



Insights into Post-Covid-19 Supply Chain Challenges in on-Demand Food Delivery: A Focus on Riders' Perspectives

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Abstract

The COVID-19 pandemic has significantly disrupted supply chains across various industries, including the on-demand food delivery sector. As businesses adapt to the "new normal," it is crucial to examine the challenges faced by key stakeholders, particularly food delivery riders. This study aims to explore the post-pandemic supply chain challenges from the perspectives of riders, shedding light on their experiences, concerns, and the evolving dynamics of the on-demand food delivery ecosystem. Using a snowball sampling method, the research will

initially identify a small group of food delivery riders and leverage their networks to recruit additional participants, ultimately reaching a sample size of 210 riders. This approach allows for the exploration of diverse perspectives and experiences within the rider community. It delves into issues such as changes in demand patterns, safety protocols, and the role of digital platforms in addressing riders' needs. The study explores the implications of these challenges for supply chain resilience, examining how riders' perspectives can inform strategies for enhancing the sustainability and adaptability of on-demand food delivery operations. By amplifying the voices of riders, this research aims to contribute to ongoing discussions around gig worker rights, fair labour practices, and the development of more inclusive and equitable supply chain models in the post-COVID-19 era.

Keywords: COVID-19, on-demand food delivery, supply chain challenges, riders' perspectives, snowball sampling.



Introduction

Due to lockdowns and social distancing measures, the on-demand food delivery industry has gained prominence due to the COVID-19 epidemic. Riders are essential to the smooth operation of this industry. But this vital workforce has encountered many difficulties, from issues with their employment status and working conditions to worries about their health and safety. Scholars have drawn attention to how unstable the gig economy is, with riders being categorized as independent contractors and devoid of conventional benefits and job protections (*Woodcock & Graham, 2020; De Stefano & Aloisi, 2022*). Existing problems including unstable income, excessive work hours, and exposure to health risks have been made worse by the pandemic (*Reiter et al., 2021; Küssi & Lehdonvirta, 2022*). Moreover, the role of digital platforms in facilitating on-demand food delivery services has come under investigation, with issues expressed concerning algorithmic management, lack of transparency, and accountability (*Veen et al., 2020; Griesbach et al.,*

2019; Prassl & Risak, 2021). Calls for tighter regulation, worker safeguards, and the prospect for collective bargaining have gained traction (*Sampaio et al., 2022; De Stefano & Aloisi, 2023; Giudice et al., 2022*). Understanding riders' viewpoints and experiences is essential as the industry develops in order to create well-informed plans and policies that protect riders' rights and well-being while guaranteeing the smooth operation of this service (*Mehmann et al., 2020*). This study attempts to add to the expanding corpus of knowledge by offering insightful analysis and suggestions derived from a thorough examination of the post-pandemic goals and challenges of riders. Finding sustainable solutions also requires cooperation between stakeholders, including platforms, riders, lawmakers, and researchers. Innovative strategies to balance the interests of all parties concerned while guaranteeing the seamless functioning of the on-demand meal delivery service can be established by encouraging open communication and cooperating.



Review Of Literature

- **De Stefano and Aloisi (2022)** explored the tensions between EU competition law and the protection of workers' rights in the gig economy, with a focus on food delivery riders. They argued that the legal classification of riders as self-employed contractors undermines their access to social protections and collective bargaining rights. They called for a re-evaluation of EU competition law to better align with social rights and worker protections.
- **Kässi and Lehdonvirta (2022)** explored the role of digital platforms in facilitating food delivery services during the pandemic and the challenges faced by riders, including income insecurity, lack of social protection, and the need for better labor practices. Reiter et al. (2021) investigated the working conditions and safety concerns of food delivery riders during the pandemic, emphasizing the need for improved safety measures, such as personal protective equipment and training.
- **Sampaio et al. (2022)** investigated the working conditions of food delivery riders during the pandemic and highlighted the precarious nature of their employment, lack of adequate safety measures, and the need for better regulation. Veen et al. (2020) examined the impact of the pandemic on the gig economy, including food delivery services, and found that riders faced increased health risks, income insecurity, and a lack of social protection.
- **Reiter et al. (2021)** emphasized the need for improved safety measures for riders, such as personal protective equipment and training. Prassl and Risak (2021) analyzed the legal and regulatory frameworks surrounding the on-demand food delivery industry, calling for better worker protections and fair compensation for riders.



