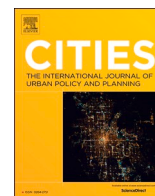




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# The COVID-19 pandemic and the livelihood of a vulnerable population: Evidence from women street vendors in urban Vietnam

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## ABSTRACT

The COVID-19 pandemic has caused enormous detrimental impacts on a global scale. Street vendors are one of the most heavily affected groups since they lack the skills and resources to overcome shocks. This study examines the economic burden facing this group during the pandemic and their coping strategies and mitigation mechanisms in response to these adverse effects. We utilized a mixed-methods approach, wherein 91 women vendors completed a survey questionnaire and 15 women vendors were interviewed. These vendors were found to experience a large reduction in business and consumption. The businesses of immigrant vendors suffered more adverse effects than those of local vendors. Also, the vendors selling in wet market areas incurred greater economic burdens than those selling near schools or recreation centers. The vendors lacked coping strategies to sustain their businesses and adopted various mitigation mechanisms to ensure essential consumption. This study highlights the need for urban social policies that can support this vulnerable group amid a pandemic. We also discuss policy implications for cities and economic development with a focus on street vendors.

## 1. Introduction

In the urban areas of low- and middle-income countries, the non-agricultural informal sector has played and still plays a significant role. This sector is a major source of employment and earnings, constituting a large percentage of urban economies in developing countries (Bosch & Esteban-Pretel, 2012; Martínez et al., 2017). In urban areas, informal workers typically include the self-employed working at home, on the streets, or in the open air; salaried laborers in informal enterprises or their clients' homes; unpaid family workers; casual or day laborers (Chen, 2005, 2012; Hussmanns, 2004; Tienda & Rajjman, 2000).

In developing cities worldwide, a large proportion of informal workers are street vendors, with the majority being women (Jensen & Peppard, 2003; Lemessa et al., 2021; Muyanja et al., 2011; Thanh et al., 2021; Williams & Gurtoo, 2012). Street vendors sell various products, such as food, drinks, and other small items (Chen, 2005; Jensen & Peppard, 2003; Lemessa et al., 2021; Romero-Michel et al., 2021; Sekhani et al., 2019). Since women street vendors are often characterized as underskilled immigrants with a low level of education, they represent the most disadvantaged and marginalized group (Boonjubun, 2017; Horn, 2010; Lemessa et al., 2021; Martínez et al., 2017; Muyanja

et al., 2011; Thanh et al., 2021). Most vendors live in crowded semi-permanent or unsettled houses that lack minimum sanitary conditions (McKay et al., 2016; Ullah et al., 2021). Also, they are highly vulnerable to socioeconomic crises (Balbuena & Skinner, 2020; Thanh et al., 2021). Additionally, since women vendors face educational and financial constraints (Pearce et al., 1988; Sisay et al., 2021), they tend to experience more adverse consequences and have fewer coping mechanisms during crises than male vendors (Cohen, 2010; Horn, 2010).

Unlike previous financial crises that directly affected the formal sector followed by indirectly affecting the informal sector (Cohen, 2010; Horn, 2010; Rani, 2020), the COVID-19 pandemic has directly affected informal sector workers such as street vendors (Rakshit & Basistha, 2020). To curb the pandemic, many countries have adopted social distancing or lockdown measures, which socioeconomically disrupt all economic sectors, including the informal sector (Chen, 2020; Laing, 2020; Rakshit & Basistha, 2020). Such disruptions have caused an economic burden for the street vendors, who lack sufficient skills, resources, coping strategies, and mitigation mechanisms (Balbuena & Skinner, 2020; Lemessa et al., 2021; Mustafa et al., 2021; Resnick, 2020; Sisay et al., 2021; Thai et al., 2021; Turner et al., 2021).

In developing cities, the urban poor and even middle-low-income

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families rely on informal vending systems for daily necessities, for the convenience and the low prices (Boonjubun, 2017; Maneepong & Walsh, 2013; Martínez et al., 2017; McKay et al., 2016; Sekhani et al., 2019; Wertheim-Heck, 2020). Moreover, informal suppliers (e.g., farmers selling fresh produce to vendors) would lose their income if informal markets were to close (Dzawanda et al., 2021; Wegerif, 2020). Therefore, understanding the economic burden of the pandemic on street vendors is crucial, including their coping strategies and mitigation mechanisms for the sake of their livelihood and welfare, as well as those of other stakeholders (Dzawanda et al., 2021; Wegerif, 2020). With this in mind, this study seeks to understand the economic impacts of COVID-19 on street vendors in Vietnam by answering the following research questions:

- (i). How has the COVID-19 pandemic affected the women street vendors?
- (ii). Which groups among the women street vendors have been more affected?
- (iii). How have they sustained their business?
- (iv). How have they mitigated these adverse effects?

Previous studies have examined how COVID-19 social distancing hit the livelihoods of street vendors and how they sustained their businesses and ensured their essential consumption (e.g., housing and food) (Coletto et al., 2021; Guha et al., 2021; SEWA-Bharat, 2020; Thai et al., 2021; Toriro & Chirisa, 2021; Turner et al., 2021). However, no studies to date have provided a comprehensive picture of women street vendors during this challenging period. Our study contributes to literature and practice in several ways. First, it is among the early attempts to examine the economic burden that social distancing imposed on women street vendors, and the coping strategies and mitigation mechanisms that they adopted in response. Second, it carries an important message that no one should be left behind during a public health crisis, and that more resilient cities should be established in the long term.

The remainder of the paper is organized as follows. Section 2 focuses on the backgrounds of street vendors as seen across the globe as part of the informal urban economy. Section 3 provides an overview of the COVID-19 pandemic. Section 4 presents an analytical framework on the adverse effect of pandemic social distancing on street vendors. Section 5 outlines the research methodology. Section 6 provides the quantitative and qualitative results, with further discussion. Section 7 highlights the policy implications. Section 8 concludes the paper, discussing research limitations and future research directions.

## 2. Street vendors as part of the informal urban economy

A study by Hart (1973) was among the first attempts in the academic literature to coin the term “informal sector” in a Third World context (Portes et al., 1986; Portes & Sassen-Koob, 1987; Portes & Schaufli, 1993; Charmes, 2012; Truong, 2018; Truong et al., 2020). The informal economy refers to economic activities that occur beyond state regulation but exclude the supplying of illegal goods or services (Castells & Portes, 1989; Cross, 2000; Portes & Schaufli, 1993). Characteristics of the informal sector include ease of entry, family ownership, reliance on local or indigenous resources, small-scale but labor-intensive production, the use of adaptive technologies, under-skilling or lack of formal training, tax evasion, avoidance of labor codes, and unregistered status (Cross, 2000; Gërxhani, 2004). Accordingly, while the formal market is generally rule-based, structured, explicit, and predictable, the informal sector lacks these attributes or belongs to the poor (McFarlane & Waibel, 2016; Rigon et al., 2020). Such a dichotomous understanding considers formality and informality as distinct economic activities in the cities, which lead to assuming formality as the norm and informality as a problem needing a solution or correction (Acuto et al., 2019; Boonjubun, 2017; Cross, 2000; Rigon et al., 2020). A growing body of literature challenges this dichotomous view by debating whether informality and formality

represent a dualism or a continuum rather than a dichotomy (Banks et al., 2020; Guha-Khasnabis et al., 2006; Recio et al., 2017; Rigon et al., 2020).

