Human-AI Collaboration for Enhancing Delivery Workers' Well-Being in the UAE: A Socio-Technical Approach

Anonymous Submission

Abstract

This paper presents research about Human-AI collaboration in the United Arab Emirates food delivery sphere. The main part of the work is qualitative research, which served as a base for further findings, hypotheses, recommendations, and possible solutions. Key insights reveal that stress factors such as traffic, financial instability, lack of corporate support, and long working hours make a significant impact on the mental health of food-delivery workers, leading to burnout and emotional exhaustion. This research suggests different options for solving this problem based on conducted interviews, a study with a large theoretical base, and artificial intelligence implementation. Our paper concludes that effective implementation requires a balance between innovations, company responsibility, and cultural norms to create sustainable solutions for food-delivery workers well-being.

Introduction

The mental health of employees is one of the most acute problems in the workplace in the world. A Recent study from Upwork Research Institute reveals that 71% of working people across the US, Canada, Australia and UK feel burnout (The Upwork Research Institute, 2024) with an average of 41% of full-time employees feeling daily stress from their duties. The situation is even worse in the Middle East where this percentage has increased to 52% (Allen, 2024). The seriousness of this problem is also highlighted by its inclusion in national health and work protection programs around the world. These include, for example, Federal Law No. (10) of 2023 On Mental Health in UAE (Ministry of Health & Prevention, 2023)better mental health for a healthier Union as European Union initiative (European Health and Digital Executive Agency (HaDEA), 2022), Australia's mental health system (Australian Institute of Health and Welfare, 2024) which targets emotional well-being in its different forms and a lot of other initiatives in high developing and developed countries.

High levels of stress are observed in many areas of work, but service personnel remain the most vulnerable due to high workloads and barriers to access to qualified care. One of these groups is delivery workers, who face pressure and stressful situations daily. This research paper examines the mental well-being issues faced by food delivery workers in the UAE. It combines the results of existing research with data obtained during personal interviews with employees of the largest local delivery companies in Dubai, identifies key stress factors, problems and obstacles that riders face on a daily basis. What is most important is the research coverage of various types of solutions using artificial intelligence. Based on the results of this work, we have identified the most optimal options and studied the basics for their implementation, based on an analysis of the needs of employees, their pain points, and the current state of the industry. The main goal of the entire study is to address the mental health problems of an underrepresented group that lacks the resources and capabilities to solve their mental problems, and to create suitable working AI-based solutions for delivery workers and companies based on moral and economically beneficial beliefs.

Workplace Mental Health Challenges Worldwide

Workplace burnout and stress have become significant matters on a global scale in multiple industries and regions. Elbarazi et al. (2017) explain that burnout syndrome can be determined based on the three levels of Depersonalization (DP), Emotional Exhaustion (EE) and a sense of low Personal Accomplishment (PA).

In the health industry, many health professionals have experienced high levels of burnout, which has led to low levels of work-life balance. For example, a study by Hayes et al. (2019) in Ireland found that 82% of the participant doctors experienced workplace stress, and 29.7% reported feeling burnout as well. Similarly, nurses in Lebanon have reported high levels of burnout, according to research by Sabbah et al. (2012).

High levels of burnout have not only been reported in the health industry, but also within other industries that have been heavily impacted by digitalization. With the increase of online shopping and food delivery platforms, there have been growing levels of mental health concerns within the food delivery industry. Research by Zhang et al. (2022)

found that many delivery drivers had experienced high levels of stress and burnout in China due to the high job demands of working long hours. Like many customer-facing roles, drivers are expected to uphold the common mantra of providing service with a smile, adding an extra layer of emotional labor to their work. Moreover, advancements in technology within organizational management have enabled some delivery companies to use algorithmic management tools to maintain a continuous supply of drivers by sending workers automated messages during peak times (International Labour Organization, 2022). However, this practice may lead to heightened stress and burnout, particularly if drivers feel pressured to meet incessant demands.

