The Economic Effects of the COVID-19 Pandemic on the Market Vendors in Kampala City in Uganda

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Abstract

Ever since the COVID-19 pandemic struck Uganda, policymakers and researchers emphasised the pandemic's health effects at the expense of the economic effects. The cardinal aim of this study was to examine the economic effects of the pandemic on the well-being of the market vendors in Kampala city. The specific objectives of this study were to examine how the COVID-19 pandemic economically affected the market vendors in Kampala and to determine if the pandemic was a demand or supply-side shock. The data was obtained through primary sources where market vendors were interviewed through a structured questionnaire captured on the ODK tool, then exported to STATA 14 for data analysis. The study employed the Blinder-Oaxaca (B-O) decomposition technique, originally used in labour economics, to decompose earnings gaps and estimate the level of discrimination. This decomposition method analyses changes in a given variable over time. Descriptive statistics such as means, frequencies, and percentages were generated to gain insights into the data. Consumption and Sales were used as proxies for demand, whereas the proxy for supply was production. The decomposition results from the Oaxaca estimates show that consumption, sales, and production reduced after the introduction of the COVID-19 restriction. The pandemic affected the market vendors economically through reduced consumption, sales, and supply chain disruption. It is recommended that the government develop a framework to provide appropriate support in the form of income support, access to low credit, and the building of the digital capacity of market vendors to help manage the adverse effects of pandemics in future.

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Introduction

The COVID-19 pandemic first hit China, with the first case declared Wuhan in 2019 (WHO, 2020). Uganda registered the first case on March 21 2020. As of June 25 2021, the total cases registered worldwide were 180,847,411, with 3,917,924 deaths and 165,486,420 recoveries (Johns Hopkins University, 2021). In Uganda, as of June 25, 2021, the total number of cases was 75,537, with 781 deaths and 50,350 recoveries (Ministry of Health, 2021). To curb the negative effects of the Pandemic, the Uganda government devised interventions, including lockdowns (Margini, et al., 2020). The first lockdown occurred on March 18, 2020 to May 21,2020 (Presidential Press Unit, (PPU), 2020; Uganda Media Centre, 2020; Parliament of the Republic of Uganda, 2020, while the second lockdown started on June 18, 2021 to 30.07.2021. The pandemic interventions primarily impacted services that were not directly related to essential needs, such as small and medium-scale enterprises (SMEs) and market vendors who were not directly involved in food distribution. Essential sectors like health were left to operate amidst the observance of standard operating procedures.

This study attempts to investigate the effects of COVID-19 containment measures on market vendors in Kampala City. The assumption is that the pandemic affected market vendors in Kampala city more than in other cities, as it was the epicentre of COVID-19. The market vendors fall into the category of SMEs (KCCA , 2019). The foodstuff vendors were allowed to operate under very stringent conditions, like residing in the markets, while the consumers were restricted in movement. This creates an interesting scenario of possible demand and supply shocks in the sector that is worth studying. In China, the lockdown directives caused negative effects on the economy (Mohsin, Hongzhen, & Syed , 2021; McKibbin & Fernando, 2020; Qian & Fan, 2020). Although several studies have examined the effect of COVID-19 on SMEs in Uganda (EPRC, 2022; Belitski, Guenther, Alexander , & Thurik, 2022), there is no study exploring the plight of market vendors. This study contributes to understanding the economic effects of COVID-19 on market vendors in Kampala.

At the macroeconomic level, Uganda's Gross Domestic Product (GDP) has been declining ever since the COVID-19 pandemic struck. In 2020, real GDP was reduced by 0.5% after rising by 7.5% in 2019 (AfDB, 2021). The literature suggests that stringent COVID-19 containment measures adversely affect the well-

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being of the population. This covers the people's physical, mental, economic, social and spiritual health. The psychosocial effects of COVID-19 include stigmatization, anxiety, frustration, loneliness, stress, and social disparities (Belitski et al., 2022), depression, suicide, and panic attacks. The related social effects include housing instability, food insecurity and domestic violence (Briggs & Thoai , 2020). The mental effects are manifest in mental health-related problems. The health effects of COVID-19 are manifest in health inequalities (Poudel & Subedi, 2020). The economic effects relate to increased unemployment, economic losses, economic distress, economic instability, increased poverty and job insecurity. The economic effects on business operations include loss of customers, less operating hours, job cuts, reduced sales, and supply chain disruptions (Belitski et al., 2005). In this study, we are particularly interested in investigating the economic effects of COVID-19 on market vendors in Kampala city.