The informal sector has played a significant role in employment creation in developing cities (Charmes, 2012; Rakshit & Basistha, 2020). For instance, according to recent studies, approximately 91 % of workers in India were active in the informal sector (Rakshit & Basistha, 2020), while the informal economy in Vietnam constituted a large source of employment (57.2–58.8 % of nonagricultural employment) (General Statistics Office of Vietnam (GSO) & International Labour Organization (ILO), 2018). Informal workers often experience unequal access to social protections, unstable employment, low income, long working hours, and no employment contracts (General Statistics Office of Vietnam (GSO) & International Labour Organization (ILO), 2018). They can have a wide range of jobs, with those working on the streets or in the open air without a stable or fixed place of work being the most visible (Chen, 2012; Truong, 2018).

In developing countries, street vending is an important element of the urban informal economy (Bhowmik, 2012; Cross, 2000). First, it plays a critical role in ensuring the basic needs (especially food) of the urban population. Since most products from street vendors are inexpensive when compared to those available in restaurants or shops (Bhowmik, 2005; Hiemstra et al., 2006; Maneepong & Walsh, 2013; Martínez et al., 2017; Wegerif, 2020), large segments of the urban population consume street products—especially low-income groups and those with no time to prepare meals (Hiemstra et al., 2006). Second, street vending can represent a survival strategy or a source of employment and income for poor, uneducated, low-skilled, and immigrant individuals (Bhowmik, 2005; Maneepong & Walsh, 2013; Sekhani et al., 2019; Truong, 2018). Street vendors also offer tourists a chance to experience local culture, and enjoy food and cuisine culture (Chuang et al., 2014; Huynh-Van et al., 2022). However, street vendors are generally labeled as informality, have or need no license to work, and evade taxes (Bell & Loukaitou-Sideris, 2014; Hummel, 2017; Lemessa et al., 2021; Martínez et al., 2017; Roever & Skinner, 2016). Their activities are often framed as an embodiment of traffic jams, unclean and unsafe streets, and a lack of hygienic and sanitary practices (Bhowmik, 2005; Huynh-Van et al., 2022; Muyanja et al., 2011).

The divergent schools of thought on informality and formality affect—and are manifested in—policies on urban informality, which includes street vending (Recio et al., 2017). According to modernist theory, urban planners believe that cities should be planned to be orderly and clean at all costs (Bell & Loukaitou-Sideris, 2014; Skinner, 2009; Skinner & Watson, 2020). Thus, street vending is considered a threat to cities' aesthetics and the residue of a pre-modern economy that is destined to disappear with modernity (Boonjubun, 2017; Chen, 2012; Cross, 2000; Portes & Sassen-Koob, 1987; Williams & Gurtoo, 2012). Accordingly, street vendors often experience the confiscation of goods and evictions from vending sites (Boonjubun, 2017; Chen, 2020; Lemessa et al., 2021; Onodugo et al., 2016). However, since street vending contributes greatly to food security and employment, its existence is inevitable, leading to debates in urban studies (Bell & Loukaitou-Sideris, 2014; Boonjubun, 2017; Onodugo et al., 2016).

## 3. The COVID-19 pandemic in the world and in Vietnam: An overview

The novel coronavirus disease (COVID-19) first appeared in China in mid-December 2019. In March 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic. In addition to heavily damaging public health, the pandemic has caused socioeconomic disruptions due to social distancing measures (Kretzschmar et al., 2021; Laing, 2020; Rakshit & Basistha, 2020; Teslya et al., 2020).

Vietnam's large population and extensive trade with the rest of the world has made the country highly vulnerable during the COVID-19 pandemic. Therefore, the Vietnamese government was well-prepared

for the battle against COVID-19 at a very early stage, even before detecting any cases of infection. After confirming the first COVID-19 cases in January 2020, the Vietnamese government implemented a range of preventive measures to contain the outbreak, with the most important being strict nationwide social distancing (Duong et al., 2020). In April 2020, the Vietnamese government mandated social distancing in most provinces and cities for three weeks. Thanks to these measures, Vietnam achieved remarkable success in containing the COVID-19 pandemic in the first pandemic year (Duong et al., 2020; Ivic, 2020).

Despite its important role in containing the pandemic, social distancing is considered a draconian strategy that requires a substantial trade-off between public health and livelihood. It involves preventive measures such as restrictions on mass gatherings and travel, school shutdowns, the closure of non-essential public places, and sheltering or working at home—all of which have disrupted economic activities at the individual, firm, sector, and national levels in both the formal and informal economies. In particular, in Vietnam, as of June 2020, around 30.8 million people aged 15 years and older felt the negative effects of the COVID-19 pandemic, including those experiencing job loss, reduced working hours, income loss, staggered working hours, and rotating leave (General Statistics Office of Vietnam (GSO), 2020). Female, unskilled, migrant, and informal workers were among the most vulnerable groups during the pandemic (General Statistics Office of Vietnam (GSO), 2020; Nguyen et al., 2020).

During social distancing, some cities have allowed street vendors—especially those selling fresh fruits and vegetables—to operate; however, most developing cities did not allow street vendors to work (Chen, 2020; Guha et al., 2021; Lemessa et al., 2021; Sisay et al., 2021; Toriro & Chirisa, 2021). In urban Vietnam, the vendors were also required to suspend their businesses during social distancing (Thanh et al., 2021; Turner et al., 2021). Already a vulnerable group, the pandemic pushed their economic live into further distress.

Similar to elsewhere in the Global South, street vending activity serves an important role in urban Vietnam (Eidse et al., 2016; Huynh-Van et al., 2022). Also, since the Vietnamese government has aimed to ensure that no one is left behind during the pandemic (Duong et al., 2020; Thanh et al., 2021), it launched financial aid packages to support individuals affected by the pandemic—including street vendors (Nguyen et al., 2020; Prime Minister of Vietnamese Government, 2020). The

street vendors also received various cash or in-kind support from charitable individuals, organizations, and landlords (Thai et al., 2021; Tung, 2020; Turner et al., 2021).

#### 4. COVID-19 social distancing and street vendors: An analytical framework

To guide quantitative and qualitative data analysis, we formulated an analytical framework (see Fig. 1) that was adapted and modified from the livelihood framework in the context of vulnerability (Cannon et al., 2003; DFID, 1999; Serrat, 2017; Thanh & Duong, 2017). During COVID-19 social distancing, the following mechanisms may have led to adverse effects on street vendors.

