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EXAMINING SOCIO-ECONOMIC CONDITIONS OF FOOD SMES EMPLOYEES DURING THE COVID-19 PANDEMIC IN HYDERABAD CITY, SINDH, PAKISTAN: AN EMPIRICAL STUDY

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ABSTRACT

This study empirically examines the socio-economic conditions of employees working in food-related small and medium enterprises (SMEs) across Hyderabad City during the COVID-19 outbreak. Recognising that employees' working categories and SMEs are unevenly distributed across the city, we initially employed purposive sampling by selecting food-related SMEs, including food franchises, restaurants, wholesale shops, bakeries, dairies, and grocery stores. Later, using simple random sampling across different city areas under smart lockdowns, we selected respondents with high, medium, and low salaries and wages, including salespersons, service personnel, market vendors, and vegetable and fruit sellers, among others, with varying employment statuses in different small and medium-sized enterprises (SMEs). For data collection, we conducted face-to-face interviews using a structured questionnaire. We applied the ordered-logit model and investigated a series of hypotheses. Our results suggest that the income of medium- and low-category employees, such as waiters, salespersons, cooks, cashiers, and security guards, decreased due to SME closures during lockdowns and an increased likelihood of unemployment. Additionally, social distancing, which was strictly maintained through smart lockdowns, had an adverse impact on the income of employees working in various small and medium-sized enterprises (SMEs), including international franchises, local restaurants, small markets, marts, and food companies. However, employees' children did not drop out of school due to online classes, although their education suffered due to school closures.

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INTRODUCTION

The COVID-19 (SARS-CoV-2) pandemic, which initially emerged and spread from Wuhan City, Hubei province of China, in December 2019, created a challenging situation for everyone and claimed millions of lives worldwide (Abbasi et al., 2020; Mishra, 2020). Globally, industries were closed, trade and tourism declined, stock markets crashed, air flights were suspended, local transportation slowed down or stopped, offices ceased operations, and shops and markets either closed or remained open for a limited time, sustainability and quality of life declined, and unemployment rose during COVID-19 lockdowns (Naseer et al., 2023; Narjis et al., 2022). As a result, labourers (or employees) and the local population suffered from major socio-economic consequences of unemployment, declining income, household poverty, malnutrition, loss of education, social isolation, and media-induced fears based on conspiracy theories (ADB, 2020). Thus, the world economy faced a negative supply shock. For instance, a sudden surge in demand, resulting in price hikes of commodities, as well as an unexpected decrease in the supply of commodities and services, was observed worldwide. As a result, it had a severely adverse impact on national, regional, and global economies (Mishra, 2020). According to the United Nations Development Program (UNDP, 2020), "the COVID-19 epidemic is much worse than a health crisis: it is mainly affecting socio-economic conditions of almost all countries worldwide. Although the impact of the pandemic varies across different countries, it is likely to exacerbate socio-economic inequalities and, ultimately, poverty on an international scale, underscoring the tremendous importance of the Sustainable Development Goals (SDGs).

Almost everything has fallen apart in the world due to this pandemic. This sort of situation has never been so far from 80 years ago. The COVID-19 pandemic has had a severe impact on the global economy, with its negative effects evident in multiple dimensions, including economic, health, educational, social, and other areas, which have been far-reaching. This pandemic has spread globally, and day by day, the ratio of active cases and death rates has increased until recently, which has largely affected the jobs and incomes of people in the country. In Pakistan, the unemployment rate reached its peak, and owners laid off numerous employees due to their inability to pay wages and/or salaries, resulting from lower sales during the lockdowns (Noreen et al., 2020). As a result, the market economy's dynamics were hindered and began to negatively impact the economic viability of firms, as well as small to medium-sized enterprises (SMEs), including market vendors, shops, food markets, restaurants, and shopping malls. The downsizing of employees led to a decline in demand for food items and a severely diminished supply chain. These circumstances adversely affected employment in SMEs, ultimately deteriorating the socio-economic status of individuals who either lost their jobs or received daily (or weekly) wages in SMEs.