On the demand side, the COVID-19 pandemic could potentially reduce personal incomes due to high hospital bills, workplace absenteeism, and a reduction in productivity. On the supply side, the pandemic is associated with supply chain distortions (Pak, et al., 2020). The economic shocks include income shocks associated with a loss in income Martin, et al., (2020), and wage shocks associated with wage cuts or lack of access to paid employment (Rio-Chanona et al., 2020). The labour shocks constitute losses in employment opportunities. The COVID-19 pandemic led to disruptions in the economies, with the immediate shocks being the demand and supply shocks. The current study attempts to understand these shocks in relation to market vendors, a key segment of SMEs.

A decline in the global economy due to the COVID-19 pandemic adversely affected Uganda's economy (PWC, 2021). PWC's study is, however, quite generic, and it does not exhaustively discuss the impact of the pandemic on SMEs. In Uganda, the medium, small and micro enterprises (MSMEs) comprise 90% of the private sector and contribute 20% of the country's GDP (EPRC, 2022). The MSMEs in Uganda provide employment to 55% of the female population and almost 70% of the youth. The loss of jobs in the MSME sector that provide employment opportunities to the most vulnerable, threatens to worsen the existing social inequalities (Belitski et al., 2020). According to some authors, females (Gavura & Reľovský, 2005) and young workers in self-employment are more affected (EPRC, 2022). The SME sector experienced the highest wage cuts of up to 61%. The job losses in the MSME sector stood at an estimated 41%. Martin, et al., (2020) analysis of the high lay-offs experienced in retail trade during the pandemic, supports this.

Since the World Health Organization (WHO) announced COVID-19 as a worldwide pandemic on March 11, 2020, the economic well-being of the market vendors in Kampala city has been on a negative trajectory (WHO, 2020). Market vendors have been grappling with the negative effects of COVID-19. A close analysis of the macroeconomic indicators revealed a rise in inflation from 2.87% in 2019 to 3.7% in 2020. The level of unemployment rose from 1.84% in 2019 to 1.92% in 2020 and reached 2.94 % by the end of 2021 (UBOS, 2021; UBOS, 2020). During the pandemic, 10.2% of the households slipped back into poverty in 2020, which affected their consumption levels (UBOS, 2021). A fall in consumption represents a negative demand shock. A fall in demand usually triggers a similar supply fall, causing a negative supply shock. Oftentimes, demand and supply shocks simultaneously occur (EPRC, 2022; Islamaj et al., 2021).

COVID-19 is a new pandemic, and researchers are continuously gathering information about the possible ways this disease could affect the economic well-being of the population, especially SMEs. Most of the attention is being paid to the health impacts of the COVID-19 pandemic, and the economic effects are being ignored. This study aims to address the research gap by providing a deeper understanding of the economic impact of the COVID-19 pandemic on market vendors in Kampala city. The primary objective of the study was to examine how the pandemic affected market vendors from an economic perspective. Specifically, the study sought to achieve the following objectives: (1) investigate the economic effects of the COVID-19 pandemic on market vendors in Kampala City; (2) determine whether the pandemic acted as a demand-side shock; and (3) assess whether the pandemic caused supply-side disruptions.

Literature Review
The Concept of Shocks
A shock is a disruption in normal activities caused by external happenings like natural disasters Gozgor & Lau (2021) or a pandemic like COVID-19. The shock may have immediate, short term and long-term impacts on the economy. This study concentrates on the immediate and short-term effects of the economic shocks operationalized as demand and supply shocks. A demand shock is an unexpected event that may increase (positive) or reduce (negative) the demand of the product. The increased demand for hand sanitizers during the pandemic is an example of a positive demand shock. The COVID-19 pandemic affected aggregate demand through the labour lay-offs, leading to a reduction in the purchasing power. Business enterprises recorded reductions in profitability levels, sales revenue,

business turnover and prices (EPRC, 2022). This negative demand shock resulted in the economy's contraction and caused a decline in aggregate supply.

A supply shock is an unexpected event that disrupts the supply chain of a product (Brinca, Joao, & Miguel, 2020). A supply shock is positive when it leads to increased employment, production and a fall in product prices. A supply shock is negative when it leads to decreased production, increased unemployment and increased product prices. Since the COVID-19 pandemic, Uganda has experienced shortages of drugs, industrial chemicals, medical equipment, and consumer goods like smart devices (MoFPED, 2020). The countrywide lockdowns culminated in the contraction of economies, increased the levels of unemployment and worsened the conditions of the poor people (Martin et al., 2020). The economic impacts of COVID-19 may be direct or indirect. The impacts may include a fall in household consumption due to a lack of income. Poor people may become poorer, which widens social inequalities. The pandemic affects different genders differently Briggs & Thoai (2020), with the women and youths being the most adversely affected (EPRC, 2022; Gavura & Reľovský, 2005).