First, these vendors experienced a reduction in purchasing power since their customers suffered from income shock, limited going out, and/or fear of infection from direct human contact (Kiaka et al., 2021; Nasution et al., 2021; Thanh et al., 2021). Second, vendors might have been restricted or prohibited from doing business (Chen, 2020; Guha et al., 2021; Gupte & Mitlin, 2021; Sisay et al., 2021; Toriro & Chirisa, 2021; Wegerif, 2020). For example, public places where vendors sold their goods were shut down, resulting in few or no customers (Nasution et al., 2021; Turner et al., 2021). Additionally, some vendors could not go to their selling locations due to public transportation shutdowns (Dzawanda et al., 2021; Resnick, 2020; Toriro & Chirisa, 2021). Third, street vending is generally a low-cost and simple business model, which makes it a competitive market with free entry (Maneepong & Walsh, 2013). Therefore, in a time of crisis like the COVID-19 pandemic, many formal workers have become unemployed, with some becoming street vendors as the last resort to maintain their livelihood (Allison et al., 2021; Maneepong & Walsh, 2013; Toriro & Chirisa, 2021). Accordingly, both old and new vendors could not avoid competing against one another for space and customers (Boonjubun, 2017; Maneepong & Walsh, 2013; Narayanan & Saha, 2021). Fourth, street vendors often lack technological skills and devices, as well as professional skills (Cohen, 2010; Maneepong & Walsh, 2013), which prevents them from adopting modern sales methods (e.g., online or phone sales).

When their businesses were heavily affected, vendors might adopt certain coping strategies to sustain their businesses or use mitigation mechanisms to ensure their essential consumption (Mustafa et al., 2021;

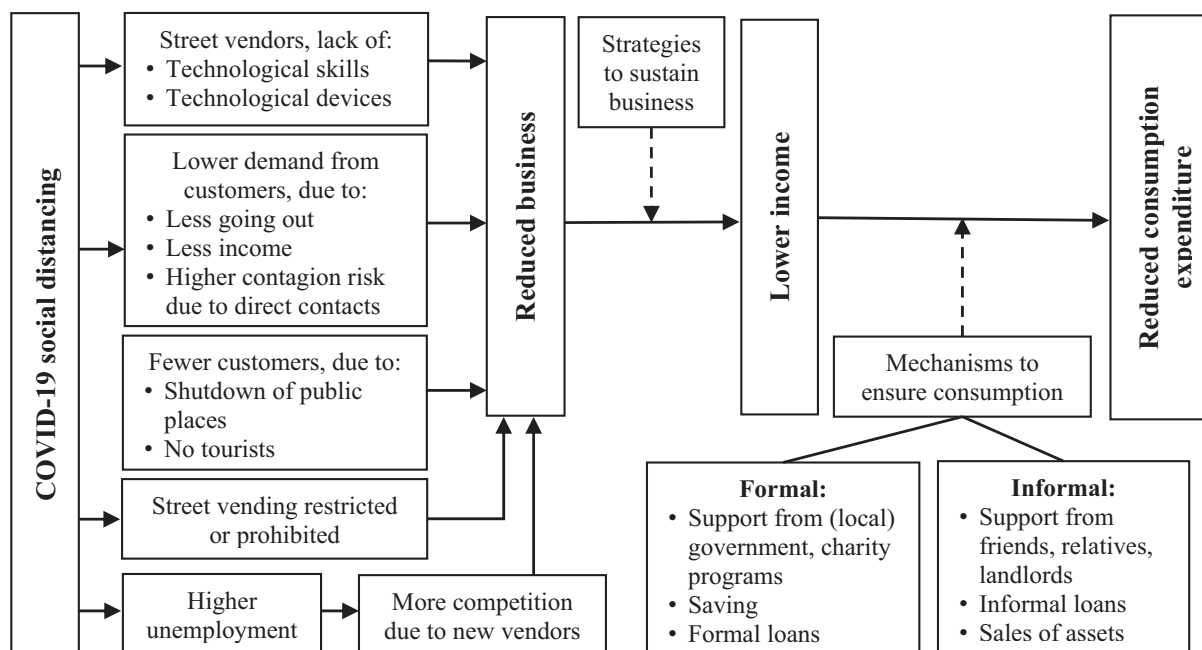


Fig. 1. Street vendors during COVID-19 pandemic: An analytical framework.

Thai et al., 2021; Thanh et al., 2021). Mitigation mechanisms and coping strategies refer to activities, measures, actions, or policies undertaken before or during the occurrence of negative events (e.g., disasters, emergencies, or crises) to avoid, minimize, or eliminate risks to individuals or property and reduce the actual or potential effects, severity, vulnerability, damage, hardship or suffering (de Siano et al., 2020; Shakeri et al., 2021). Preparing or activating mitigation mechanisms and coping strategies can occur at micro or macro levels (Wilhite, 2005). In this study, coping strategies and mitigation mechanisms refer to a wide range of actions and measures that street vendors have adopted in response to reductions in business and consumption.

During a crisis, street vendors could adopt various coping strategies to sustain their businesses, such as changing their products, services, or sales areas to reach new markets, or adopting modern sales methods and home delivery (Boonjubun, 2017; Coletto et al., 2021; Kiaka et al., 2021; Maneepong & Walsh, 2013; Nasution et al., 2021). In addition, the nature of their informality has made some vendors less likely to (frequently) follow social distancing measures, but they have used informal and often subtle tactics to navigate the surveillance of the local authorities and resist them in order to continue their businesses (Romero-Michel et al., 2021; Sisay et al., 2021; Thanh et al., 2021; Turner et al., 2021). For instance, in the Global South, vendors might work around local authorities' policing timetables and seek help from local residents to hide their goods during normal times and in crisis, with some playing "cat and mouse" or "hide and seek" with local authorities (Boonjubun, 2017; Kiaka et al., 2021; Lata et al., 2019; Thai et al., 2021; Turner et al., 2021).

Regarding mitigation mechanisms to ensure essential consumption during the crisis, some street vendors might prefer formal mechanisms when they are available, such as government relief, community-based support, savings, or formal loans (Martínez et al., 2021; Nguyen & Vu, 2020; Raju et al., 2021; Tung, 2020; Turner et al., 2021). However, many vendors were less able to access government support since the eligibility to obtain it might require complex documents and possibly complicated, time-consuming, and even unreasonable application procedures (Turner et al., 2021; Wertheim-Heck, 2020). For instance, since many vendors live in informal settlements with no official residence registration and often lack proof of income, they found it difficult to prove their eligibility for government support (Thai et al., 2021; Turner et al., 2021).

Due to insufficient or absent formal mitigation mechanisms, street vendors often resorted to informal coping mechanisms (e.g., alternative income from other family members, cash or in-kind support from friends or relatives, informal loans, or sales of assets) to cover their day-to-day expenses during the crisis (Martínez et al., 2021; Mustafa et al., 2021; Raju et al., 2021; Resnick, 2020; Turner et al., 2021). Since the COVID-19 pandemic has been neither a localized, trivial disruption nor an idiosyncratic shock but a global crisis, not only the vendors but also their family members and relatives experienced economic burdens (Resnick, 2020). Therefore, they might find it difficult to call on each other for assistance. Accordingly, some vendors borrowed from moneylenders at high interest rates, while some sold their durable assets in response to income shocks (Guha et al., 2021; Martínez et al., 2021; Turner et al., 2021). Consequently, with low repayment capacity and loss of productive assets, they may get into trouble or fall into (deeper) poverty over the long term (Agarwal, 2021; Guha et al., 2021; Turner et al., 2021).