Impact of COVID-19 on Pakistan's SME Economy

Not only globally, but the COVID-19 pandemic situation has also claimed many precious lives and created various problems related to socio-economic, health, political, psychological, and technological aspects for people living in Pakistan (Abbasi et al., 2020). Most developed and developing countries, such as Pakistan, have faced socio-economic disadvantages that will take years to overcome and return to their normal situation (Narjis et al., 2022). According to Noreen et al. (2020), Pakistan's gross domestic product (GDP) suffered losses of between 0.8 and 1.3 per cent during the first and second waves of the COVID-19 pandemic in 2020 and 2021, resulting in a decline of nearly PKR 891 billion to PKR 1.6 trillion in its national economy. Across Pakistan, during the smart lockdowns of the early 2020s, PES (2020-21) reports that Pakistan's GDP growth declined from 3.3 per cent to – 0.47 per cent, revealing a negative trend.

The majority of people whose socio-economic conditions were severely affected were daily wage labourers and low-salaried workers employed in food-related Small and Medium Enterprises (SMEs) in Pakistan (Narjis et al., 2022; World Bank, 2020). Food-related SMEs, such as franchise food chains, local restaurants, grocery shops, vegetable and fruit market vendors, milk dairies, and bakeries, play a crucial role in our local and national economy, as they provide a significant percentage of employment and contribute to poverty reduction around the country (Shafi et al., 2020). Hence, it would not be incorrect to refer to it solely in the context of the Food Industry. Undoubtedly, food production and distribution are essential for human well-being. However, the food sector faced several challenges, including sustaining workers' income, job declines, and business productivity, as well as adhering to COVID-19 safety measures during the pandemic, which has been ongoing for more than two years nationwide.

Specifically, SMEs faced a range of challenges, including a decline in demand for agricultural products, supply chain disruptions, export cancellations, issues with raw material storage, transportation disruptions, and business losses during the implementation of smart lockdowns. This situation has further resulted in new complications around the country with rapid and widespread decrease in economic activities, and above all, Food Related Industry and its associated SMEs, were confronted with huge business losses, specifically during COVID-19 lockdowns, even though food sector is the most important segment of our daily economic activities as it provides food as a basic necessity to our population and promises socio-economic survival of low paid workers sustainable.

Overall, the unemployment rate had begun to rise, accompanied by a substantial decline in labour income across the country. The majority of the labour population consisted of employees of small and medium-sized enterprises (SMEs), who were daily wage earners and low-salaried labourers in the country. Labourers with job losses and reduced incomes, mostly in cities and towns, were left with no other option for survival, as there were no other opportunities available during the ongoing pandemic situation. Although the Government of Pakistan initially responded by distributing Rs. 12,000 to working-class households, it took a considerable amount of time for them to recover after losing their jobs and having almost no savings left.

Literature Review

COVID-19 has significantly impacted the everyday lives of people worldwide, resulting in unemployment (or job category), income disparities amongst households, disruptions to children's education and healthcare, food insecurity, and social hardships, as a study conducted by Narjis et al. (2022) in Punjab, Pakistan, also confirmed it. Globally, the overall impact of COVID-19 outbreak situation was recorded very high on accommodation, food sector, real estate, wholesale and retail business, and motor vehicle repairing, whereas it was observed low on utilities (e.g. electricity, gas, water supply, etc.), public and private administration, social work activities, health and education (ILO, 2020).

A detailed study, conducted by Naseer et al. (2023), demonstrates that nearly all sectors of the global economy, including agriculture and food, manufacturing, education, sports, tourism, and entertainment, suffered substantial financial losses. The pandemic resulted in trillions of dollars in economic losses to the global economy (Naseer et al., 2023; Bakar and Rosbi, 2020). For instance, Cutler & Summers (2020) remarkably calculated the cost of the USA's budget deficit during COVID-19, amounting to more than US$ trillion (or approximately 90 per cent of the US GDP). In Pakistan, manufacturing sub-sectors, such as the food, beverages, tobacco, and textile industries, which account for 54 per cent of the total manufacturing, suffered significant business losses due to the imposition of COVID-19 lockdowns (World Bank, 2020).

Shafi et al. (2020) analysed the impact of the outbreak on micro, small and medium enterprises (MSMEs) operating in Pakistan to assist policymakers and practitioners in streamlining the strategies to ease the burden of the current crisis on these businesses. In this study, several issues are investigated that businesses face, including financial (67.9%), Supply chain disruption (47.8%), decrease in demand (44.02%), and reduction in sales and profit (38.04%).

