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# Toward street vending in post COVID-19 China: Social networking services information overload and switching intention

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ABSTRACT

With the progress of epidemic containment, the Chinese government has relaxed its regulatory policies on street vending, hoping to help people who have lost their livelihoods and to assist in the restoration of social and economic order. In response, Chinese people poured into the stall economy, especially individual peddlers, with great expectations for street vending. Street vending has become a hot topic on Chinese social network sites (SNSs). Based on the push-pull-mooring framework, SNS information overload theory was introduced and combined with the actual situations of street vending in China, and a structural equation model was established to study factors affecting individual Chinese peddlers' intention to engage in street vending and the effects of SNS information overload on these factors. Results revealed that perceived policy benefits, subjective norms, and switching cost perceptions of individual peddlers were positive factors affecting their intention to engage in street vending. SNS information overload positively affected individual peddlers' dissatisfaction with their original business model, anxieties over their livings, perception of policy benefits, and subjective norms but negatively affected individual peddlers' perception of switching costs.

## 1. Introduction

The impact of information technology on society is demonstrated more clearly during the COVID-19 epidemic. The COVID-19 outbreak amplifies the impact of information on human behavior as people are forced to rely on access to new information to quickly adapt to new environments [1]. Residents were informed of the development of the epidemic mainly through government media and social media, and the government gained access to public sentiment and public events through social media [2]. It is necessary to make full use of the developed information technology to accelerate information disclosure through social media so that the public can understand how to contain COVID-19 and improve social collaboration [3]. Although social media analysis cannot replace the work of public health officials, it can help public health professionals make precise and rapid decisions [4]. To reduce the transmission of COVID-19, most people need to maintain social distance. In this case, the application of the internet has been a major channel to learn about the outside world. For example, although hundreds of millions of people stayed at home during the severest period of COVID-19,

they managed to shared their lives through TikTok, which stabilized the emotions of people. However, there is also a dark side of information technology, such as information overload caused by a huge amount of information from the SNS. Especially in a closed and isolated environment, the emotions and behaviors of the public are easily affected by the SNS [1], which may eventually result in the lack of independent thinking of the public and thus have a significant impact on social and economic order. Such an impact in China is fully demonstrated through the creation and development of urban street vending in the epidemic, which offers a good opportunity for us to study the impact of information technology on the urban social order in the epidemic era by analyzing the causes and development of the street vending.

Due to the outbreak of COVID-19, many regions in China adopted strict social containment measures, resulting in the inability of many businesses to properly operate, higher unemployment rates and reduced family income. According to data released by the China National Bureau of Statistics in March 2020, the surveyed unemployment rate in cities and towns across the country was 5.9%, and the surveyed unemployment rate in 31 major cities was 5.7%, which was 0.7% and 0.5% higher,

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respectively, compared with those at the end of 2019. The impact is even more significant for individual traders because their businesses are usually small in scale and low risk resistant.

The individual traders who engage in network trafficking don't have a fixed offline business place and business licenses, they can only sell their products or service through network platforms or instant messenger tools. During the severest phase of COVID-19, the businesses of these traders are interrupted because of the difficulties in delivering. The delivery of goods was frequently delayed or interrupted due to the complicated changes in containment measures, which in turn a large number of goods were stocked. These traders had to find some alternative ways to clear their stocked goods. Some individual merchants in the catering industry, who have fixed business premises, could not operate during the epidemic. After the epidemic containment gradually improved, they were required to limit the flow of customers, which reduced their income to a large extent. They were eager to find alternative ways to maintain their living and make ends meet. Some individual vendors who engaged in overseas shopping also suffered from this epidemic. Due to the disruption or delay of international logistics caused by enhanced scrutiny check and sterilization of goods during clearance, they lost much of their business and had to look for other business models.

In this context, considering the low entrepreneurial threshold, low capital requirements, and low skill and education requirement of engaging in street vending, Chinese government loosened its control over street vending, hoping to ease current social problems through the restoration of street vending. Governmental policies have been proved to have positive impacts on people's employment [5] and advanced information and communication technologies further expand these impacts. Street vending instantly became a hot search term on the internet in China. The Baidu index shown in Fig. 1 indicates the degree of attention given to street vending in provinces and cities in China from May 20, 2020 to June 5, It can be found that before May 27, there was almost no attention to the street vending on the Internet, and after the Chinese government issued a statement on May 27, 2020.5 that it was possible to carry out a reasonable street vending in city, the attention of the street market economy on the Internet continued to increase, reached its highest point on June 4th.

The Baidu index shown in Fig. 2 indicates the degree of attention given to street vending in provinces and cities in China from June 1, 2020 to June 10, 2020. Major cities and provinces in China have paid extremely high attention to street vending. There is a trend that the higher the GDP, the higher the degree of city urbanization and the higher attention given to street vending.

Future social development requires new economic and political synergy [6]. If the Chinese government recognizes the legal status of street vending, improves its economic and social status, and allows the participation of the public in it, this will provide the world with an example of informal economic management [7]. On May 27, 2020, the Chinese government made it clear that roadside markets and mobile vendors would not be considered negative factors in the 2020 national civilized city evaluation. On June 1, 2020, during an inspection tour in Shandong Province, China Premier Li Keqiang, that street vending and small-size businesses are an important source of employment that have the same status as high-end industries. This signified that China would relax the supervision of street vending. The Chinese government would liberalize street vending and allow outside business operations to temporarily occupy public spaces and mobile business activities. There were several reasons for this relaxation. First, due to the impact of COVID-19, the economic situation in China is not as optimistic as expected. China's economy was facing a process of gradual recovery, and domestic companies were still experiencing difficulty and could not provide enough job opportunities. The impact of COVID-19 on some individual peddlers was devastating. It was reported that many individual peddlers (such as individual e-commerce, individual catering, etc.) earned almost nothing during the first half of 2020. Since the relaxation of street vending, individual peddlers who suffered a great deal due to the epidemic began to deploy street vending. Street vending instantly became a popular word on the Internet and a popular SNS platform vocabulary. According to the big data of Baidu.com, as of June 7, the search popularity of topics related to street vending soared by 665% year-on-year.

