individual workers, and represent a long-term investment in a company's access to workers. Based on our findings, we recommend that platform organizations hiring workers for low-skilled jobs offer small loans to relieve some of the workers' financial stress or consider partnering with virtual financial wellness programs to help workers find other financial resources. Since performing the app work is administered by artificial intelligence (AI), its capabilities can be utilized to help app workers handle their stress. First, an AI feature integrated into the app could help workers rate their daily level of stress and then suggest stress management solutions, such as deep breathing, meditation, talking with someone, or seeking professional help. Organizational leaders can support app-based taxi drivers by showing empathy via text message or by calling drivers after reports of mistreatment or boundary violation. The app-based taxi companies could partner with third-party organizations that drivers could call to seek mental health support without disclosing it to employers or families. Our findings suggest that app-based taxi drivers may need to be taught how to manage their psychological involvement with stressors by using stress management, conflict resolution, and effective communication. This can be accompanied by ongoing training to improve the drivers' ability to confront danger and protect themselves. These self-paced learning and development opportunities can be facilitated through the app and made available to drivers to review during waiting periods (for rides or clients) or on their own time (at home or during breaks). Micro-learning solutions delivered on mobile devices can be tailored to app-based taxi drivers in each country, acknowledging the stressors that emerge from the workers' cultural contexts.

Declaration of competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to

influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jvb.2022.103782>.

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