Cho et al. (2020) explored in their study how employment status impacts employees working in the food sector during the COVID-19 pandemic. The primary focus of their study was on food manufacturing and grocery stores (i.e. SMEs), but agricultural production and restaurants were also included for impact analysis to determine whether workers previously employed in food manufacturing and Grocery stores were becoming considerably less likely to continue working in the same industry in April 2020 across the USA. Also, their individual-level analysis confirms that the COVID-19 infection rate in an individual's local labour market has a significant effect on employment changes.

According to Ortega (2020), the massive employment decreases in the restaurant industry have shown that many workers will likely never return to the industry, and as a result, several restaurants will not recover from the COVID-19 pandemic. Although food-related SMEs have used bonuses, higher wages, and various forms of incentives to recruit and retain workers, labour force challenges still pose a huge obstacle for these SMEs (Kang and Terlep, 2020; Premack, 2020; Shanker and Skerritt, 2020). For instance, Werner (2020) reported how the number of workers in the meat processing industry in the USA did not accept continuing to work despite an increase in their pay, as thousands of them were found to have contracted COVID-19, and many died.

According to the study conducted by Sufi and Ahmed (2021), the authors suggest that a high population of youngsters is involved in food-related SMEs. Although the use of Artificial Intelligence and modern machinery helped these SMEs grow faster, the COVID-19 pandemic has socio-economically impacted the entire sector, mainly affecting its workers, who contribute significantly to the Gross Domestic Product (GDP). The study concluded that even the Indian food industry incurred a certain amount of loss, but many workers and new businesspersons still faced significant damages to their lives, for instance, in terms of losing job opportunities and struggling to expand their businesses.

In another study, Aftab et al. (2021) suggested that the major challenge faced by almost 80% of firms in Pakistan during COVID-19 is reduced demand for labour (or employees), in addition to decreased access to funding. Researchers further explained that not all businesses were affected similarly, as smaller businesses, such as small and medium-sized enterprises (SMEs), faced more challenges compared to larger ones. Few firms suspended workers during the pandemic; however, most job removals were temporary and accompanied by lower or delayed salaries. The authors ultimately recommended that the government assist in alleviating this burden by offering more flexible and favourable lending terms to businesses. On the other hand, the most proper way to boost SMEs is through rental subsidies.

For the success of enterprises during a pandemic, a study conducted by Obrenovic et al. (2020) suggests that enterprises with more encouraging leadership, a distributed workforce (or working categories) with incentives, and an adjustable culture are better prepared to sustain business tasks. In contrast, adaptable enterprises enable more informed and decentralised decision-making, leveraging the Internet and Communication Technology (ICT), social media, and online communication mechanisms in their daily business operations. Resultantly, this method helps determine confidence and create a bond with employees, stakeholders, and customers, both during and after a pandemic. Some estimates, reported by PES (2021), indicate that share of SMEs' contribution in the annual GDP of Pakistan is about 40 per cent, and their share is approximately 90 per cent of total enterprise sector, alleviating poverty and unemployment, contributing to health, education, and malnutrition amongst poor households, and minimising gender equality.

Using the ordered logit model, Hossain et al. (2021) empirically analysed the level of awareness among employees in Bangladesh during COVID-19, examining awareness levels through a Likert scale across various working categories of employees, including those working from home, place of work, those who had lost their jobs, and those who were unemployed, as dependent variables. Their findings demonstrate that the level of awareness is statistically significant and influenced by wearing masks (or social distancing), mental trauma, and household income.

METHODOLOGY

Empirical Model

For data analysis, the ordered logit model proved to be more suitable. Using employees' concerns about following COVID-19 measures associated with their working categories across different SMEs as our independent variable (see Table 1), we applied the model, which overall performed better. In this model, there exists an observed or measurable ordinal independent variable, denoted as *Y*, which is represented by a latent variable, *Y**, that is not directly measured (Greene, 2012; Gujarati, 2012). The continuous latent variable, symbolised as *Y**, has multiple threshold points, ranging from 1 to *K* workers' categories across the different SMEs. Let's assume that *Y** latent variable has 5 categories (or threshold points), starting from 0 to 4 (see equation 1). Now, this latent variable can econometrically be represented as follows;

$$Y_i = 0 \quad if \; Y_i^* \leq k_1 \qquad (1)$$
$$Y_i = 1 \quad if \; k_1 \; Y_i^* \leq k_2$$
$$Y_i = 4 \quad if \; k_3 \; Y_i^* \leq k_4$$

Here, $Y_i = \sum_1^N \beta_i \; X_{ki} + \varepsilon_i$, β_i are estimated coefficients (or parameters), $X_i$represents explanatory (or dependent) variables, including socio-economic, SMEs and COVID-19 characteristics (or variables), which are observed, and ε_i is an error (or disturbance) term (see Table 1). Whereas k_1, k_2, k_3, and k_4 represent working, with k_0 as a baseline working category (i.e., most certainly employed).