## 5. Methodology

### 5.1. Study site and context

We conducted a cross-sectional survey and in-depth interviews with the street vendors in Ho Chi Minh City, the largest business hub in Vietnam, where street vending is an essential part of city life (Thanh et al., 2021). In this city, nonagricultural informal employment accounts for 51.6 % of total employment and 53.4 % of nonagricultural

employment (Herrera et al., 2012). Street vendors account for 12 % of nonagricultural informal employment. Most street vendors are women, accounting for 66.7 % of total vendors (Herrera et al., 2012). In 2020, Ho Chi Minh City administratively comprised 5 rural districts and 19 urban districts. We selected five urban districts for this study (see Fig. 2). In Vietnam in general and Ho Chi Minh City in particular, street vending is considered a threat to urban modernization. Despite this, vendors are permitted to do business as long as they obey the regulations prescribed by the government (Prime Minister of Vietnamese Government, 2007).

Data were collected in June 2020. To contain the pandemic, Vietnam imposed strict nationwide social distancing from 1 April to 22 April 2020. After easing social distancing measures, Ho Chi Minh City entered the "new normal" period, and citizens could resume their daily activities and business. Thus, we asked respondents to recall and report information relevant to the three months preceding the survey and interviews.

### 5.2. Sampling process

In this study, a street vendor is defined as an informal petty trader offering goods and services for sale to the public on the street or in open-air markets, without having a permanent built-up structure (Bhowmik, 2005). We asked women street vendors to participate in the survey and interviews. Recruitment was conducted through convenience sampling. Due to the pandemic, many people became unemployed, and then some became street vendors to eke out a living. Since we focused on how vendors' economic lives during the pandemic differed from the pre-pandemic period, we removed new-entrant vendors.

Prior to the official survey or interviews, a pilot survey and in-depth interviews with five women street vendors were conducted to ensure the instruments' logical consistency, wording, meaning, and appropriateness. Interviews occurred face-to-face with each respondent in the Vietnamese language (central dialect). The authors and two well-trained research assistants used extensive note-taking to collect quantitative and qualitative data, which was then translated into English for subsequent analysis.

We collected quantitative data using a structured questionnaire. A total of 100 women street vendors voluntarily participated in the survey. We removed the questionnaires of respondents who did not complete the survey or provided conflicting information. After data cleansing, the final sample for quantitative analysis included 91 respondents. To triangulate quantitative data, the authors and research assistants conducted in-depth interviews with 15 women street vendors to collect qualitative data. The interviews typically lasted 25–30 min each.

### 5.3. Empirical analysis

This study combined both quantitative and qualitative methods.

#### 5.3.1. Quantitative analysis

Our survey questionnaire was adapted from various literature review, including empirical studies, and well-established surveys and reports (Companion, 2012; Hiemstra et al., 2006; Lin & Lamson, 2018; McKay et al., 2016; Roever & Skinner, 2016; Williams & Gurttoo, 2012). It was also based on our understanding of the reality of street vendors during COVID-19 social distancing. Accordingly, the final survey questions included the following sets of variables.

**5.3.1.1. Economic burden.** To answer the first and second research questions, we used reduced business and reduced daily consumption variables to measure the economic burden of COVID-19 social distancing on women vendors. The measures of these two indicators were developed from the Positive and Negative Affect Schedule (PANAS) (Watson et al., 1988), which is commonly used in social science to measure well-being (Brown & Ryan, 2003; Göb et al., 2007;

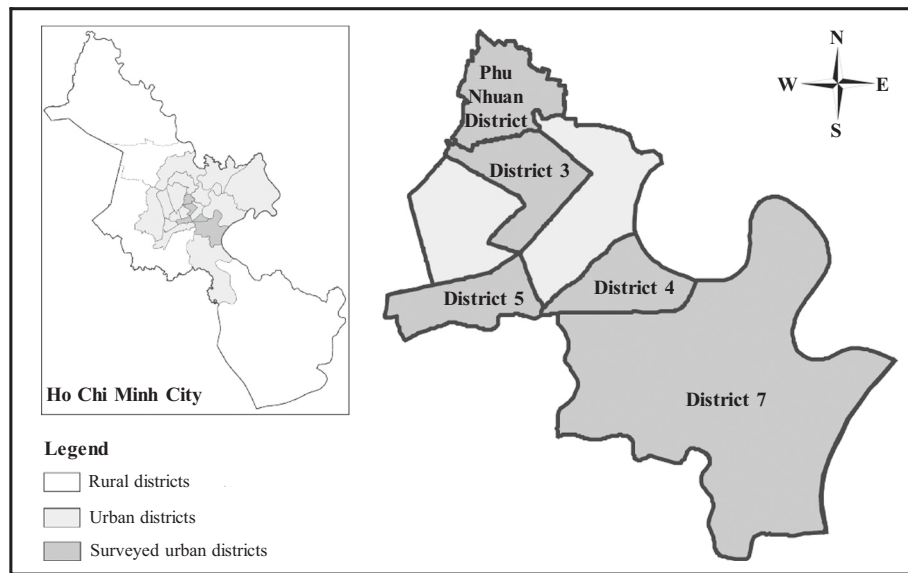


Fig. 2. Map of Ho Chi Minh City with surveyed districts.

Satici, 2016). During COVID-19 social distancing, some vendors (e.g., lottery-ticket vendors) completely stopped their vending when the Vietnamese government shut down all lottery-related activities (Nguyen & Vu, 2020). Similarly, some vendors selling nonessential products also suspended their business since their customers cut down spending on such products. Therefore, we constructed the reduced business variable using a modified scale with an additional response: “Completely affected (almost no sales).” Accordingly, we measured reduced business using a 6-point scale and reduced consumption using a 5-point scale, with higher values indicating more adverse effects (see Table 2). The analysis of both variables helped us comprehend the economic burden of COVID-19 social distancing on women vendors.

**5.3.1.2. Coping strategies.** To answer the third research question, we examined three coping strategies that are feasible and available to the women vendors during COVID-19 social distancing, including changing (i) commodities (e.g., from non-essential to essential goods), (ii) sales areas, and (iii) sales methods (e.g., online sales, then home delivery).

**5.3.1.3. Mitigation mechanisms.** To answer the fourth research question, we examined the various mitigation mechanisms that women vendors adopted to ensure their essential consumption (e.g., food and housing) during COVID-19 social distancing. The formal mechanisms included savings, support from government or charity programs, and formal loans. Meanwhile, informal mechanisms included support from friends, relatives, or landlords, reduced spending for nonessential goods and services, informal loans (e.g., from friends, relatives, or moneylenders), and sales of assets (i.e., nonproductive and productive assets).

**5.3.1.4. Sociodemographic and vending characteristics.** These consisted of two major sets of characteristics, including those of the street vendors (e.g., education, marital status, age, and immigration status) and their vending (e.g., experience, sales area, and commodity). These characteristics were used as explanatory variables in the ordered probit model (see Eq. 1).