The popularity of street vending on the internet in China benefited from various information and communications technology-based SNS platforms. Due to the current development of ICT technology, information and knowledge in the world are exploding, accompanied by poor information quality and information value inferiority, resulting in information overload, which has become a major concern [8]. It confuses the public's judgment and affects their ability to use information effectively to make a choice, which in turn results in poor decisions and dysfunction [9]. Therefore, street vending has introduced some problems in the background of the popularity of Chinese SNSs. There is much homogenized and even false information about street vending in SNSs, which was intentionally manipulated by those who are good at marketing. Street vending has deteriorated and become a grand market involving all people. In this context, Because of the misalignment of decision-making caused by information overload, the public is affected by excessive information in SNS. The public cannot understand street vending properly and has become obsessed with it, which is not conducive to the sustained or healthy development of street vending and is contradictive to the original intention of the country's liberalization policy of street vending. As a result, street peddlers have suffered huge losses due to their obsession with street vending. However, information overload does not directly affect individual behavioral decisions. In
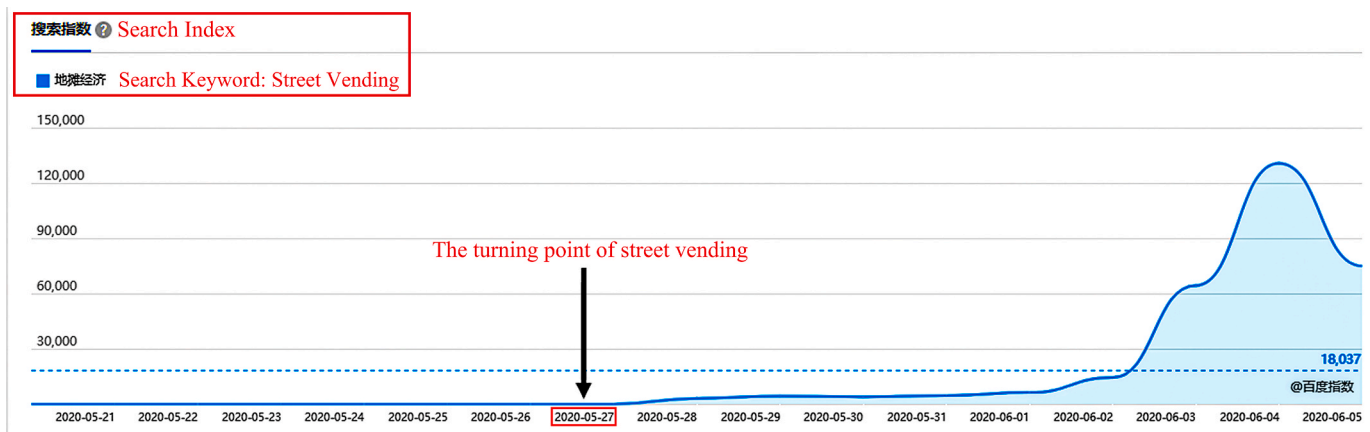


**Fig. 1.** The degree of attention given to street vending according to the Baidu Index between 2020.05.20 and 2020.06.05 in China.

地摊经济 **Street Vending**

省份 **Province**

1. 广东 **Guangdong**
2. 浙江 **Zhejiang**
3. 江苏 **Jiangsu**
4. 北京 **Beijing**
5. 山东 **Shangdong**
6. 四川 **Sichuang**
7. 上海 **Shanghai**
8. 河南 **Henan**
9. 河北 **Hebei**
10. 湖南 **Hunan**

**Search Index**
搜索指数
高 Low
**High**

城市 **City**

1. 北京 **Beijing**
2. 上海 **Shanghai**
3. 杭州 **Hangzhou**
4. 深圳 **Shenzheng**
5. 广州 **Guangzhou**
6. 成都 **Chendu**
7. 苏州 **Suzhou**
8. 重庆 **Chongqing**
9. 武汉 **Wuhan**
10. 长沙 **Changsha**

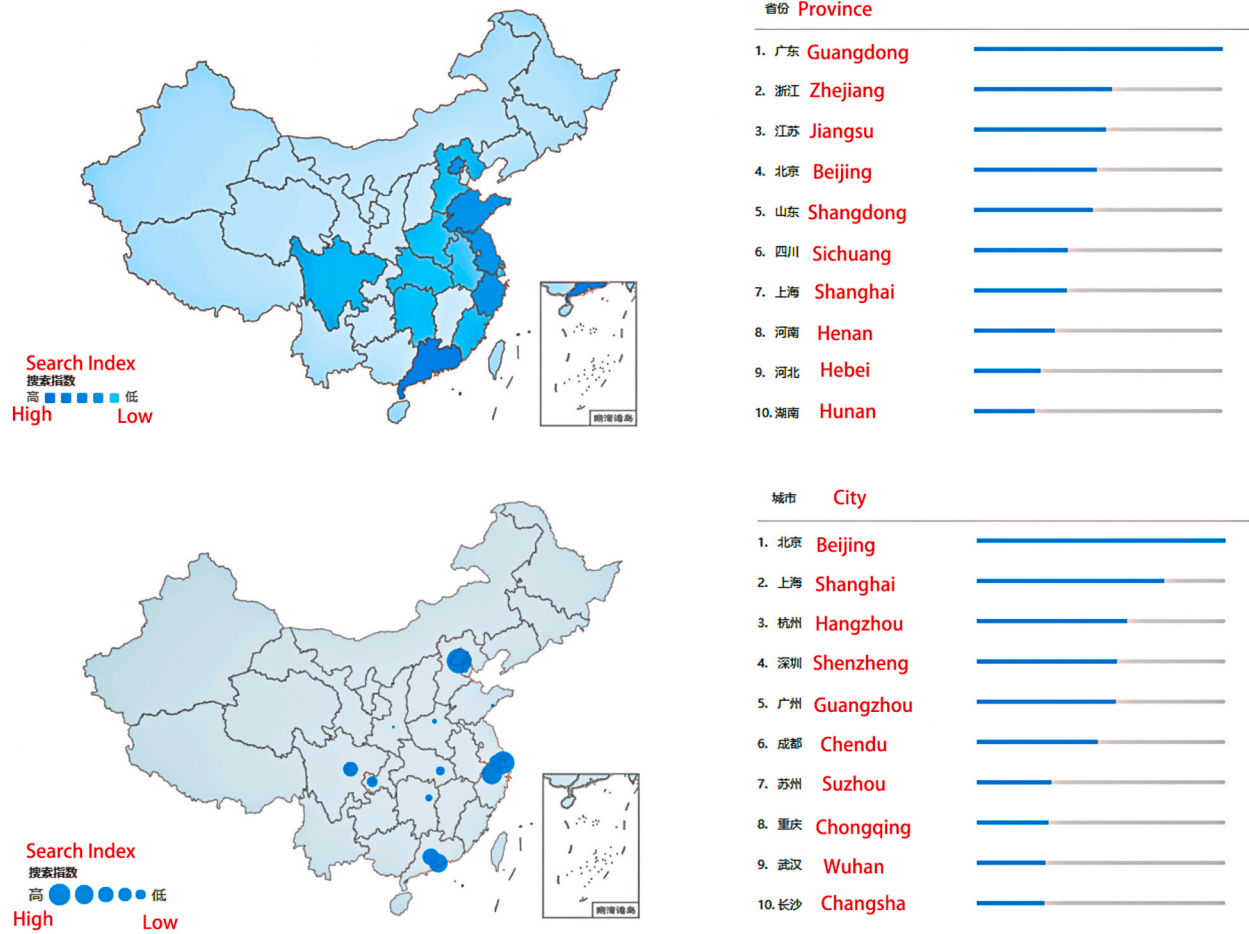**Search Index**
搜索指数
高 低
**High** **Low**

**Fig. 2.** The degree of attention given to street vending in major regions of China according to the Baidu Index.

previous studies, information overload is mostly regarded as an external stimulus, which stimulates the body to produce psychology to prompt the body as a specific action [10].