Research Objectives and Hypotheses

To address the main research issue, our study has five objectives, including to (i) assess the socio-economic impact of COVID-19 on employees of food -related SMEs, (ii) identify and assess the different socio-economic variables affecting the families of these employees, (iii) recognise various measures of COVID-19 and examine as to what extent these employees, (iv) followed these measures to find out and further analyse the linkages between COVID-19 measures and their impact on the socio-economic situation of the different employees of different SMEs, and finally, (v) draw conclusions and make recommendations for the policy makers involved in dealing with COVID-19 pandemic or similar situations at both the provincial and federal levels, respectively.

To accomplish our research objectives, we aimed to test the following four research hypotheses empirically;

1. Not all, but some employees' income suffered adversely across different SMEs because of concerns about the measures of COVID-19.
2. Not all, but a large number of employees' income suffered adversely while serving in the different worker categories, having a variety of concerns related to COVID-19 measures across different SMEs.
3. The socio-economic characteristics of employees serving the different SMEs in different working (or job) categories and having a variety of concerns related to COVID-19 measures do not positively affect their work during the lockdowns, and
4. The COVID-19 measures are not more important than the socio-economic characteristics of employees, as a variety of concerns related to COVID-19 measures implemented varyingly across the different SMEs in different working categories during the lockdowns

Table 1. Employment status and SMEs' working categories.

Coding	Employment status	SMEs working category	Examples
0	Most certainly employed	Managers/Other upper staff	HR manager, Sales manager, Staff controller, etc.
1	Certainly employed	Middle staff	Cashier, Computer operator, Accountant, etc.
2	Undecided	Franchise/restaurants' lower staff	Waiter, Cook, Salesman, Shelf person, etc.
3	Certainly unemployed	Other lower staff	Security guard, delivery person, & parking guy
4	Most certainly unemployed	Food markets' lower staff	Vegetables/Fruits/Meats serving workers

Sampling and Surveys

For implementing a field survey, we first used purposive non-random sampling because different kinds of food-related SMEs and various types of workers' categories are unequally (or unevenly) located across Hyderabad city. Hence, we purposively selected areas in the city where we found different types of SMEs that employed a wide range of worker categories. This sampling procedure aimed to obtain a representative sample of respondents working in these small to medium-sized enterprises (SMEs).

Later, we used simple random sampling to select respondents (or workers) for conducting face-to-face interviews, aiming to collect data. Interviews typically lasted 15 minutes to collect data. The structured questionnaire, initially prepared through a literature review, field observations, and research objectives, was then pre-tested on a small sample to further improve it. It was finally used to collect the required information about the first and second waves of the COVID-19 pandemic, as well as its socio-economic impact on the lives of SME workers.

After data collection and entry into Excel, we applied the relevant coding procedure (e.g., dummy coding and categorical coding). Once the data entry was completed, we performed a detailed statistical and econometric analysis using Stata (2018), based on graphs, descriptive statistics, and regression models, such as an ordered-logit model. We also tried the ordered probit model; however, the ordered logit model performed statistically better than the ordered probit model.

RESULTS AND DISCUSSION

Descriptive Statistics

The descriptive statistics of our sample are presented in Table 2. Eighty-five per cent of the respondents interviewed are males. Married respondents are 46.77 per cent. The average age of respondents is 28.29 years, while their average education is 2.16 years of schooling. On average, respondents' monthly income before the COVID-19 pandemic was Rs. 21,010 per month. However, their monthly income declined to Rs. 16,451 per month during lockdowns. This indicates that employees were working on lower wages or monthly salaries during lockdowns. Despite this setback for employees, a substantial number, comprising 75.81% of the total sample (N = 186), continued to work in food-related small and medium-sized enterprises (SMEs) during the lockdowns. The different types of SMEs were selected based on the respondents (or employees) working in various working categories (our independent variable). Among SMEs, restaurants and franchises comprise the largest portion of respondents interviewed. In contrast, the working categories comprise the majority of the sample, with restaurant staff (e.g., servers, cooks, and cleaners) accounting for the higher portion at 59.14% (see Table 2).