The shocks cause a sharp drop in consumption and investment (McKibbin & Fernando, 2020). The COVID-19 disruptions in output simultaneously affected the demand and supply factors. An initial supply shock, the inability to access the workplace, results in demand deficiency due to a lack of income. Supply shocks dominate economies with a large manufacturing sector, while demand shocks are common in economies with forward linkages that mainly export final goods to the rest of the world (Islamaj et al., 2021). Uganda, which is the study setting, is neither a manufacturing economy nor an exporting country. Investigating how the demand and supply shocks are playing out in such an economy is fascinating.

SMEs provide employment to most of the vulnerable groups in developing countries. Martin et al., (2020) recommend policies to support poor people, such as income support and related benefits, to be more appropriate. Along the same line, Rio-Chanona et al., (2020) recommend using fiscal policies to increase poor people's spending. Formulating an appropriate policy response depends on clearly understanding the problem and its cause (McKibbin & Fernando, 2020). Tax cuts stimulate demand, causing a positive shock in demand.

Globally, governments provide support to the SMEs using policies such as monetary, fiscal, health (McKibbin & Fernando, 2020) and digital support (Belitski et al., 2022; EPRC, 2022). In the UK, the self-employed were supported under the self-employment income support scheme. In Germany, tax support was provided to businesses and start-ups affected by COVID-19. The US government provided support to small businesses through the Paycheck Protection Program

(PPP). The different responses adopted by the different countries testify to the need to specify a policy in line with the cause. The policy response to manage the shock, Chavarín et al., (2021), is dependent on a clear understanding of the type and nature of the shock. By increasing government spending or lowering the interest rate, McKibbin and Fernando (2020) can manage deficiencies in demand. Islamaj, et al., (2021) suggest using social safety nets and other related social protection measures to manage the supply-related shocks.

The Economic Effects of COVID-19
The COVID-19 containment measures caused business disruptions and the associated economic shocks (Martin et al., 2020). Economic shocks are unexpected macroeconomic shocks that may positively or negatively impact the economy. When COVID-19 set in, countries experienced falls in the projected levels of economic growth. China reported a drop in GDP of 6.8 in the first quarter of 2020 (McKibbin & Fernando, 2020; Qian & Fan, 2020). The GDP growth rate for Uganda was lower than the average of 5.2% over the previous five years (Gavura & Reľovský, 2005).

Qian and Fan (2020) studied the economic impact of COVID-19 at the individual level using data from Mainland China from March to April 2020. The interest was in examining the income changes as a result of the pandemic. The findings revealed that populations more prone to COVID-19 cases, like the informal sectors, were more vulnerable to income losses. The study revealed that half of the surveyed population suffered income losses due to job losses. The study recommended strengthening public policies oriented towards the vulnerable and marginalized groups. The COVID-19 pandemic adversely affected small businesses as they offer services that require a lot of physical contact (Belitski, et al., 2022). Restricted movement leads to a drop in employment and loss of wage opportunities.

McKibbin and Fernando (2020) investigated the potential global direct and indirect economic costs of COVID-19. The economic costs include illness costs that prevent one from work or time lost caring for the sick. The illness is linked to both changes in supply and aggregate demand. Absenteeism from work due to sickness is an example of labour   supply shocks. The disruption in the supply chain is associated with increases in the costs of production, which discourages investment and further employment. This scenario explains the COVID-19 pandemic as a simultaneous demand and supply shock. Research indicates the existence of a negative relationship between pandemic related uncertainties and household consumption in both China and the US, Gozgor and Lau (2021)

recommended the use of expansionary fiscal policies to sustain economic performance.

COVID-19 as a Demand-side and Supply- side Shock

When people lose employment, they lose a source of income. Without income, people's demand for goods and services is reduced, which is a demand shock. The demand shock adversely affects the service sector. During the pandemic, the supply shocks tend to exceed the demand shocks. The leisure, transport, retail trade, and hospitality industry, Chavar´ın et al., (2021) and Brinca et al., (2020), the MSMEs and education sector were severely affected (EPRC, 2022). Positive demand shocks were recorded in sectors like telecommunication and groceries (Brinca, Joao, & Miguel, 2020). In Mexico, the social distancing measures and declining incomes for businesses and households contributed to decreased domestic demand. The demand shocks dominated the Mexican economy, except for the manufacturing sector, where the supply factors dominated. In Uganda, the manufacturing sector created over 4000 jobs during the pandemic, representing a positive supply shock (EPRC, 2022).

A supply shock is an unexpected event that disrupts a product's supply chain, leading to a sudden change in price. A supply shock is positive when it leads to increases in employment and production and a fall in product prices. A supply shock is negative when it leads to decreased production, increased unemployment, and usually increased product prices. The reduction in supply culminates in a fall in the country's GDP. Services such as restaurants, transport, entertainment and accommodation are dominated by demand shocks, Rio-Chanona et al., (2020), as the population try to avoid infections. The containment measures resulted in labour lay-offs that left segments of the population without income, leading to a fall in aggregate demand. Without adequate demand, investments are discouraged, and a downward spiral in output, employment, income and demand may ensue. Without government support, poor people become more vulnerable to miserable situations during lockdowns (Poudel & Subedi, 2020).