- **Zhai et al. (2021)** explored the psychological well-being of food delivery riders during the pandemic and found that they experienced high levels of stress, anxiety, and burnout due to increased workloads and exposure to health risks. **Chaves et al. (2021)** focused on the safety concerns of food delivery riders, emphasizing the need for improved safety measures, such as personal protective equipment and training, to mitigate the risks associated with their work during the pandemic.
- **Furthermore, Mehmam et al. (2020)** analyzed the ethical implications of the on-demand food delivery industry during the pandemic, highlighting the need for better labor practices and fair compensation for riders. **Bresciani et al. (2022)** investigated the role of digital platforms in facilitating food delivery services during the pandemic and the challenges faced by riders in terms of job insecurity, low wages, and lack of employee benefits.
- **Sambasivan and Holbrook (2020)** explored the use of food delivery platforms in low-income neighbourhoods, focusing on the perspectives of both riders and customers. They highlighted the unique challenges faced by riders in these areas, such as safety concerns, low-income customers, and the need for supplemental income. They also discussed the potential of food delivery platforms to provide economic opportunities and access to food in underserved communities.
- **Veen et al. (2020)** examined the working conditions and control mechanisms experienced by food delivery workers in the UK. They found that platforms exert significant control over workers through technological means, leading to a "gamification" of work that undermines worker autonomy and well-being. The authors called for better regulation and worker protections in the on-demand food delivery industry.
- **Woodcock and Graham's (2020)** book provided a comprehensive overview of



the gig economy, including its impact on workers in the on-demand food delivery sector. They examined the power dynamics between platforms and workers, highlighting issues such as algorithmic management, surveillance, and the erosion of labor rights. They also discussed the potential for worker resistance and collective action within the gig economy.

- **Griesbach et al. (2019)** examined the impact of algorithmic control on food delivery workers in the United States. They highlighted the ways in which platforms use algorithms to monitor and manage workers, often leading to heightened surveillance, reduced pay, and a lack of transparency. They discussed the implications of algorithmic control for worker autonomy, job satisfaction, and the future of work in the on-demand economy

Research Objectives

- To assess how the post-COVID-19 climate has affected riders' working conditions, as well as how demand

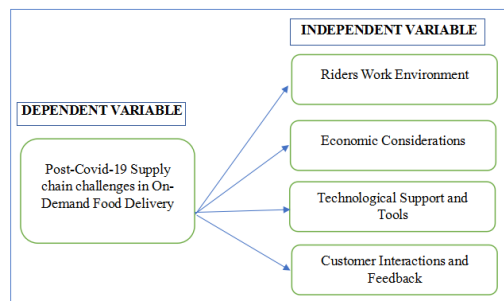
patterns, safety measures, and operating processes have changed.

To investigate how post-pandemic economic factors and rider compensation schemes affect employee retention, motivation, and work satisfaction.

To look into how riders' use of technology such as delivery tracking systems, communication channels, and navigation apps can improve their working environment and general productivity.

To examine the dynamics of consumer interactions and feedback systems, as well as how they affect the working conditions, job satisfaction, and general level of service quality experienced by riders.

Conceptual Frame Work



Research Methodology

This study's major research approach was descriptive surveying. Researchers employed questionnaires to obtain data



from the research population. A Google Docs questionnaire was produced, and the link was distributed to the Food delivery sectors. The first portion of the survey requests basic information about responders. The second section addresses questions about the study's dependent and independent variables. Respondents rated their opinions on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Respondents were picked from diverse food delivery companies in Chennai based on expert judgment and practical concerns. Following data screening, 210 respondents were selected, and questionnaires were chosen for future investigation since they contained all of the important information. The survey data collected from participants was analysed using SPSS. Descriptive statistics involve summarizing the study's variables by determining their means and standard deviations. We opted for the non-probability sampling method because of its suitability for quantitative research, especially when dealing with populations of infinite responses. Additionally, we employed snowball sampling, chosen for its

compatibility with quantitative research and its respondent-driven nature. Moreover, our study is built on the involvement of both sample participants and other individuals who have the potential to contribute to the research. This inclusive approach not only broadens the scope of our investigation but also acknowledges the interconnectedness of individuals within the population.

Analysis & Data Interpretation:

In this chapter, the results of the statistical analysis of the questionnaire data are presented. Statistical tests were conducted using IBM SPSS Statistics