Quantitative data obtained via the structured questionnaire were used for descriptive and inferential statistical analyses. Descriptive statistics examined the effects of COVID-19 social distancing on the business and consumption of the women vendors (first research question) and the coping strategies and mitigation mechanisms they adopted in response to these adverse effects (third and fourth research questions, respectively). Additionally, to answer the second research question—i.

e., which groups among women vendors were more affected—we used quantitative data to estimate the determinants of their economic burden using inferential statistics. Given the ordinal nature (i.e., ordered responses) of outcome variables, a common method is to adopt an ordered probit (Cameron & Trivedi, 2005; Wooldridge, 2010). Thus, we estimated the following model:

$$y_i = X_i\beta + \varepsilon_i \quad (i = 1, 2, \dots, N) \quad (1)$$

where  $y_i$  is the self-reported economic burden of individual  $i$ ,  $\beta$  represents the coefficients to be estimated,  $X_i$  denotes the vector of explanatory variables, and  $\varepsilon_i$  is the error term.

Based on Eq. 1 and the variables used for inferential analysis, we hypothesized that women vendors with more vending experience, better educated, married, or older ones were less affected than those with less vending experience, lower educated, unmarried (single, divorced, widowed), or younger ones, respectively. Immigrant vendors were hypothesized to be more affected than local ones, while those selling staple food or those vending in wet market, residential, or office areas were hypothesized to be less affected than those vending non-staple food or non-food items or selling in other areas, respectively. Positive and negative coefficients indicated greater and lesser effects, respectively.

### 5.3.2. Qualitative analysis

We used the qualitative data obtained from in-depth interviews with women vendors to examine the first, third, and fourth research questions. Accordingly, the interview questions focused on three themes: (i) how COVID-19 social distancing has affected their business and consumption; (ii) what coping strategies they have adopted to sustain their business; and (iii) what mitigation mechanisms they have adopted in response to reduced consumption. We analyzed and reported qualitative data thematically to triangulate the findings from descriptive statistics and capture a more comprehensive understanding. Following Braun and Clarke (2006), we first transcribed data and scrutinized the transcripts. Second, we identified and reviewed the themes. Third, we produced discussions associated with the research questions (Braun & Clarke, 2006).

## 6. Results and discussion

### 6.1. Sample profile

Table 1 shows that most respondents were married (89.0%), with a

**Table 1**  
Sample profile.

Variable(s)	Description	N	%
<i>Socio-demographic characteristics</i>			
Marital status	Single, divorced, widowed	10	11.0 %
	Currently married	81	89.0 %
Education level	Never gone to school	14	15.4 %
	Elementary school (1st–5th grade)	34	37.4 %
	Secondary school (6th–9th grade)	31	34.1 %
	High school (10th–12th grade)	12	13.2 %
Age	Young adults (20–35 years old)	15	16.5 %
	Middle-aged adults (36–55 years old)	54	59.3 %
	Older adults (>55 years old)	22	24.2 %
Immigration status	Local resident	22	24.2 %
	Immigrant	69	75.8 %
<i>Vending characteristics</i>			
Vending experience	≤2 year	23	25.3 %
	2–<5 years	24	26.4 %
	≥5 years	44	48.4 %
Sales area	Schools, recreation centers	69	75.8 %
	Residential or office areas	8	8.8 %
Commodity	Wet market areas	14	15.4 %
	Non-staple food or non-food items	66	72.5 %
Observations	Staple food	25	27.5 %
		91	

Source: Authors' calculation.

large proportion (59.3 %) comprising middle-aged adults, while around 24.2 % and 16.5 % were older and younger adults, respectively. These results are similar to findings from previous studies in which most vendors were married and middle-aged adults (Guha et al., 2021; Muyanjanja et al., 2011; Williams & Gurtoo, 2012). In line with previous studies (Guha et al., 2021; Martínez et al., 2017), many respondents were immigrants from other provinces and cities (75.8 %). In Vietnam, most young immigrants choose to work in factories for a better salary since employers typically favor younger workers. Accordingly, older immigrants tend to work as informal workers such as street vendors.

Some respondents (13.2 %) had completed high school, while many had completed elementary school (37.4 %) or secondary school (34.1 %), and some (15.4 %) never went to school. These findings were similar to other studies in which low educational attainment presumably characterized street vendors (Bhowmik, 2005; McKay et al., 2016; Muyanjanja et al., 2011; Romero-Michel et al., 2021). Many respondents (75.8 %) vended near schools or recreation centers, while the others vended in wet market areas (15.4 %) and near residential or office areas (8.8 %). Only around 27.5 % sold staple food (e.g., meat, fish, vegetables), while the remainder (72.5 %) sold non-staple food (e.g., beverages, snack food) and non-food items (e.g., lottery tickets, flowers). Nearly half (48.4 %) had vended on the streets for five years or longer, while 26.4 % vended for more than two years but less than five years,

**Table 2**  
Economic burden during COVID-19 pandemic.

Variable(s)	Description	Whole sample		Continue vending		Stop vending	
		N	%	N	%	N	%
<i>Reduced business</i> (Mean = 4.97; SD = 1.41)	Reduction in business, measured by:						
	=1 if unaffected	4	4.4 %	4	11.8 %	0	0.0 %
	=2 if slightly affected	1	1.1 %	1	2.9 %	0	0.0 %
	=3 if moderately affected	10	11.0 %	7	20.6 %	3	5.3 %
	=4 if much affected	15	16.5 %	14	41.2 %	1	1.8 %
	=5 if seriously affected	10	11.0 %	7	20.6 %	3	5.3 %
<i>Reduced consumption</i> (Mean = 3.70; SD = 1.31)	=6 if completely affected (almost no sales)	51	56.0 %	1	2.9 %	50	87.7 %
	Reduction in daily consumption expenditure, measured by:						
	=1 if unaffected	9	9.9 %	7	20.6 %	2	3.5 %
	=2 if slightly affected	11	12.1 %	4	11.8 %	7	12.3 %
	=3 if moderately affected	8	8.8 %	3	8.8 %	5	8.8 %
	=4 if much affected	33	36.3 %	13	38.2 %	20	35.1 %
Observations	=5 if seriously affected	30	33.0 %	7	20.6 %	23	40.4 %
		91		34		57	

Source: Authors' calculation.

and 25.3 % vended for two years or less. These results align with other studies in which approximately half of the surveyed vendors had operated their businesses on the streets for five years or longer (Williams & Gurtoo, 2012). Our survey results revealed that the women street vendors shared similar characteristics to those across the world.

### 6.2. Economic burden

Table 2 reveals that COVID-19 social distancing caused a great economic burden among women vendors with respect to reduced business. Overall, around 12.1 % of respondents reported their business being slightly or moderately affected, 27.5 % reported being much or severely affected, and most (56 %) reported having almost no sales.

These results support the notion that the pandemic heavily affected women vendors (Abdul et al., 2021; Mustafa et al., 2021; Sisay et al., 2021; Turner et al., 2021). Some plausible reasons for the complete loss of business could be explained using the framework in Fig. 1. For instance, vendors were not allowed to operate during social distancing (Thai et al., 2021; Thanh et al., 2021). Moreover, some vendors (e.g., lottery-ticket vendors) had no product to sell since lottery-related activities were completely suspended (Nguyen & Vu, 2020). Table 2 also demonstrates that the vendors who suspended their businesses seemed to experience greater business loss.

However, an interesting result was that some vendors (4.4 %) reported their business being unaffected or even improving. For instance, according to a 57-year-old local vendor selling snack foods and fruits:

During the strict social distancing period due to the pandemic, my business was even better because my regular customers might get bored, and thus hanker for food. Currently, my business was even much lower than in that period.