Fiscal support for tax cuts increases the demand for goods and services. The fiscal support should lead to increases in the production of goods and services, or else it may turn out to be inflationary. Supply shocks during pandemic periods are mainly in the form of labour supply shocks because of restrictions on labour at home, sickness, or death. Non-essential services, including restaurants, tourism, salon services, and accommodation, have been significantly impacted by the pandemic. Supply and demand shocks during this period tend to move in tandem but exhibit varying intensities, as noted by Chavarría, Gómez, and Salgado (2021)

and Brinca et al. (2020). In the short term, supply shocks may even surpass demand shocks. Essential workers, particularly those in the health sector, are less susceptible to supply shocks.

Methods
Research Design
The study adopts the Blinder-Oaxaca decomposition technique originally used in labour economics to decompose earnings gaps and estimate the level of discrimination. This decomposition method analyses changes in a given variable over time. The method was popularized in the economics literature by Blinder (1973) and Oaxaca (1973). It was used earlier in sociology Siegel (1965) and Duncan (1968) and before that in demography (Kitagawa, 1955). The economics literature first used the approach to analyze the determinants of male/female earnings differentials (Barrera-Osorio et al., 2011). Today, the method is extensively used to analyze ethnic earnings differentials, public/private sector earnings differentials, earnings differentials by socioeconomic background, to test the screening hypothesis, and to test the effectiveness of a job-training program, among others. This study adopted the same technique to decompose the differences in the market vendor consumption, sales, and production before and after COVID-19 restrictions.

Study Area
The study was conducted in the five divisions of Kampala City. These Divisions are Kampala Central, Lubaga, Makindye, Nakawa, and Kawempe divisions, as shown in Figure 1.
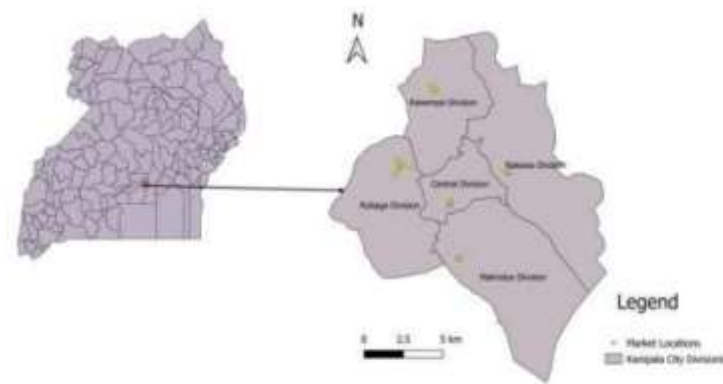
Figure 1: Map of the Study area

Sample Size and Selection

The study sample was the market vendors in Kampala City in the divisions of Kampala Central, Lubaga, Makindye, Nakawa, and Kawempe. The total estimate of the market vendors operating in the above divisions is over 145,000 (KCCA, 2019). The study sample was arrived at using simple random sampling techniques. The targeted sample was 385 using Yamane, 1967 formula $n = \frac{N}{1+N\,(e)^2}$. Given the COVID-19 pandemic restrictions at the time, we were not able to access the targeted sample. To avoid bias, we decided to randomly select 25 respondents per market proportionately through a lotterymethod using the vendors list provided by the market leaders. Proportional sampling was used to ensure a fair representation of the market vendors from each division in the study. The assumption behind the proportional sampling was that each division fairly has a similar number of market vendors. The activities done in one market are similar to other markets, and all markets face the same COVID-19 restrictions.

Data Collection Methods and Instruments

The main study instrument was the questionnaire, which was used to capture the views of the market participants using a digitized system in the Open Data Kit (ODK). This questionnaire was pilot tested using 15 participants outside the study

area (Market vendors from Jinja Central Market). Based on the results of the pilot test, the instrument was modified before it was finally used in data collection. Stakeholder workshops were conducted to help the researchers understand the context and receive support from the key market players. The stakeholders also helped to validate the study instruments and the results. During data collection, research ethics of confidentiality, anonymity, privacy and informed consent were observed. The respondents were clearly explained to the purpose of the research before administering the questionnaire.