Table 2. Descriptive statistics (Socio-economic, SMEs and COVID-19 characteristics).

Variable	Variable description (Total Sample, N = 186 respondents)	Percentage
Respondents' Socio-economic characteristics		
Gender	(Male = 1, Female = 0) in percentage	85.48 %
Married	(Married = 1, Not married = 0) in percentage	46.77 %
Age	Average age in years	28.29
Education	Average schooling in years	02.16
Income	Average income earned before COVID-19 (Rs/month)	21,010
Income COVID-19	Average income earned during COVID-19 (Rs/month)	16,451
SMEs characteristics		
Working employees	Those who still worked during COVID-19	75.81%
SMEs types	Different types of SMEs	100 %
Int. Franchise	International franchises like KFC, McDonald's, etc	11.29 %
Local Franchise	Local franchises, such as KNN and PK, etc.	26.34 %
Restaurants	Local restaurants, hotels, cafes, etc.	36.02 %
Bakeries/Dairies	Bakeries and milk dairies	09.14 %
Veg & Fruits	Vegetables, fruits, meat shops & markets	23.66 %
Food Company	Food delivery companies like Boulevard, etc.	04.84 %
Working categories	Different working categories of employees in SMEs	100 %
Managers/Upper staff	HR manager, Sales manager, Staff controller, etc.	06.45 %
Middle staff	Cashier, Computer operator, Accountant, etc.	13.98 %
Restaurants' lower staff	Waiter, Cook, Salesman, Shelf person, etc.	59.14 %
Other lower staff	Security guard & delivery/parking guy	13.44 %
Food vendors' lower staff	Vegetables/Fruits/Meats serving workers	06.99 %
SMEs Incentives	Incentives for employees by SMEs during COVID-19	100 %
No incentive	No incentives for employees	68.82 %
Cash	Some cash provided to employees	13.44 %
Rationing	Food Ration provided	10.22 %
Free masks & sanitisers	Free masks & sanitisers provided	07.53 %
COVID-19 Measures	Measures followed by employees during COVID-19	100 %
SOPs	Standard Operating Procedures during COVID-19	25 %
Social distancing	Social distancing between people	12 %
Avoiding crowd	Avoiding crowded places, such as markets & meetings.	10 %
Wearing mask	Wearing masks in public places	26 %
Using sanitiser	Using sanitisers before & after touching things	16 %
Avoid shaking hands	Avoid shaking hands when meeting people	11 %

Source: Own field survey (2021) and analysis.

We selected 6 types of food-related SMEs in Hyderabad city (see Table 3). We defined the income variation variable as the difference between an employee's job income before COVID-19 lockdowns and their job income during the lockdowns. Not all, but a large number of employees' incomes suffered adverse effects across different SMEs. Later, we will further test this first hypothesis.

Regarding the different incentives provided by SMEs to their employees, the majority, which is equal to 68.82%, did not receive any incentive. However, 13.44% of respondents (or employees) received cash, and 10.22% of them received food rations from their SMEs. Regarding COVID-19 measures implemented by SMEs and followed by their employees, the majority of workers, equivalent to 25%, followed standard operating procedures (SOPs), while 25% of respondents wore masks. However, our sample exhibits that maintaining social distancing, avoiding crowded places, using sanitisers and shaking hands were not followed by the majority of employees.

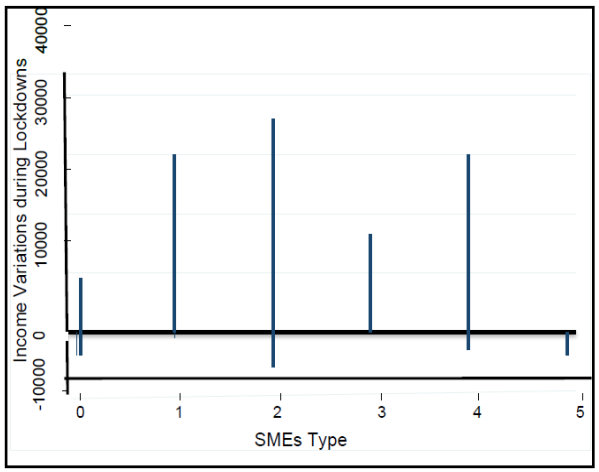

Figure 1. Employees' income variations in different SMEs during lockdowns; Source: Own field survey (2021) and analysis.