In summary, the mechanisms of how individual traders shifted to street vending and what roles information technology played in this shift are still remained unknown. So, there are two research gaps on the street vending. (1) it is unclear what factors influence individual vendors to shift their business model to street vending when the government allows after an economic disorder due to a sudden public health emergency. (2) when individual vendors learn a large amount of information about the street vending through social media, the relationship between large amount of information and the factors that influence individual vendors to shift their business model to street vending is also unclear.

The relaxation of policy on street vending by the Chinese government has allowed the legitimacy of street vending to a certain extent, which has promoted the extensive participation of all walks of life and provided a good research background for studying street vending from the perspective of social participation. Based on the actual problems that may arise in current social participation in street vending in China, the objectives of this research were to investigate the following questions:

**RQ1**. At present, what are the factors that currently affect individual merchants to abandon their original business model and switch to street vending?

**RQ2**. : Is there a relationship between information overload and the factors that affect individual merchants to abandon their original

business model and switch to a street vending?

By answering our research questions, several potential contributions exist in this study. First, based on the push-pull-mooring framework, we analyzed the influencing factors such as dissatisfaction, anxiety, policy benefits, subjective norms and switching costs that affect the shift of individual vendors to street vending after public health emergencies, which helps to understand the influencing factors that affect people's willingness to switch jobs during international health emergencies. Second, this study analyzes the relationship between SNS and factors that affect users' willingness to shift in conjunction with information overload theory. This may help to discover the impact of information technology on social order in international health emergencies, and help policy makers and SNS providers to develop correct strategies for managing information on SNS platforms during the post-covid19 economic recovery period and properly guide the recovery of social order. Third, this study helps policy makers develop flexible strategies to help retail service providers survive operational crises during international health emergencies.

## 2. Literature review and hypotheses

### 2.1. Street vending

Street vending usually refers to a type of business activity that occurs in urban areas. A street vendor is a person who offers goods or services for sale to the public without having a permanently built structure but

rather, with a temporary static structure or mobile stall (or head-load). Street vending is a fringe economy in urban areas that is found in most cities worldwide. This form of economy prevails in many developing countries. Street vending provides disadvantaged groups with opportunities to make a living in cities [11], but it is also one of the major challenges facing urban governance [6]. Urban administrations in many countries believe that urban degradation is caused by having a surplus of individual peddlers [12]. Many countries have formulated a series of policies to regulate street vending activities. For example, the Indian Parliament passed the Bill for Protection of Livelihood and Regulation of Street Vending in March 2014 [13]. However, in most countries, street vending does not have a legal status and is frequently prohibited [14].

There are currently two opposing views on the development of street vending. One is that the informal economy represented by street vending is beneficial to economic growth and is an effective way to reduce unemployment and to alleviate the living difficulties of poor in urban areas. Becker [15] pointed out that the informal economy (such as street vending, etc.) should be included in the mainstream overall urban economic planning as part of poverty alleviation. Okoli & Cree [16] studied child hawkers on the streets of Nigeria and maintain that it is necessary to rethink the traditional, rigid, and ineffective polices of forbidding street vending, advocating that in urban planning, innovative, inclusive, and pro-poor policies should be adopted. Roever & Skinner [13] studied the policies of a city in India and found that some organizations and groups were formed by individual peddlers to conduct dialogues with the local government, which promoted the government's legislative protection of street vending. Researchers who are in favor of street vending think that legislation should be strengthened to regulate street vending and provide opportunities for the poor to make a living [17]. The opposing view is that the informal economy represented by street vending is the occupation of public space, which causes various problems for social development and the protection of human rights. Skinner [18] pointed out that cities should be planned well at all costs, even at the expense of the livelihood of poor people. Amegah & Jaakkola [19] believe that individual peddlers are exposed to the outdoor environment and that their health is endangered by environmental pollution. Developing countries should improve education, reform systems and improve financial means to eliminate these activities. However, these researchers ignored the fact that making a living is much more important than escaping the harm caused by environmental pollution. For individual peddlers, protecting and supporting street vending is far more important than so-called advanced urban governance.

Street vending has a long history in China and has developed into a certain scale. According to the Baidu Index data (Please see Fig. 2), people in Guangdong, Shandong and Zhejiang provinces in China are more concerned about street vending than those in other provinces. In terms of cities, people in Beijing, Chengdu and Hangzhou are more concerned about street vending. Scholars have used these areas as examples to study the development of street vending in China. Xue & Huang [20] explored the nature of supervision of individual peddlers in Guangzhou since 1949 from the perspective of informal economy. They found that the country's tolerance for informal behavior was dependent on the country's historical environment. Flock and Breitung [21] analyzed Guangzhou's street vending and indicated that it provided a way for low-income urban families to maintain their livelihood and can be more integrated with the developing market economy. Huang, Zhang, & Xue [22] analyzed 200 individual peddlers in Guangzhou and found that street vending was an effective strategy for ordinary workers to cope with living difficulties during socioeconomic transformation, and it should not be considered a factor affecting urban development. Rather, they argue that it should be understood as a way to deal with the problems that arise in social transformation. Li et al. [23] analyzed how individual peddlers in Beijing successfully ran their businesses in cities from the perspectives of power, route, speed, rhythm, experiences and conflicts. They found that the local government was ambivalent in managing individual peddlers. Individual peddlers in China do not

effectively abide by local rules and regulations, but local authorities selectively tolerate, suppress, or authorize the operations of street vending. In practice, city management should flexibly manage such business activities. In this way, the needs of different groups can be taken into consideration, and social justice can be promoted. In these studies, street vending was regarded as an informal economy strictly controlled by the state that was contradictive to the urbanization process. The relationship between urban development, urban policy, national supervision, and street vending was studied from the perspective of informal economy. However, the factors that affect social participation in street vending as a formal economy are scarcely reported and waiting for analysis.

## 2.2. Push-pull-mooring framework (PPM)

The PPM framework, originally designed for human migration research [24], is considered the primary theory of immigration research, explaining why people migrate from one geographic area to another within a given period of time [25]. In PPM theory, human migration is affected by three factors: push, pull and mooring. The push and pull factors were first mentioned in "the Law of Migration" by Ravenstein [26]. Longino [27] introduced the mooring factor. Moon [28] incorporated it into the push-pull framework to explain migration, demonstrating that migration was affected by the mooring factor. Pushing effects refer to the negative factors that push a person away from a location, such as natural disasters and unemployment. Pulling effects refer to the positive factors that attract potential immigrants to a certain destination [29]. Pulling factors may include better employment opportunities, higher income, good environment and higher living conditions [30]. Because the push-pull effect cannot fully explain the migration behavior of humans, the probability of mooring was introduced. Mooring effects refer to factors that hinder decisions of individual migration [25].

The PPM model derived from the theory of human migration is the cornerstone of understanding migration intentions because migration not only indicates migration across geographic locations but can also be further extended to other daily activities. Although these activities do not involve physical movements, they often indicate changes in human behaviors. In this sense, migration across jobs and industries can also be regarded as migration to some extent. At present, PPM theory has been widely used in many disciplines, especially in the fields of consumer behavior and information management systems.