Percentage Consolidation



DEMOGRAPHIC PROFILE	FREQUENCY	PERCENTAGE
AGE		
20 – 25 YEARS	147	70
25 – 30 YEARS	48	22.9
ABOVE 30	15	7.1
TOTAL	210	100
GENDER		
MALE	123	58.6
FEMALE	87	41.4
TOTAL	210	100
EDUCATIONAL QUALIFICATION		
SCHOOL LEVEL	24	11.4
DIPLOMA	37	17.6
UG	79	37.6
PG	70	33.3
TOTAL	210	100
DESIGNATION		
SUPPLY CHAIN ANALYST	24	11.4
FOOD DELIVERY OPERATIONS SPECIALIST	24	11.4
LOGISTICS RESEARCHER	29	13.8
ON-DEMAND FOOD DELIVERY CONSULTANT	33	15.7
POST-PANDEMIC SUPPLY CHAIN STRATEGIST	25	11.9
FOOD DELIVERY SERVICE MANAGER	21	10
SUPPLY CHAIN MANAGEMENT RESEARCHER	21	10
RIDER EXPERIENCE ANALYST	33	15.7
TOTAL	210	100
EXPERIENCE IN YEARS		
5-10 YEARS	124	59
10-15 YEARS	55	26.2
15-20 YEARS	23	11
ABOVE 20 YEARS	8	3.8
TOTAL	210	100

The demographic profile indicates a very young workforce in the on-demand food delivery industry, with 70% of the respondents being young adults between the ages of 20 and 25. In addition, there are more men (58.6%) than women (41.4%), which may be explained by cultural standards or the physically demanding nature of the work. Regarding educational background, the majority (37.6%) have an undergraduate degree, and the next highest percentage (33.3%) is a postgraduate degree, indicating that the workforce is reasonably educated. However, the diversity of educational backgrounds within the industry is shown by the presence of respondents with

qualifications at the school level (11.4%) and diploma level (17.6%). The large proportion of young adults in the employment may be attributed to the on-demand food delivery industry's perceived flexibility and simplicity of entry. Furthermore, the physical demands of the job and cultural beliefs may have an impact on the gender disparity; therefore, more research into potential biases or impediments is necessary.

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Riders work Environment	Between Groups	.134	2	.067	.146	.861
	Within Groups	95.489	207	.461		
	Total	95.624	209			
Economic Consideration	Between Groups	.134	2	.067	.146	.861
	Within Groups	95.489	207	.461		
	Total	95.624	209			
Technological support and tools	Between Groups	.065	2	.043	.086	.911
	Within Groups	101.844	207	.492		
	Total	101.929	209			
Customer Interactions and Feedback	Between Groups	.505	2	.253	.542	.581
	Within Groups	96.452	207	.466		
	Total	96.957	209			
Post covid 19 Supply chain challenges In On Demand Food Delivery	Between Groups	.034	2	.017	.038	.961
	Within Groups	92.447	207	.447		
	Total	92.481	209			

This table, which displays an analysis of variance (ANOVA), evaluates the significance of differences between group averages for a number of variables pertaining to on-demand meal delivery services. The variability that is ascribed to the various groups under comparison is shown in the "Between Groups" row, but the error or unexplained variability is shown in the "Within Groups" row. The significance values (Sig.) for all the factors—"Riders



work environment," "Economic consideration," "Technological support and tools," "Customer interactions and feedback," and "Post-covid 19 Supply chain challenges In On Demand Food Delivery"—are higher than the generally accepted cutoff of 0.05.

Chi-Square Test

Gender			
	Observed N	Expected N	Residual
1.0	123	105.0	18.0
2.0	87	105.0	-18.0
Total	210		

Test Statistics	
Gender	
Chi-Square	6.171 ^a
df	1
Asymp. Sig.	.013

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 105.0.

To ascertain whether two categorical variables have a significant relationship, apply the chi-square test of independence. This test is looking at the correlation between an observed frequency of occurrence and gender in this instance. The null hypothesis states that there is no correlation between the variables and that the observed and predicted frequencies are equal. According to the alternative hypothesis, there is a link between the variables since the observed frequencies deviate from the expected frequencies. At the 0.05 level of significance, the chi-square statistic of 6.171 with 1 degree of freedom and a p-value of 0.013 indicates that there is a significant difference between the observed and predicted frequencies. The observed

frequency (123) for gender 1.0 is higher than the expected frequency (105.0) by 18, while the observed frequency (87) for gender 2.0 is lower than the expected frequency (105.0) by 18, as indicated by the residuals, which reveal the difference between the observed and predicted frequencies. There may be a relationship between gender and the observed frequencies based on this difference between observed and predicted frequencies. Consequently, it is possible to reject the null hypothesis, which states that there is no link between the variables, and come to the conclusion that gender and the observed frequencies have a significant relationship