During the last two years of COVID-19 lockdowns, the job income of the employees working in the national franchise and bakeries and milk dairies has either remained the same or increased, whereas the job income of those working in the international franchises, local restaurants, for example as waiters and cooks, and vegetables, fruit and meat vendors, was negatively affected (e.g. their income became negative or was less than zero, indicating their indebtedness). Surprisingly, the job income of workers in food delivery companies fell below zero, indicating that their employees had no income, except tips, but incurred debt during the COVID-19 lockdowns (see Figure 1).

We generalised 5 types of employee categories working in the food-related SMEs located in Hyderabad city (see Table 4). Except for managers and other upper staff, as well as food market vendors' lower staff categories, the job income of the middle staff and other lower staff categories varied adversely (i.e., a negative level, which indicates indebtedness or taking loans). However, employees working in the franchise and local restaurants overall suffered more, as their job income was significantly lower than that of employees in other categories (see Figure 2). Not all, but a large number of employees' incomes suffered adverse effects while serving in various working categories across different SMEs. Later, we will further test this second hypothesis.

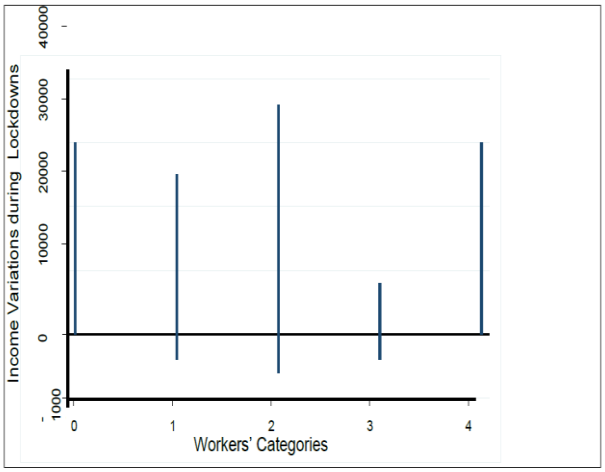

Figure 2. SMEs working categories and their income variations during lockdowns; Source: Own field survey (2021) and analysis

Table 3. Income variations (decreased or increased) Enterprise-type-wise.

Coding	SMEs Type	Examples
0	International Franchises	KFC, McDonald's, Pizza Hut, etc.
1	National Franchises	Food Panda, KNN, etc.
2	Local Restaurants/Cafes	Food and Tea restaurants
3	Bakeries and Dairies	Local bakeries and milk dairies
4	Vegetables/Fruits/Meat shops/Marts	All local shops and food markets
5	Food companies	Food delivery companies like Boulevard, etc.

Table 4. SMEs working (or Job) categories and their income variations during lockdowns.

Coding	SMEs Working Category	Examples
0	Managers/Other Upper staff	HR manager, Sales manager, Staff controller, etc.
1	Middle staff	Cashier, Computer operator, Accountant, etc.
2	Franchise & Restaurants' lower staff	Waiter, Cook, Salesman, Shelf person, etc.
3	Other lower staff	Security guard & delivery/parking guy
4	Food markets' lower staff	Vegetables/Fruits/Meats serving workers

Model Results

We estimated Ordered-Logit models that include SMEs, socio-economic, and COVID-19 characteristics, which significantly influence the dependent variable, referred to as Working Categories (see Tables 1 and 5). In comparison to Model 1 and Model 2, Model 3 includes more relevant variables and therefore performs better than the other ordered-logit models. Model fit statistics for Model 3 reveal that Pseudo R^2 is higher, whereas its LR ratio is relatively lower. Also, the value of AIC is 414.671, which is comparatively lower. These indicators suggest that Model-3 overall performs well. Enterprise types and respondents' income are statistically significant at the 1% level, whereas gender is statistically significant at the 5% level. Similar is the case with other variables, which are significant at the 5% level. For example, both children dropped out when respondents' income declined, and social distancing variables affect the Working categories (our independent variable) in positive and negative ways, respectively. This suggests that when a respondent's children are dropped from school, they may switch to another job (or working) category, regardless of how low-paid it is. The main reason behind this could be unemployment during lockdowns. In addition, social distancing has had a highly negative impact on working (or job) categories, possibly because many lower-level staff employees working in restaurants, cafes, and food markets lost their jobs as social distancing measures were strictly implemented. For example, customers were not allowed to eat food inside; only takeaways were allowed.