The PPM model has been widely used to analyze offline intentions and behaviors. Although there have been no studies on the transformation of business models using PPM, there have been studies using the PPM model to analyze the intention to switch jobs. Some studies indicated that career satisfaction is the primary push factor of job willingness change, and the threat of career obsolescence is also a push factor that is not as strong as satisfaction, while professional self-efficacy and career investment are mooring factors for the change of job willingness, of which professional self-efficacy is the most important mooring factor [31]. Haldorai, Kim, Pillai, Park, & Balasubramanian [32] used a pull-push-anchor framework to investigate turnover and intentions of hotel employees in Malaysia and demonstrated that career development, emotional labor, interpersonal tension, personal life interference with work, and work overload are the primary factors affecting employees' intentions to switch to turnover. Among them, work overload and personal life have the strongest influence on work interference. Community fitness, social status, and travel opportunity are pulling factors that affect turnover, and social status has the strongest influence. Participation in personal life is the most important mooring factor.

The reasons that we chose the PPM model as the theoretical basis of this study are as follows. First, our research focused on individual peddlers' intentions to switch their business models. The individual peddlers' switching intention is similar to migration. When switching to a

new business model can bring them improved benefits, they might be willing to change their previous business models. Second, based on analyzing the factors of intention to switch to street vending, our study examined whether SNS overload caused these factors and what could be considered as the influence of online or offline information. Previous studies have verified the feasibility of PPM in interpreting changes in online or offline behavior. Therefore, we think it is appropriate to use the PPM model as the theoretical basis of this research.

### 2.2.1. Push effects

Satisfaction has been considered a predictor of system adoption and continual use in previous studies [33]. Satisfaction is considered a push factor from the perspective of the PPM model [25,34]. In the PPM model, satisfaction is the primary factor that drives individuals to leave their original place of residence [25]. Most users' switching intentions stem from their dissatisfaction with the current situation. Satisfaction has a negative impact on users' behavioral changes. Previous studies using the PPM framework reported that dissatisfaction with existing products or services was the key factor leading to users' conversion intentions [35–37]. A study by Chang et al. [35] showed that users' dissatisfaction with existing SNSs was positively correlated with their intention to switch to other SNS providers, but it was affected by the feeling of regret generated during the use of the original service. However, the effect of satisfaction on switching intention is not strong. Research by Sun et al. [36] found that dissatisfaction with existing mobile instant messaging tools did not have a significant positive impact on the intention to switch to other mobile instant messaging tools. Rather, boredom with the service affected the intention to switch. A study by Tang & Chen [37] demonstrated that dissatisfaction with information quality was significantly related to the unfollowing of brand SNS, and dissatisfaction played the most significant and most relevant push role in switching intention. From the perspective of intention to switch jobs, existing studies have proven that satisfaction is the most important factor affecting the intention to switch jobs [31]. Individual peddlers' businesses are their own work, and changing their business model can be considered the intention to switch to other work.

Due to the impact of COVID-19, some industries, including the store-based service industry (catering, homestays, hotels, shopping malls, KTV, tourism, transportation, etc.), have been seriously hampered. Because of the severe impact on cash flow, a large number of stores closed their businesses. Because of isolation, a huge number of companies' businesses were not as efficient as usual, which may have reduced their business income. According to the National Bureau of Statistics of China, as of the end of November 2019, there were 81.62 million individual industrial and commercial households nationwide. In China, self-employed businesses basically exist as households, that is, almost 80 million households and hundreds of millions of people are engaged in self-employed business. Such self-employed businesses have been greatly affected by the impact of the epidemic. Because strict social blockade measures are adopted for a period of time, people must stay at home. During this period, income is difficult. When the society gradually restores order, the intermediate links needed to support the original business model may be costly a lot (such as housing rent, Labor wages etc.) cannot be restored in a short time. Therefore, individual businesses' satisfaction with their original business models will decrease. Perhaps the original business models can no longer satisfy such individual peddlers, which will prompt them to change their business models. Due to the liberalization of China's policies on street vending, individual peddlers may have the intention to switch their business models and try street vending. Combined with the actual situations and theoretical backgrounds, the following hypothesis was proposed:

**H1.** The dissatisfaction of individual peddlers has a positive impact on the intention to switch to street vending.

Affected by the COVID-19 epidemic, individual peddlers have encountered operational difficulties, resulting in poor living conditions

and anxiety over daily life. In SNSs, many individual peddlers worried about their lives. Complaints like "*I cannot start my business, but I have to pay for the rent and employee wages. Will I be eliminated by society if I continue this way? I experience various anxieties every day*" are frequently seen in the SNS. When the government liberalizes its policies and a new business method emerges, individual peddlers' anxiety over life may prompt them to switch their business models and try street vending.

Anxiety is divided into state anxiety and trait anxiety. State anxiety refers to the subjective perception of anxiety and tension in a specific situation. Trait anxiety is derived from individual differences, and individual differences lead to anxiety tendencies [38]. The former reflects the influence of environmental factors, while the latter is related to individual factors. However, no matter what kind of anxiety, it is difficult for people to stay awake in daily life with continuous anxiety [39]. Leary [40] demonstrated that the relationship among anxiety, cognition, and behavior was seen as repetitive or cyclic, with each factor affecting the others. Brown [41] analyzed the effects of social physique anxiety on the intentions of action in a population of 94 female undergraduates. Some scholars discussed the relationship between anxiety and decision-making. Ladd & Lenz [42] thought that certain social anxieties changed people's intention to vote on political decisions. For example, during the Great Depression in the 20th century, economic difficulties caused extreme anxiety, but such anxiety did not make the public produce a careful reassessment of the government's role in economic development; instead, it made the public accept any available options.

In the conversion of intention to switching work, studies have pointed out that emotional labor, interpersonal tension, personal life interference with work, work interference with personal life, and work overload are the main factors affecting employees' job switch. These factors may be the cause of employee anxiety [32]. Combined with the actual situation of COVID-19 and the theoretical backgrounds, we propose the following hypothesis:

**H2.** Anxiety has a positive impact on the intention to switch to street vending.

### 2.2.2. Pull effects

The first pull factor considered in this article is the perceived policy benefits. Perceived benefit refers to the perceived likelihood that taking a suggested action will lead to a positive result [43]. Tsujikawa, Tsuchida, & Shiotani [44] indicated that perceived benefit is a cognitive emotion that exerts a positive influence on individual behavior.

In this research scenario, perceived benefits can be summarized as perceived policy benefits. Street vending is an informal economy. Informality is one of the key issues faced by cities in the 21st century and one of the primary challenges faced by urban policies. Government authorities need to coordinate the relationship between informal economy, manageability and humanity [6]. Roy [45] believed that informality is generated by the state, and the state itself has the power to "decide what is informal, what is formal, which forms of informality should flourish and which should disappear." Street vending usually arises from 4 issues in the government's control policies: unsafe workplaces, irritation from government authorities, confiscation of goods by government authorities, and expulsions by government authorities [13]. Therefore, street vending is a business model that is highly affected by public policy. At present, the Chinese government has relaxed its regulatory policy on the street vending for the first time. As of June 4, more than 20 cities in China have issued policies to clearly encourage the development of street vending, and many places are also speeding up the development of encouraging policies. These policies may tempt many individual businesses suffering from the epidemic to try street vending. Therefore, in the context of this research, the perceived benefits of business to street vending can be regarded as benefits of the government's policy relaxation. Ho et al. [46] demonstrated that perceived benefits and perceived risks are negatively correlated because the current Chinese government policies reduce common risks and perceived

risks and increase the perceived benefits of peddlers. We can regard such perceived benefits as perceived policy benefits. Such perceived policy benefits may be attractive to individual peddlers, and attractiveness is an important factor in promoting individual switching intentions [36].