Similar to other findings in the Global South (SEWA-Bharat, 2020; Thai et al., 2021; Turner et al., 2021), Table 2 also reveals that the COVID-19 pandemic adversely affected women vendors' consumption expenditure. In particular, many women vendors (69.2 %) reported being much or seriously affected, while the remainder (20.9 %) reported being slightly or moderately affected. Notably, a few vendors (9.9 %) reported that their consumption was unaffected, which perhaps indicates that their business was unaffected or that they had sufficient mitigation mechanisms to ensure their consumption.

The results from in-depth interviews showed that some vendors even experienced catastrophic burdens due to their own difficult circumstances or idiosyncratic shocks. For instance, some women vendors or their household members experienced sickness, injury, chronic diseases, or even hospitalization during this challenging time. Additionally, some vendors had family members working in the informal sector (e.g., motorbike taxi riders) who also suffered income loss during this period.

Accordingly, these unexpected idiosyncratic events, combined with adverse effects of the COVID-19 social distancing, caused them double or even triple shocks (Dzawanda et al., 2021). For instance, according to a 72-year-old immigrant vendor selling beverages:

My husband could not work because of his sickness. My son worked very little, while my daughter-in-law left home. My family had three young grandchildren... When I vended on the street, our grandchildren took care of one another (the oldest one was seven years old)... One day (in the time of social distancing), I was vending when I got high blood pressure; thus, I was admitted to hospital.

Similarly, according to a 35-year-old immigrant vendor selling beverages:

In a rough time due to the pandemic, I suspended my business, and my husband was also unable to do his job as a motorbike taxi rider. We did not have money for consumption. My children and my husband were sick, and my father-in-law was weak. Economic life was difficult. I had to shoulder the responsibility of the whole family.

Table 2 also unveils the noteworthy finding that many vendors (37.4 %) continued to conduct their business. Regardless of the high risk of being caught and fined, they did not (frequently) follow the social distancing measures since no work meant hunger or deprivation (Coletto et al., 2021; Dzawanda et al., 2021; Majithia, 2020; Romero-Michel et al., 2021; Thanh et al., 2021). Due to their informality, they used various informal and often subtle tactics to maintain their vending activities and resist the local authorities (Romero-Michel et al., 2021; Thai et al., 2021; Turner et al., 2021). Most women vendors were hard-hit, especially those experiencing other non-pandemic problems or suspending their businesses, which underscores the need for social policies targeting this vulnerable group during a pandemic.

### 6.3. Determinants of economic burden

The severity of COVID-19 social distancing impacts on women vendors might depend on their socio-demographics and vending specifics (Chen, 2020; Gupte & Mitlin, 2021; Kiaka et al., 2021; Nasution et al., 2021; SEWA-Bharat, 2020; Wertheim-Heck, 2020). Table 3 shows that most explanatory variables were statistically insignificant, indicating that the economic burden of the pandemic did not differ among the women vendors of varying marital status, age, education, vending experience, or commodity group. Since the social distancing measures have wreaked havoc on the economy by causing direct and indirect detrimental effects on street vending activity, women vendors experienced similar business loss and reduced consumption regardless of their sociodemographic characteristics.

On the contrary, immigrant vendors experienced greater business losses but no difference in reduced consumption when compared to local vendors. This result is similar to findings in Southeast Asia and India, where migrant vendors experienced a greater burden during lockdowns (Sripriya, 2021; Turner et al., 2021). A plausible reason is that immigrants typically face social-capital constraints and political marginalization (e.g., fewer regular customers or lack of connections with the local authority) that limit their ability to sustain their business during social distancing. However, immigrants might receive more food aid from sociopolitical or community-based organizations that have considered them a more vulnerable group (Thai et al., 2021; Tung, 2020; Turner et al., 2021). Thus, they could save some money from food purchases to spend on non-food necessities. Additionally, some migrants might have received rent reductions or exemptions from their landlords during the pandemic (Thai et al., 2021). This support could explain why immigrant vendors experienced more business loss than local vendors, yet no difference in reduced consumption.

Regarding the sales areas of vendors, those vending near schools or recreation centers incurred no difference in economic burden when compared to those vending near residential or office areas; however,

**Table 3**  
Determinants of the economic burden during COVID-19 pandemic.

Variable(s)	Reduced business		Reduced consumption	
	Model 1	Model 2	Model 3	Model 4
<i>Socio-demographic characteristics of street vendors</i>				
Marital status (Ref = Currently married)	0.669* (0.086)	0.404 (0.315)	-0.503 (0.375)	-0.741 (0.165)
Education level (Ref = Never go to school)				
Elementary school	-0.186 (0.591)	-0.427 (0.267)	-0.478 (0.190)	-0.785 (0.055)
Secondary school	0.101 (0.798)	-0.099 (0.809)	-0.426 (0.288)	-0.723 (0.070)
High school	0.735 (0.155)	0.138 (0.793)	-0.089 (0.852)	-0.695 (0.187)
Age (Ref = Young adults)				
Middle-aged adults	-0.157 (0.752)	-0.499 (0.327)	-0.372 (0.326)	-0.555 (0.243)
Older adults	0.153 (0.789)	-0.337 (0.588)	-0.470 (0.273)	-0.899 (0.086)
Immigration status (Ref = Local resident)	0.597** (0.026)	0.776*** (0.008)	0.023 (0.934)	0.207 (0.505)
<i>Characteristics of street vending</i>				
Vending experience (Ref = ≤2 years)				
2-<5 years		0.269 (0.485)		0.259 (0.476)
≥5 years		0.132 (0.730)		0.195 (0.546)
Sales area (Ref = Schools, recreation centers)				
Residential or office areas		-0.030 (0.946)		0.222 (0.605)
Wet markets		-0.953** (0.016)		-1.006** (0.018)
Commodity (Ref = Staple food)		0.308 (0.357)		-0.310 (0.248)
Constant cut 1	-0.746 (0.198)	-1.430** (0.012)	-2.444*** (0.001)	-3.179*** (0.000)
Constant cut 2	-0.647 (0.275)	-1.320** (0.019)	-1.920*** (0.006)	-2.591*** (0.000)
Constant cut 3	-0.021 (0.973)	-0.658 (0.288)	-1.644** (0.018)	-2.296*** (0.002)
Constant cut 4	0.559 (0.359)	-0.053 (0.933)	-0.647 (0.332)	-1.251* (0.081)
Constant cut 5	0.878 (0.149)	0.284 (0.654)		
Observations	91	91	91	91

Source: Authors' calculation.

Note: robust p-value in parentheses.

\*\* and \*\*\* represent statistical significance at the 5 % and 1 % levels, respectively.

those vending in wet market areas were less adversely affected. Similar to the case of Indonesia (Nasution et al., 2021), lockdowns shut schools and recreation centers and restricted office areas; therefore, students had to adopt online learning, office staff often had to work from home, and people limited their gatherings and going out. Office staff not working from home might also avoid vendors for fear of contracting the coronavirus (Nasution et al., 2021). Furthermore, under the strict measures for minimizing community infection risk, the street vendors selling in office areas had to suspend their activities, which severely affected their business. Since wet market areas provided essential and indispensable goods, trading activities took place almost as usual or with little restriction. In wet market areas, trading activities were under strict surveillance and public health measures were also implemented by the local authorities; therefore, the women vendors in these areas could still operate, and thus their businesses were less adversely affected. Our results demonstrated almost no difference in economic burden among women vendors with socio-demographic differences, except for



migration status and vending location.