Maslow's hierarchy of needs can be redefined in the organizational setting (Benson & Dundis, 2003) to better understand the motivations and behaviors of delivery drivers. At the base of the pyramid lies the first fundamental need that workers require, which is sufficient wages. Data reveals that drivers in the UAE make as low as approximately $2.04 per delivery (Fast Company Middle East, 2022), and a driver's earnings usually cannot be guaranteed since demand and supply of drivers can fluctuate continuously (Zhang, et al., 2022). With foundational needs such as wages being insufficiently met, this creates fundamental challenges in meeting higher-level needs.

Secondly, workers also seek safe working conditions to be provided, yet it is evident that many drivers often lack sufficient safety training and knowledge of wearing protective gear such as helmets in the correct manner. Some delivery companies spend a minimal fee of $27 per month to service the driver's motorbikes, which is a substantially small investment in crucial maintenance services related to brakes, tires, plugs, and oil changes, which can impact driver safety (The Economic Times, 2021). It is unsurprising that there have been a high number of motorcycle accidents reported with injured delivery drivers being treated for brain and long bone damage (The National News, 2025). Further exacerbating the situation, drivers are even expected to cover their own health insurance and often can only afford to pay for subpar insurance packages with limited coverages that have no death benefits or crash compensations (The Economic Times, 2021).

The third level refers to social belonging in the workplace. Considering the challenges many of these food delivery drivers face in adjusting to new environments away from their home countries (Al-Maskari, et al., 2011), it can often be a struggle for many of these delivery drivers to adapt to new cultural environments and practices.

Self-esteem, the fourth level of Maslow's hierarchy, is often low among food delivery drivers due to their perceived low social status and frequent mistreatment by customers. A report from The Khaleej Times (2024b) has highlighted instances where drivers were denied basic amenities such as water or restroom access while waiting to pick up orders from restaurants. In some cases, they were forced to wait outside in extreme temperatures without access to suitable seating or waiting areas, further exacerbating their challenging working conditions. Such circumstances can diminish the dignity and self-worth of many delivery drivers.

Lastly, in terms of self-actualization, drivers may feel like they have limited opportunities for growth and development since most food delivery jobs do not have career advancement opportunities or much job satisfaction. Overall, it is evident there is still a long way to go to ensure the sustainable mental well-being of these delivery drivers.

The Dubai Syndrome: A Closer Examination of the Food Delivery Industry in the UAE

Doctors in Saudi German Hospital in the UAE treat up to 20 motorcycle delivery drivers monthly due to road accidents, with at least two to three tragically succumbing to their injuries (The National News, 2025). However, beyond the physical safety issues of road accidents that drivers face, lies another pressing issue within the realm of occupational safety that has been left with diminished levels of concern. This research gap lies in the scope of the mental health and wellbeing of such delivery drivers. Taking a closer examination of the UAE, it is evident that the worker wellbeing of migrants is a topic that has not been well researched as opposed to the West, Asia, or Europe (Kronfol, et al., 2014).

Workers often experience psychological issues like stress, anxiety, and deprivation, which has been colloquially termed the 'Dubai Syndrome' (Al-Maskari, et al., 2011, p. pg.1). A significant majority of these workers are underpaid, with low job security as they are contracted under short-term visas and are separated from their families by long distances, which further exacerbates such issues.

A survey conducted by Al-Maskari et al. (2011) of migrants in the UAE using the Depression Anxiety Stress Scale (DASS) revealed that approximately a quarter of the participants (25.1%) had depression, with a greater proportion (46.7%) experiencing depression if they worked more than 12 hours compared to those who worked less than 8 hours (12.7%). Additionally, up to 6.3% of the study's participants had thought of committing suicide, and 2.5% had attempted suicide. Factors such as long working hours and low job satisfaction can impact worker wellbeing and lead to burnout, which is a symptom of chronic occupational stress (Hayes, et al., 2019).

In reference to the Job Demands-Resources Model (Bakker & Demerouti, 2007), job burnout can be described as "a response to a prolonged state of imbalance between job demands and job resources" (Baka & Prusik, 2021, p. 1). Quick and Henderson (2016) explain that work demands can be split into 4 main categories of task demands, role demands, physical demands, and interpersonal demands. Food delivery drivers are usually expected to make multiple orders within the day while meeting a 30-minute delivery time as per recent guidelines released by the Dubai Municipality (Khaleej Times, 2024a). To compound the issue, many companies have advertised even shorter delivery timings of 15 minutes (The National News, 2025) and since drivers are paid on a commission basis, this adds immense pressure to meet high delivery volumes to meet expectations of maximizing company profits. This is a form of task demand since the high workload can contribute to significant burnout and stress levels.