Many studies have shown that policies have a positive effect on people's behavior [5,47–50]. Gao & Tian [49] studied the dissemination process of urban residents' green behavior and demonstrated that the intensity of policy regulation has an important impact on the scale of green behavior diffusion. Fu et al. [47,48] confirmed the importance of effective incentive policies on encouraging environmental protection behaviors in road freight transportation in a study on environmental awareness based on China's road transportation. An analysis of Chinese listed companies found that policy risks have a negative impact on corporate financing decisions [50]. Combined with the actual situation of COVID-19 and theoretical backgrounds, we propose the following hypothesis:

**H3.** Perceived policy benefits have a positive impact on individual peddlers' intention to switch to street vending.

Due to policy changes in regulating street vending, many business operators in China have poured into street vending, forming a broad social atmosphere. As of June 4, there were 910 million clicks and over 134,000 follow-up posts on the Weblog topic of street vending. As the scale of participation continues to increase, experience sharing and exchanges will become more extensive, which may eventually prompt individual peddlers to make changes in their business models.

A person's perception of whether he participates in a particular behavior is called subjective norms. This term was first proposed in the theory of planned behavior [51]. In this theory, subjective norms are the most direct factors that predict individual behavior, and users' adoption decisions are greatly influenced by social factors, such as the decisions of important people [51]. As a major social factor, subjective norms are related to users' intentions to switch to alternatives [36,52]. In this epidemic, individual traders may turn to change their business model because they see the behavior of their friends around them and are influenced by friends (e.g., persuasion), this can also be understood as a kind of alternative attractiveness. Studies have pointed out that alternative attractiveness is a pulling factor [53]. This kind of influence among friends can also be considered as a network effect. Once the user scale reaches a critical number, external benefits will appear and attract more users to join [54], This network effect has also been proven to be a pulling effect [55]. Therefore, subjective norms can be considered as a pulling factor. Combining the actual situations of COVID-19 and theoretical backgrounds, the authors proposed the following hypothesis:

**H4.** Subjective norms have a positive impact on the intention to switch to street vending.

### 2.2.3. Mooring effects

Among mooring factors, switching cost is an important factor. Switching cost is defined as the one-time cost required by the customer in the process of switching from one supplier to another [56]. Switching cost is also considered the user's perception of how much it will cost to change service providers [57]. This cost can be real or perceived monetary or nonmonetary cost, or a mixture of the two, such as search cost, transaction cost, learning cost, loss of loyal customer discounts, emotional cost, and cognitive effort [58]. Individuals tend to consider the cost of switching behaviors and make optimal decisions based on this. Switching costs include sunk, setup, and continuity costs.

Sunk cost is the perception of the time, money, and energy that users have invested in using the current service. They are costs that have already occurred and cannot be reversed [59]. Evidence from behavioral economics shows that because humans are born to avoid losses and tend to over-interpret the principle of not wasting, sunk costs will greatly affect the decision-making of participants [60]. Therefore, people tend to be faithful to their original choices due to sunk costs [59].

Setup cost refers to the additional funds (e.g., time, etc.) required to change a behavior. When users realize that it is not worth the extra time and effort to change a behavior, they may be unwilling to change and instead, maintain the status quo [36,61].

Continuity cost means that if users change their behaviors and end the current service, they will lose the specific benefits accumulated by continuing to use the current service. Users will insist on using the current service because of the specific benefits that they have obtained, regardless of potential better alternatives [36,61]. In the study of switching cost as a mooring factor, Zhang et al. [34] considered that sunk cost was a mooring factor that affected users' intentions to switch to weblogs in their research on weblog conversion behavior. However, we think this result is not sufficiently comprehensive. The use of a service will inevitably accumulate experience, benefits, etc. This has a strong relationship with continuity cost. When switching costs are used as mooring factors, continuity costs must also be considered. Some studies have demonstrated that sunk costs may have no effect on people's intention to change certain behaviors depending on the type of product. Setting high sunk costs may not necessarily prevent people's behavioral changes [59].

In the background of the present study, individual peddlers may have established not only considerable sunk costs due to long-term operation in a certain business model, such as investment in the previous business model, but also have considerable continuity costs, such as accumulated customers. If they fail in the switch of business model, the customers obtained in the previous business model may be lost. At the same time, they need to pay a certain setup cost when they switch to street vending. Regardless of whether it is sunk cost, continuity cost, or setup cost, for individual traders, they can all be considered an investment in their career, and studies have confirmed that career investment is an important mooring factor affecting the intention of job switching [31]. Therefore, the cognition of switching costs can be considered a mooring factor that hinders individual peddlers from trying to change their business models. Therefore, we propose the following hypothesis:

**H5.** Perceived switching costs have a negative impact on the intention to switch to street vending.

### 2.3. SNS information overload

The term "information overload" first appeared in Gross's work [62]. The classic definition of information overload states that information processing capability cannot meet the requirement of information processing [63]. In this definition, the length of time is used to define information processing requirements and capabilities, that is, whether the ability to process information within a certain time frame matches the amount of information that needs to be processed. Generally, information overload occurs during the retrieval and analysis of information, the decision-making process and the sufficient process [63]. The key factors of information overload are not only the amount of information received but also the pressure, confusion, stress and anxiety that individuals who are exposed to the information may experience [64,65]. The degree of information overload also depends on the individual's knowledge and experience [66]. Each individual's knowledge reserve and cognitive ability are limited. When the information load exceeds the individual's cognitive ability, information overload occurs. Information overload will make an individual confused, affect his ability to prioritize, make it difficult to use previous information effectively, cause decision-making errors and dysfunction, and cause anxiety or stress [9]. Information overload occurs especially when the nature of the information is uncertain, complex or strong [67]. Studies have confirmed that information overload has a significant impact on consumers' decision-making. The quality of individual decision-making is positively correlated with the amount of information they receive within a certain limit. The quality of decision-making decreases significantly when information overload occurs [68].

Information overload has a negative impact on the health of information seekers. When the speed of information acquisition exceeds the information seekers' information processing ability, it has a profound impact on their physiology, psychology, emotions and social relationships [69], and anxiety, depression, anger, etc., will occur. Swar, Hameed, & Reychav [70] investigated the impact of information overload on people from the perspective of online medical information searches. They demonstrated that perceived information overload is positively correlated with idiosyncratic anger, idiosyncratic anxiety and depression. Matthes, Karsay, Schmuck, & Stevic [71] studied information overload on mainstream SNS platforms (Facebook, Instagram, WhatsApp and Snapchat) in Western countries and found that information overload is an important factor in predicting depression.