CORRELATION						
	Riders work Environment	Economic Consideration	Customer Interactions and Feedback	Technological support and tools	Post covid 19 Supply chain challenges In On Demand Food Delivery	
Riders work Environment	Pearson Correlation	1	1.000 ^{**}	.011	.073	.151 [*]
	Sig. (2-tailed)		.000	.876	.292	.029
	N	210	210	210	210	210
Economic Consideration	Pearson Correlation	1.000 ^{**}	1	.011	.073	.151 [*]
	Sig. (2-tailed)	.000		.876	.292	.029
	N	210	210	210	210	210
Customer Interactions and Feedback	Pearson Correlation	.011	.011	1	.199 [*]	.216 [*]
	Sig. (2-tailed)	.876	.876		.004	.002
	N	210	210	210	210	210
Technological support and tools	Pearson Correlation	.073	.073	.199 [*]	1	.271 ^{**}
	Sig. (2-tailed)	.292	.292	.004		.000
	N	210	210	210	210	210
Post covid 19 Supply chain challenges In On Demand Food Delivery	Pearson Correlation	.151 [*]	.151 [*]	.216 [*]	.271 ^{**}	1
	Sig. (2-tailed)	.029	.029	.002	.000	
	N	210	210	210	210	210

** . Correlation is significant at the 0.01 level (2-tailed).

Result And Discussion

In the post-COVID-19 supply chain context, the study identified a number of significant hurdles that riders who provide food on demand must overcome. The unexpected surge in demand for contactless deliveries, which put an excessive amount of work on



riders, was one of the biggest obstacles. Numerous riders complained about having to wait for long amounts of time at restaurants, which caused delivery times to be delayed and customer annoyance to rise. Moreover, the introduction of contactless delivery technologies created obstacles to client and rider communication. It was frequently difficult for riders to confirm orders or get precise instructions from clients, which could have resulted in mistakes or miscommunications. The fact that many consumers were also getting used to the new contactless delivery regulations made this problem worse. During the epidemic, riders faced significant challenges related to safety. Aware of the possibility of catching COVID-19 through intimate contact, riders voiced concerns about their safety and the inadequate protective gear their employers were failing to supply. To further increase their operating expenses, some riders even turned to buying their own masks and hand sanitizers. The study also emphasised the negative impact that this time period had on riders' mental health. A greater workload, the strain of following safety

procedures, and the possibility of contracting the virus all led to elevated levels of anxiety and burnout in the riding community.

The study's conclusions offer insightful COVID-19 era confront. The increase in demand for contactless deliveries brought to light weaknesses in the current delivery infrastructure and brought attention to the need for improved industry adaptation and contingency planning. The establishment of strong communication channels between riders, patrons, and restaurant partners is an important issue that need attention. Effective communication has the potential to reduce misunderstandings, guarantee order correctness, and improve customer happiness in general. One possible approach would be to implement digital platforms or mobile applications created especially for interactions between riders and customers. In addition, motorcyclists' safety concerns highlight how crucial it is to put one's own wellbeing first in emergency situations. Any post-pandemic approach for on-demand delivery services should include providing sufficient personal protective



equipment (PPE), introducing contactless payment choices, and granting access to mental health resources. The report also emphasises the necessity of thorough training programmes to give motorcyclists the abilities and information they need to successfully negotiate evolving protocols and processes. Finally, the results highlight how important it is to create a welcoming and inclusive work atmosphere for riders.

Implication

- The study's conclusions allow for the proposal of a number of workable solutions to the supply chain issues that on-demand meal delivery riders in the post-COVID-19 era are facing.
- First off, order administration and communication might be greatly enhanced by the creation and integration of a specialised digital platform or mobile application for rider-customer interactions. Riders should be able to quickly and easily confirm order information, get precise delivery instructions, and interact with consumers in real

time with this platform. To reduce physical interaction during deliveries, it can also include digital signatures and contactless payment methods.

- Second, collaborations with regional health agencies or groups might be formed to guarantee that sufficient personal protective equipment (PPE) is available and distributed to riders. Regular supplies of masks, sanitizers, and other items could be part of this.

Conclusion

The COVID-19 pandemic has undoubtedly reshaped the landscape of the on-demand food delivery industry, with significant implications for the supply chain and its stakeholders, particularly the riders. This research study has provided valuable insights into the challenges faced by food delivery riders in the post-pandemic era, highlighting their perspectives, experiences, and the evolving dynamics of the industry. By amplifying the voices of riders, this study has shed light on critical issues such as changes in



demand patterns, safety concerns, job security, and the role of digital platforms in addressing their needs. The findings underscore the importance of addressing these challenges to enhance supply chain resilience, improve working conditions, and develop more inclusive and equitable models for the on-demand food delivery sector. Moving forward, it is crucial for industry stakeholders, policymakers, and researchers to collaborate and leverage these insights to implement sustainable solutions that prioritize the well-being and rights of riders. By doing so, the on-demand food delivery industry can not only adapt to the post-COVID-19 landscape but also contribute to the development of more robust and socially responsible supply chains.

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