Moreover, drivers also face role conflicts when they are expected to complete multiple deliveries within tight timeframes while simultaneously adhering to local traffic laws and regulations, or risk paying hefty fines (The National News, 2024). Additionally, recent regulations mandate drivers to ensure that hot foods are kept at temperatures above 60°C throughout the delivery, which can often be difficult during long-distance journeys (Khaleej Times, 2024a). In terms of physical demands, many drivers often commute long distances while withstanding the high temperatures of the summers in the UAE, which can exceed 45 degrees (Fast Company Middle East, 2022). This can undoubtedly take an immense toll on one's physical state and wellbeing. Lastly, interpersonal demands such as personality differences can also place additional demands when drivers deal with difficult colleagues or customers. Social density can also contribute to this demand since many workers live in shared accommodation together in a confined space, which can create grounds for arguments.

Despite the significant job demands placed on delivery drivers, there are minimal job resources provided to counteract the strain of the demands. Most workers have few opportunities for personal growth, learning, and development, which are all crucial aspects of creating a healthy work balance.

The Wellbeing of Food Delivery Workers in the UAE

Method

To analyze the current state of mental health among delivery workers in UAE our team decided to conduct a series of interviews with riders. We spoke with 10 representatives of this profession from the biggest companies in Dubai, exact companies and personal introduction for each of them skipped on purpose to save the privacy and inviolability of participants. Participants where selected based on company they are working for and location. Therefore, we have selected riders who delier food in Dubai Knowledge Park, each participant were informed about annonymity and provided consent for recording. Interview protocol focused on several key themes: daily routine and work tasks, facingstressful expirience and source of the stress, mental health awarness, company's support for well-being, use of technology for well-beung, acceptance of solutions with artificial intelligence. Data from interview was recorded and the main thesesis were later written out in a shared table. Based on the collected data, key themes were identified through grouping using manual thematic coding (Jnanathapaswi, 2021). After analyzing the, and combining the isights with theoretical research, practical recommendations with usage of AI were proposed. Two main theoretical frameorks Maslow's hierarchy (Benson & Dundis, 2003) and job demands-resources model (Schaufeli, 2017) formed the foundation of the study and helped to compare possible solutions with the expirience of the intirviewed workers. This chapter will explain more about our findings and data we were able to gather. The main topics identified because of an analysis of data from our interviews were: mental well-being and impact of stress on it, influence on people's lives from work pressure they faced, validation of possible solutions to those problems with usage of modern technologies and artificial intelligence.

Results and Analysis

The first question is a typical icebreaker to start the dialog and win over the interviewee. We used this question to help respondents feel more comfortable and open up about their experience. The main insight from it is a big amount of pressure, working 12 hours and routine which all the riders are facing daily.

"I have just 10 hours on the contract, but I do overtime to support my family."
(Participant 2)

"I work for 12 hours when there is lot of work- during any event or when there are many orders"
(Participant 3)

Second and Third questions are both aiming to get the most stressful pain points from the rider's point of view. Based on our research we can say that the top 3 stressful situations for delivery workers are traffic, financial concerns and work-related issues. Traffic as a main source of anxiety was mentioned by each of the respondents, which makes it one of the main directions for research and finding a solution. The financial part of the job which is causing a lot of worries for workers is mostly connected with payments delays and low earnings. While it seems like there are no possible solutions that we can proceed with in the sphere of earnings, there are plenty of opportunities to help companies better maintain salary and related payments, the same as increasing financial literacy of riders to help them better maintain their spendings and negotiate with employers in cases of payment delays.

It's mostly traffic that is very stressful. I get stressed when I receive no orders, another thing that stresses me out is receiving orders around my break time. If I get stuck in delivering my orders, I get no time to have my meals. Sometimes Visa status also bothers me, and I make it difficult for me to visit my home
(Participant 7)

The roads are very tricky, the traffic is very brutal.
(Participant 10)

Next question was targeted to get more knowledge and confirm or deny the belief about the stigma of talking about emotional well-being. According to our results this has been confirmed. Many employees find it difficult to express their feelings due to cultural norms, mistrust, or reluctance to burden others.