With the rapid development of information technology, a huge amount of information is generated every day, especially within the background of the widespread use of social media. Social media has completely changed our way of life and has had a profound impact on society. With the rapid development and popularity of social media platforms, such as Facebook, Twitter, Instagram, and Weblog, people can quickly obtain and share information through social media and quickly establish contacts, regardless of geographic distance. In the United Kingdom, 21% of SNS users think they obtained too much information from this SNS [72]. In Japan, 27% of Twitter users believe that they receive too many tweets every day [73]. Therefore, information overload in social media is common. Related research has shown that the proliferation of the internet and SNS has introduced new types of overload, including excessive information, involuntary social networks, and rapid changes in SNS technology [74]. SNS service is based on information communication technology, and its information overload type can be divided into information overload, communication overload and system overload. When people are exposed to too much information beyond their processing ability, information overloading occurs [63]. Communication overload refers to the fact that the communication demand through SNSs exceeds the user's communication ability [75]. System overload refers to the negative effects caused by increased difficulty brought by the new features of SNSs [8]. In general, in the currently fast-developing SNS network, information overload occurs frequently, producing various impacts on daily public life.

Information overload has an important impact on individuals' behavioral intentions. The existing literature pointed out that information overload affected individual behavior through a stimulus-organism-response (S–O–R) mechanism, which means that information overload is an external stimulus (S) that continuously causes stimuli to the organism (O), prompting a behavioral response (R) (e.g., Refs. [47,76]. In the context of COVID-19, information overload has also been shown to indirectly influence people's behavior under the S–O-R mechanism. A study investigating information avoidance behavior in the context of COVID-19 noted that the stimulus effect of information overload caused the body to experience sadness, anxiety and cognitive dissonance, which ultimately led to information avoidance behavioral responses [77]. Another study investigated the effect of information overload on SNS users' self-isolation behavior in COVID-19 based on the stimulus-organism-response mechanism, which indicated that information overload could stimulate SNS users, prompting a psychological response of cyber-hypochondriasis and ultimately influencing users to make behavioral responses of self-isolation [78]. Therefore, in this study, information overload is brought into the PPM framework as a stimulus and as an antecedent of Pull, Push and Mooring factors to analyze the role of information overload in the willingness of vendors to switch business models.

There is a potential link between information overload and users' satisfaction [1]. Too much SNS information tends to bring unpleasant feelings, and the higher the degree of information overload perceived by an individual, the worse the individual's subjective state will be [79]. A previous study analyzed information overload in the use of social networking sites and pointed out that information overload has a

negative impact on satisfaction [80]. Another investigated information overload on Facebook and found that users were dissatisfied with their use of Facebook when they experienced information overload [81,82].

During COVID-19 pandemic, many self-employed businessmen could only express their emotions through SNS because they had to stayed at home upon the requirement of COVID-19 containment. Moreover, there were also many pessimistic analyses on SNS by internet celebrities about the impact of the epidemic on business development. This large amount of negative information creates information overload, making the subjective state of individual traders worse and worse, and they may become dissatisfied with the original business model. Therefore, this study proposed the following hypotheses:

**H6**. SNS information overload has a positive impact on individual peddlers' dissatisfaction with the original business model.

Information overload can also lead to a variety of mental illness symptoms such as anxiety, anger, depression, and other negative effects. The increased level in information overload resulting from the increased use of digital communication technologies may have a negative impact on an individual's attention, well-being, behavioral intentions, and health. A survey among the Chinese population suggested that the internet is now powerful in disseminating information and can easily and quickly convey a wealth of health information to consumers and that the increasing amount of online health information may challenge consumers' limited information processing ability, leading to negative traits associated with mental illness, such as anxiety, anger, and depressive symptoms [70].

In this COVID-19 epidemic, individual traders became anxious about both their health conditions and social insurance due to business decline or interruption. In the context of strict social isolation measures for containing COVID-19, the information about these two aspects is bound to accumulate on SNS. When the information overload takes place, the anxiety over health and business are stimulated. Therefore, this study proposed the following hypotheses:

**H7**. SNS information overload has a positive impact on individual peddlers' anxiety about life.

The amount of perceptual information has a positive impact on the perceived benefits to the individual [83]. The news that Chinese government loosened regulations on street vending has been a hot topic on all major SNS platforms. Individual peddlers can obtain a lot of news about government policies through SNSs. However, due to the huge amount of information, a large amount of homogeneous, irrelevant, and vague information has been mixed. These characteristics are often important factors leading to information overload [84]. So, in this case, information overload is inevitable. It has been established that information overload affects people's perceptions of behavioral norms and practices [85]. It happens that, in the context of this study, information overload is caused by a large amount of information about policy benefits that individual traders receive in a short period of time, which may lead individual traders to increase their perceptions of relevant policy benefits. Therefore, the following hypotheses are also proposed in this study.

**H8**. SNS Information overload has a positive impact on individual peddlers' perceived policy benefits about street vending.

Based on the theory of planning behavior, we consider social influence as subjective norm, which refers to the ability of important people to influence individual behavior [86]. SNS users may feel that the subjective norms given by social influence provide them with social support. The subjective norms given by social influence are closely related to information overload, too much social support and interaction can cause information overload, which is also known as social overload [10, 87].

During COVID-19, an increasing number of people have to turn to street vending. In this context, a street vendor might increase his

communications about the street vending in his social network. After he learned through SNS that a large number of prestigious figures had joined street vending and communicated more with his friends, he might end up with information overload (social overload) and became less capable of self-determination [88]. This might increase the subjective norms of participation in the street vending. Therefore, the following hypotheses are also proposed in this study.

**H9**. SNS Information overload has a positive impact on the subjective norms of individual peddlers' attempts to set up street vending.

Information overload can reduce an individual's cognitive ability and lead to avoidance of information [77]. Decreased cognitive ability affects the individual's ability to read information, particularly in terms of misjudging the difficulty of tasks. A previous study showed that information overload reduced the ability of patients to read health information, decreased their perceived behavioral control and created the illusion that they could complete appropriate health tasks without significant cost [89]. A study on people's willingness to isolate in the current epidemic also indicated that information overload had influenced perceptions of response costs [1]. In the context of this study, when individual traders get a lot of information about street vending from SNS, especially a lot of information that advertises the ease of switching to street vending, it is possible for individual traders to enter a state of information overload. In this state, their cognitive ability decreases and they feel that is easy to switch to street vending without paying a large switching cost. This means that information overload reduces the perceived switching cost of individual traders. Therefore, the following hypotheses are also proposed in this study:

**H10**. SNS information overload has a negative impact on the perceived switching cost of individual peddlers' intention to switch to street vending.

## 3. Research model and questionnaire survey

In conjunction with the discussion in section 2, this study developed a model to testify the hypotheses above. The overall logic of the model proposed in this study is as follows: (1) in this COVID-19 epidemic, two

factors, including dissatisfaction with the original business model and anxiety about life, drive the willingness of individual vendors to switch to the street vending; perceived policy benefits and subjective norms pull the willingness of individual vendors to switch to the street vending; and perceived switching costs hinder the willingness of individual vendors to switch to the street vending. (2) SNS information overload does not directly influence individual vendors' willingness to shift to the street vending; it stimulates individual vendors' willingness to shift to the street vending by increasing their anxiety and dissatisfaction with the existing business model, increasing their subjective norms and perceived policy benefits, and reducing their perception of perceived switching costs. Based on previous research and the background of street vending in China, this study combined PPM theory and information overload theory with the proposed relevant hypotheses. The research model is shown in Fig. 3.