Model Specification

The theoretical model is specified as follows:

$$Y_{i,C,S,P} = T_{C,S,P}(HHsize_i, Gender_i, Education_i, Business_i, Decision\ maker_i, Fiscal\ policy_i, Monetary_i, \epsilon_i) = \qquad (i)$$

where Y_i is the observed consumption, sales and production of the market vendor i, C, S, P, which are a function ($T_{C S P}$) of a vector of household size, gender, education level, business type, decision making, fiscal policy and monetary policy and ϵi is an additive error, which includes all the omitted variables. The subscripts on the formula are defined as; $C = Consumption, S = Sales, and\ P = Production.$

The model's linear specification was as follows;

$$Y_{i,C,S,P} = \beta = {}_1\beta\ HHsize_1 = \beta\ Gender_1 = \beta_i\ Education_1 \mp \beta\ Decision\ maker_i = \beta\ Fiscal\ policy_1 = \beta_i\ Mo\ \epsilon_i \qquad (ii)$$

To decompose the model, we let $ln\left(Y_{C S P}\right)_A$ and $ln\left(Y_{C S p}\right)_B$ be the means of the (natural) logs of monthly market vendor's consumption and sales after and before COVID-19 pandemic outbreak

$$Where\ A = After\ COVID\ 11\ restriction, B = Before\ COV.$$

We specified the general decomposition model in the equation (iii) below:

$$ln_{\left(Y\right.}^{}\left(Y\, c\, s\, P_A\right) = ln_{\mathcal{E}\,,S\,,P}{}_B = X_A\,\beta_A = {}_B X\, {}_{B_l}$$
(iii)

Where X_A and X_B are vectors containing the means of the variables for after COVID-19 consumption and before COVID-19 consumption, respectively, and β_A and β_B are the estimated coefficients

$$ln\left(C\,o\,n\,s_A n\,p\right) = ln\left(C_B o\,n\,s_{\!A}\,\mu_A\right) = {}_B X_B$$
(iv)

$$ln\left(S\,a\,l_B s\right) = ln\left(S_B a\,l\,e\,s_A\right)_A = X_B\,\beta$$
(v)

$$ln\left(Pr\,o\,d\,n\,c\,t_{\!A} io\,n\right) = ln\left(\underline{P\,r_B d\,n\,c_A ti\,\rho\,n}\,\beta_B\right) = X_B$$
(vi)

The equations (iv)-(vi) represent the consumption, sales and production Blinder-Oaxaca decomposition model after and before COVID-19 pandemic outbreak for the welfare of the market vendors in Kampala city.

Data Analysis and Presentation
The data was first extracted from ODK and uploaded to Excel. Later, this data underwent cleaning and renaming of variables before it was analysed using STATA 14. Descriptive statistics such as means, frequencies, and percentages were generated to gain insights into the data. Then, the Blinder- Oaxaca decomposition was run to determine the existence of either the demand or supply shock or both during the COVID-19 pandemic.

Results
In this section, we present results from the research findings.   We start by presenting results from the descriptive statistics followed by presentation of results from the estimated model. In Table 1, the descriptive statistics results are presented while in tables 2 and 3, results from the parameter estimates from the Blinder-Oaxaca decomposition model are presented.

Table 1: Descriptive statistics

Variable		Before		After	
		Frequency	%	Frequency	%
Gender	Female	79	58.96	79	58.96
	Male	55	41.04	55	41.04
	Never attended (0)	8	5.97	8	5.97
Level of education	College/Tertiary(14-16)	18	13.43	18	13.43
	Secondary(8-13)	108	80.6	108	80.6
	Married	82	61.19	38	31.67
Marital status	Separated	14	10.45	44	36.67
	Single	30	22.39	27	22.50
	Widowed	8	5.97	11	9.17
	Husband	77	57.46	77	57.46
Decision maker	Wife	32	23.88	32	23.88
	Both husband and wife	14	10.45	14	10.45
	Other (Specify)	11	8.21	11	8.21
	Food vendor	61	50.41	61	50.41
Business type	Groceries	50	41.32	50	41.32
	Mobile money	4	3.31	4	3.31
	Retail shop	6	4.96	6	4.96
		Mean	Sd	Mean	Sd
Age (years)		36.15	9.86	38.15	4.36
Total hhsize		5.72	3.36	8.72	3.36

fiscal policy (%)	55.99	14.59	77.99	23.15
monetary policy (%)	54.67	25.90	64.37	25.90
Consumption (Ug shs)	979,701.50	133,430.00	552,276.10	39157.90
Sales (Ug shs)	775895.50	898,730.30	352672.20	13682.1
Production (Ug shs)	655,261.20	177,097.00	107,978.64	94,423.24

Source: Primary data

Table 1 shows the descriptive characteristics of the market vendors before and after COVID-19. Overall, there were not many changes in these individual characteristics as the frequency and percentage of the age, level of education, business type, and decision maker remained the same. The only observed change was in the marital status, where the frequency of the married reduced from 82 before COVID-19 to 38 after the pandemic. The findings revealed an increase in the number of people separated   from 14 to 44, further confirming the increase in family instability caused by the pandemic. The number of widows increased from 8 to 11, which may be explained by the loss of life of one's partner due to COVID-19 related deaths.