Hypothesis Testing Results

Now, we test a series of the following hypotheses,

Hypothesis – 1 (Null): Employees' income was not adversely affected while working in different working (or job) categories during the COVID-19 lockdowns.

Hypothesis – 1 (Alternative): Employees' income overall suffered adversely while working in the different job categories.

Using the Kruskal-Wallis non-parametric test, as applied by Talpur and Mari (2021), with 4 degrees of freedom (i.e., the number of job categories = 5), the Chi-squared statistic is 30.597 (p-value = 0.0001). As the p-value is much less than the p-value = 0.01 or 1 % statistical significance level, we therefore reject the Null Hypothesis that a large number of employees' income did not suffer adversely while working in the different job categories during the COVID-19 pandemic. This means we accept the Alternative Hypothesis that a large number of employees' income has overall suffered adversely while serving in the different working (job) categories across different SMEs In ordered- logit model (see Tabel 4), a negative coefficient on income variation which is equal to – 0.00006 and statistically highly significant at less than 1% level of significance further support these results that the income of employees working in different categories was negatively affected during COVID-19 outbreak situation.

Hypothesis – 2 (Null): Employees' income did not suffer adversely overall while working in the different SMEs during the COVID-19 lockdowns.

Hypothesis – 2 (Alternative): Employees' income suffered adversely while working in the different SMEs.

Using the Kruskal-Wallis non-parametric test (Talpur and Mari, 2021) with 5 degrees of freedom (i.e., the number of SMEs = 6), the Chi-squared statistic is 32.543 (p-value = 0.0001). As the p-value is much less than the p-value = 0.01 or 1 % statistical significance level, we therefore reject the Null Hypothesis that a large number of employees' income was not adversely affected across different SMEs. This means we accept the Null Hypothesis that the income of a large number of employees has suffered adversely across different SMEs overall during the COVID-19 lockdowns.

Hypothesis – 3 (Null): The socio-economic characteristics of employees serving the different SMEs in different working (or job) categories do not positively affect their work during the COVID-19 lockdowns.

Hypothesis – 3 (Alternative): The socio-economic characteristics of employees serving the different SMEs in different working categories positively affect their work during the lockdowns.

Following Talpur and Mari (2021), we applied the Log-Likelihood Ratio (LR) test, with 2 degrees of freedom and the Chi-squared statistic equivalent to 14.04 (p-value = 0.001). As the p-value is much less than 0.01, the 1% statistical significance level, we reject the Null Hypothesis that the socio-economic characteristics of employees serving different SMEs in various working categories do not positively affect their work during lockdowns. This means we accept the Alternative Hypothesis that the socio-economic characteristics, such as gender and income, of employees serving different SMEs in various working categories positively affect their work during lockdowns.

Table 5. Ordered-logit models (SMEs type, socio-economic & COVID-19 characteristics).

Variables (Independent Variable = Working Categories' Concerns)	Model – 1 Coefficient (St. Error)	Model – 2 Coefficient (St. Error)	Model – 3 Coefficient (St. Error)
SMEs Types			
Enterprise type	0.573*** (0.113)	0.513*** (0.115)	0.330*** (0.125)
Socio-economic characteristics			
Gender (Male = 1)		0.795* (0.441)	0.925** (0.453)
Personal Income		0.0003** (0.00013)	0.0003*** (0.141)
Personal Income squared		- 6.85-e09** (2.68e-09)	- 8.34-e09 *** (2.80-e09)
COVID-19 characteristics			
Income Variation			- 0.00006*** (0.00002)
Children dropped out			0.943 ** (0.425)
Social distancing			- 0.808 ** (0.356)
Model-Fit statistics			
Pseudo R^2	0.060	0.091	0.13
Log Likelihood (LR)	- 212.946	- 205.927	- 197.336
Akaike Information Criteria (AIC)	435.893	425.855	414.671
Observations (N = Sample)	186	186	186

Source: Own field survey (2021) and analysis.