We designed a questionnaire based on existing research and the actual situations of the current research in the context of COVID-19. The questionnaire was reviewed by experts in the field of information management systems. Sixty undergraduate students were also invited to do a pre-testing. The final questionnaire is shown in Appendix A.

The questionnaire survey was distributed online through SNS. Before the questionnaire was distributed, members of the school ethics committee were consulted to ensure that there were no ethical concerns in the questionnaire. The following information was given to all participants: 1) The questionnaire was anonymous; 2) The content and purpose of the survey was clearly explained; 3) All participants are free to answer or not to answer the questionnaire; 4) The questionnaire does not involve personal or private information; and 5) All participants will receive a gift after completing the questionnaire.

According to the degree of interest in street vending among Chinese regions in the Baidu Index (Fig. 2), residents of Guangdong Province paid the most attention to street vending between June 1 and June 10, 2020. Therefore, the questionnaire was distributed in Guangzhou, the capital of the Guangdong Province. A 5-point Likert scale was used for all questions in the questionnaire. The questionnaire was in a web format. When we designed the questionnaire, all questions in the questionnaire were compulsory. If a question was unanswered, the questionnaire could not be submitted. If a participant selected "*Do not*
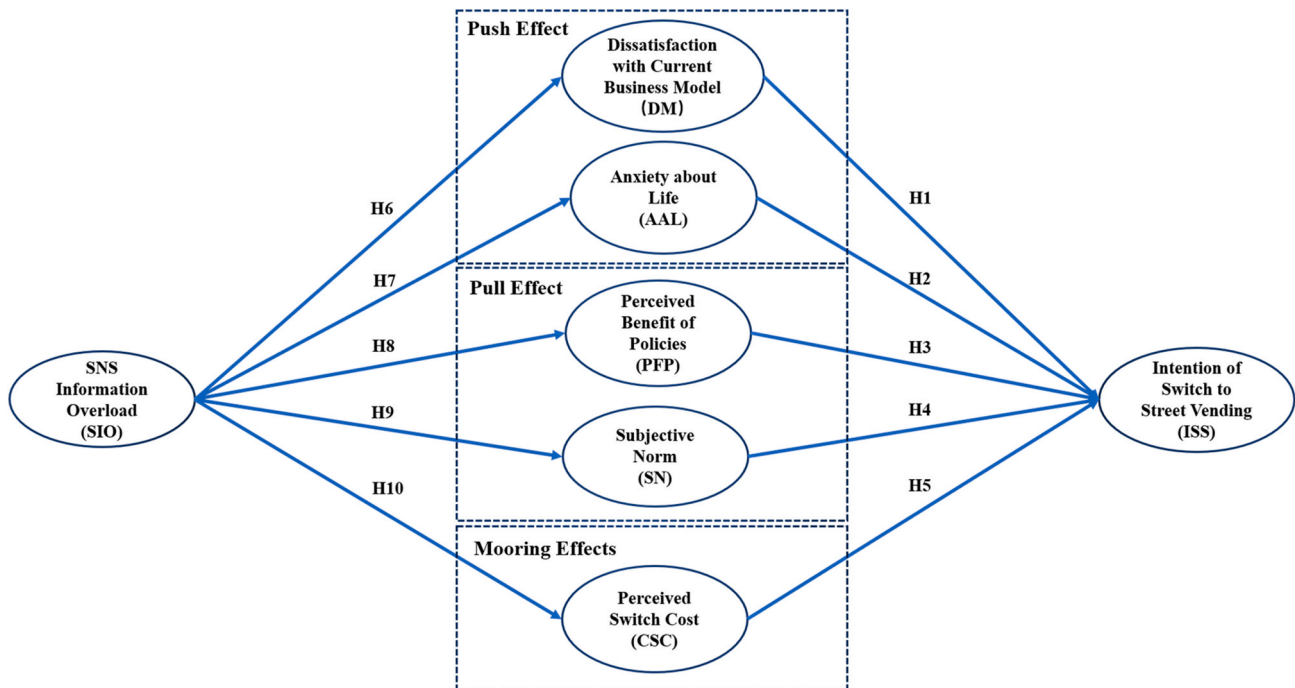


**Fig. 3.** Proposed research model.

know street vending" or "*Have no business experience*", or "*I didn't learn about the street vending through SNS*",the interview was automatically terminated, and no follow-up survey was performed. This prevented the interviewees from missing any questions. The questionnaire was distributed through SNS between June 16 and July 6, 2020 to individual peddlers who had conducted commercial activities in China. A total of 450 questionnaires were distributed. After excluding unqualified and invalid answers, 286 valid copies were collected (63.5%).

In the survey, we conducted a necessary demographic survey. The proportion of female respondents (n = 211, 73.8%) was higher than that of male respondents (n = 87, 26.2%). The age of the respondents was primarily between 20 and 40 years old (N = 233, 81.4%). Of all respondents, 83 (29%) had not received higher education, and 190 (66.4%) had received college or undergraduate education. There were 13 people (4.5%) who had masters or doctoral degrees. The monthly income of the respondents was primarily between 3000 and 5000 RMB yuan (N = 154, 53.8%). The business scale of the respondents was mostly in groups of 1–2 (N = 219, 76.6%). In order to identify whether the surveyed people have participated in social networks, we also surveyed the SNS sources of the street vending that the interviewees learned about. Among these sources, the largest number of respondents learned about the street vending through social networking sites such as WeChat and Weibo (N = 87, 30.4%). The second is the short video platform represented by Douyin (known as Tiktok internationally) (N = 70, 24.5). The third is the online news media platform represented by Today's Headlines and Tencent News (N = 66, 23.1%). The fourth is the instant message APP represented by WeChat (N = 54, 18.8%). Another 3.1% (N = 9) of respondents learned about the street vending through other kind of SNS platforms. Although there are differences between these Chinese SNS platforms and mainstream western social media platforms, speech on these platforms is free and the likelihood of government regulation is low as long as it does not violate the law.

According to the respondent demographics, despite most of the respondents were female, we argue that the quality of the data that used for further analysis is not affected. First, it has been pointed out that women are more likely to participate in questionnaires than men [90, 91]. Second, according to the analysis of the Baidu index (http://index. baidu.com) on the characteristics of people who are concerned about the street vending, the vast majority are women (57.14%). Finally, most of the respondents in our study is operated in two-person combinations, and there are many cases where men and women operate together, so the impact on the data analysis should be minimal, regardless of whether the participants are male or female. To sum up, gender differences are not the main issue in this study and the respondents of this study are representative.

To avoid nonresponse bias, a homogeneity of variance test was performed for the first 20 and the last 20 respondents who submitted the questionnaire [92]. Results showed that all demographic items were at the 0.05 probability level, and there were no statistically significant differences between the two groups.