The average number of people in the family increased from 5.72 to 8.72 after the pandemic. This is because most young people lost jobs and started staying with their parents. The closure of educational institutions meant that learners who had previously been at school now had to stay at home with their parents. This increased the number of people staying in the family and constrained the non-working family head. The frequency of consumption, sales, and production reduced after COVID-19. The average monthly frequency of consumption of the market vendors was 979,701.50 before the pandemic but reduced to 552,276.10 after COVID-19.

The findings revealed a drop in monthly average sales among market vendors from shillings 775895.50 to 352672.2. The drop in sales represents a negative demand shock caused by deficiencies in demand. The variable production was used to measure the extent of COVID-19 manifestation as a supply shock. The study findings revealed a noticeable decline in production level from a monthly average of 655261.20 before COVID-19 to 107,978.64 after COVID-19. The study

explored the respondents' opinions on the policy options available to the government to manage the pandemic-related effects. The findings revealed the need for more government intervention in the form of fiscal policy.

The desired change in fiscal policy moved from 56% to 78%. During the informal interactions with the respondents, there was a clear expression of the need for tax reductions, exemptions and postponement. The desired change in monetary policy was shown by the change in frequency from 54.67 before to 64.37 after the pandemic. This expresses the desire of the respondents to see the government do more in terms of monetary policy.

Table 2: Parameter estimates

Variables	Consumption		Sales		Production	
	Before	**After**	**Before**	**After**	**Before**	**After**
	Coef. (se)	Coef. (se)	Coef. (se)	Coef. (se)	Coef. (se)	Coef. (se)
Gender	-0.205(0.218)	-0.562(0.185)***	-0.065(0.178)	0.011(0.19)5	0.109 (0.720)	0.336(0.859)
Respondents Age	-0.011(0.011)	-0.011(0.009)	0.012(0.008)	-0.009(0.009)	0.038(0.036)	0.065(0.043)
Education level						
Never	-0.136(0.705)	0.110(0.596)	-1.076(0.612)*	-0.981(0.672)	0.094 (2.322)	-1.812(2.770)
Primary	0.598(0.840)	0.517(0.711)	-0.419(0.732)	-0.493(0.803)	0.653(2.768)	-3.132(3.303)
Secondary	0.536(0.845)	0.881(0.715)	-1.255(0.732)*	-1.220(0.804)	0.122(2.783)	-3.087(3.320)
Tertiary	1.100(0.780)	1.022(0.660)	-0.635(0.667)	-0.569(0.732)	0.503(2.570)	-3.480(3.067)
Business type						

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Groceries	0.221(0.551)	1.714(0.466)***	1.462(0.489)**	0.973(0.537)**	0.298(1.815)	-4.542(2.165)**
Food vendor	0.430(0.553)	1.626(0.468)***	0.763(0.489)	0.385(0.536)	-1.045(1.821)	-3.024(2.173)
Retail shop	0.276(0.573)	1.296(0.485)***	1.241(0.508)*	0.350(0.557)	-2.970(1.887)	-3.581(2.252)
Household size	0.045(0.034)	0.063(0.029)**	-	-	-0.195(0.112)*	-0.260(0.133)*
Decision maker						
Wife	1.126(0.441)**	0.697(0.373)*	-	-	1.065(1.454)	3.462(1.735)**
Decision	0.778(0.395)*	0.317(0.334)	-	-	0.237(1.301)	2.242(1.552)
Joint	1.796(0.513)***	0.957(0.434)**	-	-	-0.124(1.689)	2.172(2.015)
No. who lost jobs	0.015(0.092)***	0.009(0.078)	-	-	0.126(0.304)	-0.102(0.363)
Fiscal policy	-0.023(0.006)***	-0.012(0.005)**	-0.004(0.005)	-0.081(0.006)*	0.28(0.019)**	0.042(0.023)*
Monetary policy	0.023(0.006)***	0.012(0.005)**	-0.009(0.005)	0.030(0.005)*	0.014(0.019)	0.037(0.023)
_cons	10.766(1.120)***	10.253(0.948)***	14.978(0.991)***	15.301(1.08)	5.082(3.691)	3.276(4.404)
R-squared	0.61	0.69	0.285	0.169	0.231	0.368
Adj. R-squared	0.24	0.601	0.218	0.141	0.118	0.275
RMSE	0.843	0.996	0.897	0.984	3.283	3.917

	126	126	126	126	126	126
Model P>F	<0.0001***	<0.0001***	<0.0001***	0.0200**	0.0159**	<0.0001***

***p<0.01; **p<0.05; *p<0.1
Source: Primary data

The Blinder- Oaxaca approach first estimates two group-specific regression models (before and after) and then performs the decomposition. Therefore, before looking at the results of the decomposition, we examined the specific independent characteristics that were causing changes in consumption, sales, and production. These independent characteristics were gender, education level, business type, household size, and government policy (Monetary and fiscal policy). All the above variables were found to be statistically significant at various levels. The consumption levels by the female gender dropped significantly by 0.562 after the COVID-19 restriction compared to the before COVID-19 consumption level of 0.205.