I keep my stressful moments to myself. I do not talk with my coworkers about it.
(Participant 2)

The one thing about the bikers is we are ready to help each other while we are on the road, each one of us readily helps the other during accidents. However, I do not share my issues with colleagues but rather with my friends
(Participant 8)

Fifth and Sixth questions helped us to understand more about possible solutions for this group of people. We understand the consequences that food deliveries usually face and

the main ways to solve stress-related problems. The key discovery for us was the desire of riders to spend less time on their smartphone and with technology in general. So, it became clear to us that the solution should lie in the plan for the company's interaction with the deliverers during the working day and be aimed primarily at the management part of the corporation.

I just relax in the garden, wait for a while, and get back to work once I feel a bit better.
(Participant 4)

I just work; I don't have time to handle stress while I am at work. When I go back to my room, I talk to my family, and it lightens up my mood.
(Participant 5)

This position was also reflected in the next question, where employees emphasized that their employer was not paying enough attention and resources to their well-being and mental state.

Absolutely not. The company does not support us. Rather, if we tell them that we are experiencing a burnout, they just tell that they will terminate us.
(Participant 4)

No, the company does not help me. They are concerned about the work.
(Participant 6)

Continuing the topic of finding a possible solution through the use of technology and artificial intelligence, the results of the following questions confirmed that most respondents do not use technology during their off-hours, and only some of them are open to using applications to improve their mental state. Some riders are wary of the possible benefits of such solutions, some note the possibility of improving navigation as one of the sympathetic approaches to stress reduction.

No, I have not used any technologies to reduce my stress.
(Participant 2)

I just use apps or related stuff for fun, not for reducing stress.
(Participant 3)

The last question brings the dialogue to an end and gives the interviewees the opportunity to comment on our proposals and add their comments. Here, some respondents

once again noted traffic and financial issues as the main sources of stress and mental health problems.

We would love to have the problem of heavy traffic resolved.
(Participant 9)

Based on the results of the study, we can say that delivery workers are a group with a large number of stress factors. This situation is aggravated by both the lack of help and support from the company and the inability to get it by themselves. The results also showed that the solutions using artificial intelligence should be implemented for the aggregator company as the primary consumer. Because of this, in addition to the well-being of the riders, it is also important to take into account the financial benefits of corporations in the long term, which will help to better implement a product aimed at solving this problem.

AI as a Solution for Riders' Mental Health Issues

It should be noted that the UAE has been exemplary in AI adoption. In 2021 The UAE Government issued its National AI Strategy that prioritizes the integration of AI solutions for enhanced safety and wellbeing across all high-risk sectors. This national focus supports the implementation of innovative AI technologies (UAE Government, 2018).

In order to effectively address the well-being issues for delivery drivers in the UAE, solutions provided should emphasize collaboration between humans and AI wherever possible. This would reflect previously discussed insights from Maslow's Hierarchy of Needs (Benson & Dundis, 2003) as well as the implications of the jobs-demand Resource Model (Bakker & Demerouti, 2007).

Such an approach would ensure that solutions are designed in a manner that is empathetic and designed with workers in mind.

Empathetic AI Chatbots and Virtual Counselling

AI chatbots can provide on-demand access to cognitive behavioral therapy-based support. Empathetic AI Chatbots should be co-designed with input from coworkers by incorporating feedback and experiences. This will allow for effective and culturally relevant virtual support in line with what is demonstrated by Fitzpatrick et al. (2017), where automated conversational agents were able to significantly reduce stress and anxiety

AI Powered Predictive Scheduling and Workload Management

Using AI Data analytics to leverage real-time and historical data can predict conditions that may result in driver fatigue and thus allow for optimizing scheduling and workloads (Torres, 2024).

Research into the delivery industry has suggested that stable and predictable schedules can provide for significant enhancement on mental wellbeing for drivers (Wang, et al., 2022).