#### 6.4. Coping strategies to sustain business

The analytical framework (see Fig. 1) implied that the adverse consequences of the COVID-19 pandemic on the business of street vendors would be more serious if they had insufficient or no coping strategies. Table 4 reveals that most respondents (94.5 %) had no strategy to sustain their business. Moreover, around 4.4 % did not resort to any coping strategy because their business was unaffected. Only one vendor changed her sales area, while none changed their commodities or sales methods. Our results are inconsistent with previous studies in Indonesia and some African countries, where the street vendors changed their products, moved to other locations, or adopted online sales during the pandemic (Kiaka et al., 2021; Nasution et al., 2021; Toriro & Chirisa, 2021).

We found that almost no women vendors had coping strategies. This could be due to various reasons associated with street vending specifics during both the normal state and the pandemic. First, due to the nature of their jobs—i.e., simple production and inflexible business (Maneepong & Walsh, 2013)—they were less likely to adapt to turbulent and uncertain events. Second, the vendors tended to sell products that took advantage of their expertise (e.g., processed food) and the availability of affordable wholesalers or suppliers of raw materials. Therefore, they lacked the flexibility to change to other products. Third, they often worked in the specific areas with which they were familiar in order to maintain their existing networks and regular customers and reduce their operating costs (Bell & Loukaitou-Sideris, 2014; Milgram, 2014; Onodugo et al., 2016). They were also not allowed to move freely to sell their products during the pandemic (Dzawanda et al., 2021). Last, their low educational attainment and lack of technological skills prevented them from adopting modern sales methods. Most vendors were found to lack coping strategies, which underscores the importance of support programs to help them sustain their businesses during times of crisis.

#### 6.5. Mitigation mechanisms in response to reduced consumption expenditure

Table 5 shows that around 31.9 % received at least one cash or in-kind support, to ensure their daily consumption. In particular, approximately 11 % received support from friends or relatives, while around 9.9 % benefited from charity programs, and around 5.5 % received help from their landlords (e.g., reduced or exempted rent). Therefore, similar to elsewhere in the Global South (Martínez et al., 2021; Raju et al., 2021), the women vendors in Vietnam received support from various sources, and their social networks played an important role in supporting them during a crisis. Although the Vietnamese government released a \$2.7-billion financial aid package for the poor and firms affected by COVID-19 (Prime Minister of Vietnamese Government, 2020), and the street vendors were eligible to receive this support, only a small proportion (15.4 %) reported receiving this benefit, which is in line with findings in Colombia (Martínez et al., 2021). Similar to the cases in Southeast Asia and India (Raju et al., 2021; Thai et al., 2021; Turner et al., 2021), many women vendors in Vietnam did not meet the requirements for such support because they lacked proof of residence in

**Table 4**  
Coping strategies to sustain business.

Strategies	N	%
Not applicable due to being unaffected	4	4.4 %
Change sales area	1	1.1 %
Change commodity	0	0.0 %
Change sales method	0	0.0 %
No solution	86	94.5 %
Observations	91	

Source: Authors' calculation.

**Table 5**  
Mitigation mechanisms in response to reduced consumption expenditure.

Mechanisms	N	%
Savings	25	27.5 %
Cash or in-kind supports	29	31.9 %
From friends or relatives	10	11.0 %
From local authorities or government	14	15.4 %
From charity programs	9	9.9 %
From landlords	5	5.5 %
Income from other family members	22	24.2 %
Reduced expenditure for non-essential goods and services	77	84.6 %
Borrowings	40	44.0 %
From friends or relatives	23	25.3 %
From moneylenders at high interest	22	24.2 %
From financial institutions	1	1.1 %
Sales of assets	18	19.8 %
Non-productive assets	17	18.7 %
Productive assets	1	1.1 %
Observations	91	

Source: Authors' calculation.

the city or proof of having an income below the poverty line, while eligible vendors also faced difficulties in obtaining this financial aid due to complicated paperwork and procedures. For instance, according to a 72-year-old immigrant vendor selling beverages:

Many of my neighbors went back and forth many times to apply for the support, which was complicated. I was too weak, so I could not travel too much to receive the support.

When the supports were unavailable or insufficient, the women vendors resorted to other mechanisms to ensure their consumption. In particular, around 27.5 % used savings, which is similar to the result in Colombia (Martínez et al., 2021). Meanwhile, 24.2 % used money from other family members whose income was affected less or not at all. Additionally, a large proportion (84.6 %) reported reducing non-essential consumption, which is much different from the finding in Colombia (only 29 % reported this type of reduction) (Martínez et al., 2021). However, since the vendors tended to adopt a minimalist lifestyle, their nonessential consumption often accounted for a relatively small proportion of their total spending; therefore, they could not save much money by reducing nonessential consumption to spend on essential items.

Another common mitigation mechanism that the women vendors in Vietnam adopted was to borrow money, which is similar to other findings in the Global South (Guha et al., 2021; Martínez et al., 2021; Turner et al., 2021). Around 44 % reported having at least one loan. In particular, only one vendor reported having access to formal loans. Due to their low educational attainment and lack of assets for collateral, they were less likely to access formal loans (McKay et al., 2016; Mustafa et al., 2021). Approximately 25.3 % and 24.2 % borrowed from friends or relatives and high interest-charging moneylenders, respectively, which was also in line with the case in Colombia (Martínez et al., 2021). This raised the important concern that vendors still resorted to obtaining high-interest loans from moneylenders. Since they might have a low repayment capacity due to business loss, they might be pushed into (deeper) debt and poverty, resulting in their daily life potentially becoming chaotic (Guha et al., 2021). For instance, according to a 55-year-old immigrant vendor selling snack foods, beverages, and cigarettes:

My daughter could not repay her debt and thus had to flee to evade her creditors. I must take care of my grandchild... I also had to borrow from moneylenders at high interest to re-invest in my business after the social distancing period.

Similarly, according to a 45-year-old immigrant vendor selling snack foods:

To be honest, I fled to evade my creditors in recent months. I had just re-opened my business for a few days.

Sales of assets was also considered a last resort for the women vendors, with around 19.8 % reporting selling their assets. Our results are in line with other findings in the Global South (SEWA-Bharat, 2020; Turner et al., 2021). Similar to high-interest loans from moneylenders, sales of assets might push them into more trouble and potentially mark a slide into poverty (Agarwal, 2021; Guha et al., 2021; Turner et al., 2021).

Overall, our results revealed that only some women vendors could access formal mitigation mechanisms, while many adopted various informal mechanisms (see Table 5). Nonetheless, most women vendors still suffered a large reduction in consumption (see Table 2), indicating that the mechanisms were insufficient. Therefore, this study highlights the importance of supporting programs to ensure that the basic needs of this vulnerable group are met during a pandemic.