Under education levels, all the coefficients of consumption and production were negative and insignificant, implying that they were not a factor during COVID-19. Both the educated and uneducated market vendors were equally affected. However, the coefficients of sales before COVID-19 were negative and significant for the vendors who never had any education level and for those vendors with secondary education. The most affected business types were groceries, food vending, and retail shops. All these business ventures registered a decline after COVID-19. For example, the mean of the log sales of groceries was 1.462 before the pandemic, but this reduced to 0.973 after the pandemic, representing a decline of 0.489. The household production levels equally worsened, implying that the supply chain was disrupted. Before COVID-19, the household production level was -0.195, which worsened to -0.260. This means that whatever the market vendors were producing was for domestic consumption and wasn't being supplied to the market.

In terms of policy, the use of contractionary fiscal policy affected both consumption and sales. During pandemics, governments tend to pursue expansionary fiscal policy. On the other hand, the expansionary monetary policy improved the level of consumption and sales. The government was supposed to reduce interest rates and increase money supply. The examination of the adjusted R-squared shows that 60.1%, 14.1% and 27.5% of the variation in consumption,

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sales, and production, respectively was due to COVID -19 related containment measures.

Table 3: The Blinder-Oaxaca decomposition for the different models

Parameters	Consumption Coef. (se)	Sales Coef. (se)	Production Coef. (se)
Differential			
Prediction: Before	12.581 (0.094) ***	14.546 (0.092)***	8.523 (0.329)***
Prediction: After	12.080 (0.113) ***	14.129 (0.094)***	5.559 (0.428)***
Difference	0.501 (0.146) ***	0.417 (0.131)**	2.964 (0.540)***
Decomposition			
Endowments	-0.601 (0.098) ***	-0.315 (0.053)**	0.0001 (0.352)
Coefficients	0.501 (0.123) ***	-0.417 (0.122)***	2.964 (0.495)***
Interaction	0.002 (0.057)	0.001 (0.049)	0.0001 (0.279)

*****p<0.01; **p<0.05; *p<0.1*
Source: Primary data

Table 3 shows the decomposition output for consumption, sales and production before and after COVID-19 pandemic. The outputs indicate that the mean of the log consumption was 12.581 before and 12.080 after the pandemic, yielding a consumption gap of 0.501, implying reduced consumption during the pandemic. The mean of the log sales before COVID-19 was 14.546, which reduced to 14.129 after COVID-19, representing a gap of 0.417. The outputs equally show that the mean of the log production was 8.523 before COVID-19 and 5.559 after the pandemic, representing a decline of 2.964. These findings revealed the economic shocks caused by pandemic.

In the second panel of the decomposition, consumption, sales and production gaps are divided into three parts. The endowments part reflects the mean decrease in the after-pandemic consumption, sales, and production if they had the same characteristics as before the pandemic. The significant decrease of 0.601 in consumption and 0.315 in sales indicate that differences in endowments

accounted for about 60.1% and 31.5% reduction in consumption and sales gaps, respectively. For production, the endowments were insignificant. The second term of the coefficients quantifies the change in consumption, sales, and production before and after the COVID-19 pandemic restrictions. The third part is the interaction term that measures the simultaneous effect of the differences in endowments and coefficients.

Discussion

Using primary data collected from the selected market vendors in Kampala city, it was revealed that the individual characteristics of the vendors remained relatively stable during the pandemic period. TThe impact of the pandemic was evident in various demographic factors, including age, level of education, business type, and decision-makers. While some remained unchanged, noticeable variations occurred in marital status. Specifically, the frequency of married individuals decreased after the pandemic. The number of separated individuals increased, while the number of widows also rose. The increase in the number of widows may be attributed to the loss of partners due to COVID-19-related deaths. Lockdown restrictions made it challenging for families to care for their loved ones, and incidents of domestic violence became more common (Briggs & Thoai, 2020). These factors likely contributed to marriage breakdowns, aligning with findings from other researchers (Hoehn-Velasco, Balmori de la Miyar JR, Silverio-Murillo A, & Farin SM, 2023)

The respondents reported a decline in consumption levels during the pandemic, which is attributable to the limitations in earnings. The reduction in consumption during the pandemic echoes the findings of earlier researchers (Martin et al., 2020; Gozgor & Lau 2021). The fall in consumption translated into the reduction in sales representing a negative demand shock caused by deficiencies in demand. This finding confirms the earlier findings of EPRC (2022) that reported a drop in SME sales revenue and profitability during COVID-19. The consumption levels of the female gender dropped significantly during the pandemic restrictions. This supports earlier research done by (Briggs & Thoai , 2020) who found that the female gender is more vulnerable to the effects of the pandemic.