Hypothesis – 4 (Null): The COVID-19 measures are not more important than the socio-economic characteristics of employees serving the different SMEs in different working categories during the COVID-19 lockdowns.

Hypothesis – 4 (Alternative): The COVID-19 measures are more closely related to the socio-economic characteristics of employees serving different SMEs across various working categories during the lockdowns.

Following the approach of Talpur and Mari (2021), we re-applied the Log-Likelihood Ratio (LR) test, with 3 degrees of freedom, and its Chi-squared value was 17.18 (p-value = 0.000). Observing that the p-value is much less than the p-value = 0.01 or 1 % level of statistical significance, we reject the Null Hypothesis that the COVID-19 measures are not more important than the socio-economic characteristics of employees serving the different SMEs in different working (or job) categories during the lockdowns. This means we accept the Alternative Hypothesis that the COVID-19 measures, such as income variation, children dropping out due to lower income, and social distancing, are more important than the socio-economic characteristics of employees serving different SMEs in various working categories, positively affecting their work during the lockdowns.

CONCLUSIONS AND RECOMMENDATIONS

This research study aimed at empirically analysing the impact of COVID-19 lockdowns on socio-economic characteristics of mostly workers (or employees) in the different working (job) categories in the different food-related SMEs located across Hyderabad city, Pakistan. We first selected purposive sampling, knowing that the different kinds of food-related SMEs and various types of workers' categories are unequally (or unevenly) located across the city. Thus, we purposively selected areas in the city where we found different types of SMEs with a wide range of worker categories. Afterwards, we used simple random sampling to select respondents (or workers) for conducting face-to-face interviews using a structured questionnaire, to collect data. After data collection, we performed a detailed statistical and econometric analysis, utilising graphs, descriptive statistics, and regression models, such as an ordered-logit model. All variables, including socio-economic, SME, and COVID-19 characteristics, were found to be statistically significant. Enterprise types, respondents' income, and gender are statistically significant. Likewise, other variables, for example, when both children dropped out and respondents' income declined, and social distancing variables affect the Working categories (our independent variable) in positive and negative ways, respectively. This suggests that when a respondent's children are dropped from school, they may switch to another job (or working) category, regardless of how low-paid it is. The main reason behind this could be unemployment during lockdowns. In addition, social distancing has had a highly negative impact on working (or job) categories, possibly because many lower-level staff employees working in restaurants, cafes, and food markets lost their jobs as social distancing measures were strictly implemented. For example, customers were not allowed to eat food inside; only takeaways were allowed. These findings were further supported by hypothesis testing. Our research concludes that a large number of employees' incomes suffered adversely across different SMEs. Also, the socio-economic characteristics of employees serving the different SMEs in different working (or job) categories positively affect their work during the lockdowns. Furthermore, our research results indicate that the COVID-19 measures, such as income variation, children dropping out due to lower income, and social distancing, are more significant than the socio-economic characteristics of employees serving different SMEs in various working categories, which positively impact their work during lockdowns.

Based on our research analysis, we propose the following recommendations for policymakers to ensure the future sustainability of SMEs in the event of a COVID-19-like situation. Firstly, support will be required for food-related small and medium-sized enterprises (SMEs), specifically those that employ a large number of daily wage earners and small salaried workers, in terms of short-term payment credit with the lowest interest rates, tax breaks, and subsidies. For example, both the provincial and federal governments can actively play their role as a third-party (or guarantor) with the banking sector or financial agencies operated by non-governmental organisations (NGOs). Secondly, other financial options could be used, for example, small portions of salary as an advanced payment to employees every week, but it must be supported legally. Thirdly, salaries and wages, in terms of partial cash or cash-in-kind (e.g., food rationing), need to be implemented. Fourthly, the livelihood of employees can be ensured by offering them various alternative options. For instance, whether they need their salaries to be paid in cash, in kind (e.g., food or grocery items), or to cover some of the school fees for their children, medical expenses, and other similar expenses. Finally, our research suggests lowering the market prices of essential food items through subsidies to ensure food security. For instance, employees who have lost their jobs or income may struggle to afford basic food and grocery items.

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