## 7. Policy implications

Although street vending plays an important role in developing cities, this activity has been viewed as an inhibition to urban modernization, resulting in debates regarding whether street vending should be banned from cities (Boonjubun, 2017; Onodugo et al., 2016; Sekhani et al., 2019; Yatmo, 2008). As such, the policy implications associated with street vending can be a complex puzzle. This study highlights some policy implications that could help to sustain and improve the short- and long-term livelihoods and welfare of street vendors during a public health crisis and under normal conditions.

During a pandemic, street vendors in densely populated cities might be at high risk of becoming infected with and spreading disease to their communities. However, vendors have been stuck in a real dilemma during the COVID-19 pandemic: to die from starvation or the virus (Chen, 2020). Therefore, many continued their businesses regardless of the high risk. This study highlights the need for urban policies that focus on supporting vendors and reducing contagion risk to this group during a pandemic by calling for various policy responses and the participation of various stakeholders. In the short run, first, the vendors may only be willing to suspend their business only when they can ensure their basic needs. Therefore, they should be provided with food assistance, housing subsidies, and cash grants (Moroz et al., 2020). However, vendors might not have their registration of temporary residence in a city or proof of income below the poverty line, which makes them ineligible for government supports. Thus, the government should streamline the application procedure and increase the effectiveness and outreach of relief or aid to vendors (Raju et al., 2021; Turner et al., 2021). Second, vendors should receive health safety guidelines, masks, sanitizers or soaps, and a map of water points (Majithia, 2020; Skinner & Watson, 2021). Such guidelines and supports would help street vendors ensure compliance with health and safety measures, thereby reducing the risk of disease infection and spread. Additionally, since many urban populations rely on street food, vendors selling staple food should be supported in continuing their business. As long as vendors follow the appropriate disease safety guidelines and prevention measures, they can trade as safely as supermarkets (Skinner & Watson, 2021; Wegerif, 2020). To enhance the effectiveness of these activities, the adoption of information technology should be fostered to quickly and easily identify and support eligible beneficiaries. The roles of various stakeholders, such as the Women's Union, the Youth Union, the Red Cross, press agencies, and landlords, should be promoted to connect donors and charity organizations, collect information from vendors, deliver safety guidelines and supports to the vendors, and supervise their compliance with public health safety measures. Furthermore, local officials should also play a proactive role in guiding and monitoring street vendors to ensure that the vendors strictly follow safety guidelines while also obeying current government regulations related to street vending activity.

In the longer term, urban agendas should include the formalization

and integration of informal vendors into urban life (Bell & Loukaitou-Sideris, 2014; Song, 2020). Thereafter, they could continue their business and even improve their income while the urban authorities could better manage vending activities and effectively support this group in both normal and crisis states (Martínez et al., 2017; Song, 2020). When formalized, street vendors may: (i) be required to register with different local authorities for a working permit or business license; (ii) incur higher costs (e.g., taxes, license fees); (iii) be allowed to only vend at designated locations and times; or (iv) be required to follow some regulations (e.g., hygienic and sanitary) (Bhowmik, 2003; Hummel, 2017; Kregor, 2017; Lemessa et al., 2021; Roever, 2006). Due to such complications and requirements, not all vendors are willing to (fully) formalize their businesses (Bell & Loukaitou-Sideris, 2014; Bhowmik, 2003; Prasetyo, 2021). Therefore, the formalization of street vending would require great efforts, a multi-action plan, and the participation of various stakeholders—including the street vendors themselves. To this end, the government should first conduct surveys on whether (and the extent to which) vendors are willing to formalize or comply with regulations, as well as the supports they need to do so. Then, bottom-up policies can be designed and combined with top-down policies to enhance the feasibility and effectiveness of policies in practice. Second, communication work should focus on raising vendors' awareness so that they can view formalization as their right to better and more sustainable livelihoods, as well as their duty for the sake of modern and safe cities. Third, the vendors should also receive formal training on hygiene, sanitation, and entrepreneurial, professional, and technological skills (Manepong & Walsh, 2013; Song, 2020). Fourth, more designated places for street vending activities should be planned, constructed, and equipped with basic facilities to enhance food safety, hygiene, and cleanliness (Ojeda & Pino, 2019; Song, 2020). Last but not least, urban development plans must consider street vendors as part of the planning process (Bhowmik, 2003; Onodugo et al., 2016).

## 8. Conclusions, limitations, and future research directions

### 8.1. Conclusions

This study examined the economic life of women street vendors during the COVID-19 pandemic. Our analysis revealed that they were heavily affected by the pandemic. This was particularly true for immigrant vendors and those selling near schools or recreation centers since they experienced a greater economic burden than their counterparts. Almost all vendors lacked coping strategies to sustain their businesses. Thus, they resorted to various mitigation mechanisms to ensure their consumption. Since they lacked access to formal mitigation mechanisms, they had to adopt various informal ones; however, such mitigation seemed insufficient.

This study makes some significant contributions to the literature and practice. First, it used mixed methods to triangulate data and consolidate findings on the economic burden and resilience among women street vendors during COVID-19 social distancing. Second, it examined various topics and indicators associated with economic burden and resilience. Third, it conceptualized an analytical framework of adverse effects of the pandemic on women vendors in the presence or absence of coping strategies and mitigation mechanisms. Finally, it proposed urban social and development policies for developing countries that aim to sustain the livelihoods of vendors and protect public health during a pandemic. Other long-term policy implications for cities and economic development, with a focus on street vendors, were also discussed. Our policy implications are important not only for the ongoing pandemic but also for similar crises in the future. This study carries the important message that no one—especially vulnerable groups—should be left behind and that more resilient cities should be established. Thus, Sustainable Development Goals (e.g., SDG1, SDG2, and SDG3) can be achieved or sustained.

## 8.2. Limitations and future study directions

Despite its contributions, this study is not without certain limitations. First, its use of a small sample and use of convenience sampling may have created some statistical concerns and limited generalizability. As such, future studies should include a larger sample and recruit respondents using random or stratified sampling. Another methodological limitation was the reliance on subjective scales to measure the economic burden of the pandemic. Second, this study did not examine the vendors' perceptions regarding the effectiveness of mitigation mechanisms. Thus, future studies should consider this issue to capture a deeper understanding of their hardships during the pandemic, even when they adopted some mitigation mechanisms. Third, our study implied that street vending should be formalized so that the vendors can receive more benefits or supports in both the normal state and in a crisis. However, the formalization of this activity may be associated with more complicated requirements and higher costs; thus, not all vendors would be willing to formalize their business (Bell & Loukaitou-Sideris, 2014; Bhowmik, 2003; Prasetyo, 2021). Future studies should focus on their willingness to formalize and the support they need to do so, which can provide more detailed, practical, and feasible policies.

## Availability of data and material

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

## CRedit authorship contribution statement

**Pham Tien Thanh:** Data curation, Formal analysis, Investigation, Methodology, Project administration, Software, Supervision, Visualization, Writing – original draft. **Pham Bao Duong:** Funding acquisition, Resources, Validation, Writing – review & editing.

## Declaration of competing interest

No potential conflict of interest is reported by the authors.

## Data availability

Data will be made available on request.

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