The supply disruptions during the pandemic were a manifest of the supply shock reported in the increase in the number of the unemployed and job layoffs. This finding echoes earlier studies conducted by (Martin et al., 2020; Belitski et al., 2022). Given the economic hardships that people went through during the pandemic period, the government of Uganda adopted various policies to assist people maintain a positive livelihood and keep the economy growing. The respondents felt that the government needed to do more in the area of fiscal

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policies. The areas cited in this direction included the need for tax reductions, tax exemptions and postponement. The reduction in taxes would lower the cost of inputs and boost production. The postponement of taxes on people's earnings would raise their purchasing power and boost demand. In the opinion of the respondents, the government provision in the area of fiscal policies fell below expectations. The efforts in the area of fiscal support however minimal they may be are in line with (Rio-Chanona et al., 2020). The optimal option would be to adopt a policy mix of both fiscal and monetary policy at various rates depending on the realities on the ground in line with (McKibbin & Fernando, 2020).

The analysis from the model in Table 3 revealed a reduction in consumption, sales, and production as a result of the pandemic related restriction measures. The loss of paid employment represents a wage/income shock that explains the revealed decline in consumption (Martin et al., 2020). Without adequate income, people's purchasing power is reduced (demand shock), leading to a drop in sales. Without adequate sales, the producers are discouraged from further production, which explains the layoffs that were witnessed during the pandemic, and the consequent disruptions in supply (supply shock). The decline in consumption and sales manifest COVID-19 as a demand shock, while the fall in production represents a supply shock. The findings rhyme with authors like (Belitski et al., 2022).

Conclusions

The economic effects of COVID-19 pandemic on market vendors were manifest in the reduced consumption, sales, and production levels. The reduction in consumption and sales represents a negative demand shock. The pandemic caused the loss of jobs and salaries (Martin et al., 2020; Rio-Chanona et al., 2020). The loss of income represents an income/wage shock that caused deficiencies in demand. The economic shocks affected the vulnerable populations, echoing earlier studies (Gavura & Reľovský, 2005). The government should adopt policies like discriminatory lending to support vulnerable groups.

COVID-19 caused largely a negative shock in demand. The positive demand shocks included the increased demand for facemasks, which were thought to protect people from the pandemic. The negative demand shocks occurred in the SME sector, EPRC (2022) and other service sectors. The sales and consumption levels of the market vendors dropped. It is recommended that the government build the capacity of market vendors in e-commerce, especially in using digital platforms. Digital platforms have gained relevance in situations where physical interactions are hard to achieve. With digital platforms, consumers and producers

can make a transaction without necessarily having to meet physically. As such, this would help to minimize the disruptions in the demand and supply chains that were experienced during the COVID-19 pandemic.

The COVID-19 caused a supply shock. The shock was mostly positive in the manufacturing sector while negative in non-essential sectors. The findings revealed that the pandemic simultaneously caused a supply and demand shock (Islamaj et al., 2021). The closure of non-essential businesses and restrictions on movement led to job lay-offs, lost incomes and reduced purchasing power. With inadequate purchasing power, both demand and supply were disrupted. It is high time the market vendors through their association and leadership come up with innovative ways of managing their businesses using the lessons learned from the COVID-19 experience. Some of the critical areas that need to be addressed by the market vendors may include the saving culture to cater for emergencies. Training in e-commerce may help reduce the adverse effects of restrictions on movement that may be associated with future pandemics.

The policy makers may find the findings of this study timely to inform future policy actions to handle pandemic related situations. Of particular importance is how to prepare the population to sustainably live in restricted environments with minimal loss to welfare. In relation to the employment sector, policy makers may need to study the concept of remote working further and how it can be made more relevant to the SMEs.

This study was limited to the market vendors in the divisions of Kampala City. The COVID-19 containment measures limited the number of market vendors that could be accessed. We recommend that an expanded study be undertaken to cover more sections of the market vendors, especially those that were not allowed to operate during the pandemic. A similar study could also be conducted with other market vendors outside Kampala City. Researchers may also pick interest in studying the relationships between the various pandemics over time through review studies to draw parallels and come up with policy frameworks that the government may use in future to minimize pandemic related disruptions to national and global economies.

Statement and Declarations
Conflict of Interest
The authors declare no conflict of interest.

Data Availability Statement
Data for the study will be provided on request.

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