Fatigue Detection Systems

Computer vision and real time detection are used to determine signs of fatigue, drowsiness or distraction. This was applied Dubai's Roads and Transport Authority (RTA) as they piloted the "Al Raqeeb" fatigue-monitoring system for their bus drivers, resulting in an 88% decrease in fatigue-related incidents (UAE Today, 2016). Applying similar fatigue detection systems for bike delivery fleets can manage driver fatigue and improve mental health in turn.

Wearables & Health Monitoring

Wearable devices are able to track metrics such as temperature, blood pressure, and other metrics. Wearables provide real-time feedback that allows for breaks or rehydration stops, significantly reducing fatigue in demanding work environments (Hernandez, 2024),.

AI-Powered Stress Management Tools

Integrating wearable technology with dedicated mobile applications integrated allows for detailed tracking of stress indicators. These applications in turn can deliver personalized mindfulness interventions and guided stress management. Balconi et al. (2019) reports that mindfulness practices mediated by wearable technology substantially decrease stress levels and mental fatigue.

AI-Powered Safety Gear & Accident Prevention

AI-enabled telematics and dashcams / cameras continuously monitor driving behavior and highlight issues such as harsh braking and over speeding, in turn providing immediate corrective feedback. According to Boodlal & Chiang (2014) such systems significantly reduce unsafe driving behavior, enhance overall safety, and in turn support mental wellbeing.

AI-assisted Drone Delivery

Talabat a food delivery service collaborated with Dubai's RTA to pilot autonomous delivery robots in Dubai. This can reduce human rider workload by reducing the number of shorter deliveries. This can subsequently reduce overall fatigue (Emirates News Agency (WAM), 2022)

The focus on a collaborative approach on solution development and ensuring the integration of worker feedback in iterations of AI empowered solutions allows for the enhancement of worker wellbeing in addition to elevating operational efficiency and enhancing social responsibility. This allows for a healthier work environment while supporting organizational growth and efficiency.

Practical Implications of Research and its Academic / Non-academic Contributions

This research has an impact on both the academic and practical aspects, highlighting the main challenges related to the mental health of food delivery workers in UAE, proposing actionable AI-based solutions on the edge of innovations and sustainability from one side and expands the discourse about stress factors and its effects on a person working under high pressure on the other. Paper provides a roadmap for companies, policymakers, health institutes and communities to design interventions like predictive workload management, fatigue monitoring and virtual counseling targeting big food delivery companies as target customers and beneficiary. All these contributions aim to improve workers' well-being, reduce turnover and create a favorable, sustainable environment in the new formats of economic cooperation and difficult working conditions that pose new challenges to companies and their employees. The outcome of this work implies the need for further in-depth exploration of the problems and barriers related to mental health, which, directly or indirectly, impact overall well-being and work quality. These issues should then be addressed accordingly. The proposed solutions above similarly require time and pilot launches, followed by observation and performance monitoring through comparable qualitative research. The goal is to assess their impact on riders' well-being and to document the financial and economic benefits for companies from implementing potential solutions - ultimately aiming to identify the most effective win-win approach.

Conclusion

Mental well-being problems which food delivery workers face daily are one of the most critical issues for industry. Our research shows that such things as traffic, salary delays, fees and inhuman treatment have a significant impact on riders' emotional health. This leads to a variety of problems from burnout and high level of stress to increasing risk of car accidents. The situation is also worsened by the lack of opportunities to receive high-quality care from both medical institutions and companies.

This study reveals the current situation of emotional well-being and suggests a range of artificial intelligence-based solutions which can solve it remain cheap and generally available. AI-powered tools like predictive workload management, chatbots for virtual counseling, and wearable health-monitoring devices can address both the physical and psychological strains which riders experienced daily. By targeting food delivery companies as primary customers these solutions can both increase companies' financials, improve their ESG status, distinguish them from the competitors and help delivery workers improve their well-being and reduce pressure.

Solutions to this complex problem requires a multifaceted approach that combines the usage of artificial intelligence, social awareness, and corporate responsibility to achieve significant changes and improve the current state of food delivery workers. Further research, the same as the development and participation of government-related organizations, policy makers, and companies themselves, is essential to ensure these solutions are accessible, culturally sensitive, and, most importantly, effectively implemented according to the needs of the food aggregators and delivery workers.

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