## 4. Data analyses and results

### 4.1. Common method bias

Harman's single-factor analysis is widely used to estimate the possibility of common method bias in social science research [93]. Podsakoff et al. [94] proposed that a single factor must be extracted. If the variance is less than 40%, it means that the survey data are less affected by common method bias. Harman data analysis performed in this study showed that the proportion of extracted variables was 36% (less than 40%). Therefore, common method bias was not a problem in this study.

### 4.2. Measurement model estimation

The structural equation model (SEM) is a statistical method based on

the covariance matrix of variables to analyze the relationship between variables. It is an important tool for multivariate data analysis. To verify the hypotheses proposed in this study, we used the structural equation model for verification.

Our study adopted the partial least squares structural equation modeling (PLS-SEM) method using SmartPLS 3.0. PLS-SEM is a second-generation multivariate data analysis method, mainly used to develop exploratory theoretical studies. It is a method that can be analyzed while ensuring the integrity of all relationships between independent and dependent variables [95,96]. The use of partial least squares in social science research has several advantages. First, although PLS-SEM is similar to regression analysis, it can simultaneously measure the validity and reliability of variables, as well as the path relationship between variables and the explanatory power of the model [97]. Second, the least squares method is useful for prediction and it is less restrictive on sample size than other methods [98]. Since it is possible to model latent variables without the constraints of sample size and relationships between variables, it has received much attention from researchers in recent years, especially in the study of management information systems [98]. Third, PLS-SEM is more suitable than CB-SEM for the measurement of complex models, especially in models larger than 6 variables [99]. Fourth, PLS-SEM allows analysis of data that are not normally distributed [99]. Finally, in contrast to covariance-based techniques (e.g., AMOS) which results in a significant loss of indicator variables in the effort to achieve an acceptable Goodness of Fit (GOF), PLS-SEM is able to retain a larger number of indicator items to support measurement and theory development. In general, partial least squares is more appropriate than CB-SEM at the stage of theoretical development, and it has been shown that PLS-SEM can replace CB-SEM in most social science research situations [100]. Moreover, the PLS-SEM has also been widely employed in the social, economic, and business studies (e.g., Refs. [95,101]. In this study, there were seven variables and these data did not follow a normal distribution. Therefore, the choice of PLS-SEM for data analysis is appropriate for this study.

A confirmatory factor analysis was conducted before hypotheses testing, the results are displayed in Table 1. First, we performed a collinearity diagnosis, and the VIF between each aspect was less than 10, indicating that there was no collinearity problem. We used composite reliability to evaluate internal consistency reliability (CR). As shown in Table 1, the CR of each construct was higher than 0.7, and Cronbach's α was also higher than 0.7, indicating that the questionnaire items used in each dimension were highly reliable [100]. Convergent validity was determined by evaluating the average variance extracted (AVE). When AVE is higher than 0.5, it meets the criteria of convergent validity.

**Table 1**

Results of confirmatory factor analysis (CFA) for the measurement model.

| Latent variable | Item | Loading | Cronbach's a | CR | AVE | VIF |
|---|---|---|---|---|---|---|
| SIO | SIO1 | 0.971 | 0.937 | 0.970 | 0.941 | – |
| | SIO2 | 0.969 | | | | |
| AAL | AAL1 | 0.948 | 0.833 | 0.921 | 0.854 | 1.012 |
| | AAL2 | 0.899 | | | | |
| MD | MD1 | 0.926 | 0.858 | 0.913 | 0.778 | 1.717 |
| | MD2 | 0.909 | | | | |
| | MD3 | 0.807 | | | | |
| SCC | SCC1 | 0.865 | 0.721 | 0.877 | 0.781 | 2.041 |
| | SCC2 | 0.902 | | | | |
| PFP | PFP1 | 0.910 | 0.818 | 0.916 | 0.846 | 1.310 |
| | PFP2 | 0.930 | | | | |
| SN | SN1 | 0.922 | 0.829 | 0.921 | 0.854 | 2.272 |
| | SN2 | 0.927 | | | | |
| SW | SW1 | 0.938 | 0.854 | 0.931 | 0.872 | – |
| | SW2 | 0.930 | | | | |

Abbreviations: MD (Dissatisfaction with current business model), AAL (Anxiety about life), PFP (Perceived benefit of policies), SN (Subjective norm), SCC (Perceived Switch Cost), SIO (SNS information overload), SW (Intention to Switch to Street Vending).

Discriminant validity was evaluated by testing the square root of AVE. The square root of the AVE of each construct should be greater than the correlation between itself and all other constructs, indicating that the evaluation of convergent validity is correct [102]. In the model using this study, the minimum average variance (AVE) of each facet was 0.778 (higher than 0.5), indicating that the scale had good convergence validity [100]. The load of all items in this study was above 0.7 (Please see Table 2). The square root of AVE (the number on the diagonal) of each facet was greater than all the correlation coefficients. These results indicated that the discriminant validity of this study scale met the research requirements.

The suitability of the model was also checked in this study. The Goodness of Fit was calculated using the square root of the average value of the R-squared endogenous variables and the average value of Communality. The result of the Goodness of Fit must be above 0.1. If it is higher than 0.36, it means that the model fitness is high (0.25–0.36 and 0.1–0.25 for medium and low fitness) [103]. After calculation and measurement, the goodness of fit of the research model in this study was 0.35, indicating that the fitness of this model was up to the standard and that the model is more meaningful.

### 4.3. Structural model

While testing the research model, we tested the overall explanatory power of the structural model, the amount of variance explained, and the strength of the path. The path coefficient of the model was obtained using SmartPLS 3.0 software (Fig. 4). As shown in Table 3, in the analysis of factors affecting individual peddlers' intention to switch to street vending, the relationship between "Dissatisfaction with the current model" and "Intention to Switch to Street Vending" was not significant (ß = −0.076, ns), indicating that hypothesis 1 was not supported. The relationship between "Anxiety about life" and "Intention of Switch to Street Vending" was not significant (β = 0.013, ns), demonstrating that hypothesis 2 was not true. There was a positive relationship between "Perceived benefit of policies" and "Intention of Switch to Street Vending" (β = 0.082, p < 0.05), suggesting that hypothesis 3 was supported. "Subjective norm" was positively correlated with "Intention of Switch to Street Vending" (β = 0.711, p < 0.001), supporting hypothesis 4. There was a negative relationship between "Perceived Switching cost" and "Intention of Switch to Street Vending" (ß = −0.227, p < 0.001), suggesting that hypothesis 5 was true.

In the analysis of the influence of social media information overload on individual peddlers' intention to switch to street vending, there was a positive correlation between "SNS information overload" and "Dissatisfaction with the current model" (β = 0.232, p < 0.001), showing that hypothesis 6 was supported. There was a positive correlation between "SNS information overload" and "anxiety about life" (β = 0.274, p < 0.001), indicating that hypothesis 7 was supported. "SNS information overload" and "Perceived benefit of policies" were positively correlated (β = 0.175, p < 0.05), indicating that hypothesis 8 was also supported. "SNS information overload" and "subjective norm" were positively

correlated (β = 0.453, p < 0.001), indicating that hypothesis 9 was supported. There was a negative correlation between "SNS information overload" and "perceived switching cost" (ß = −0.664, p < 0.001), suggesting that hypothesis 10 was supported as well.

In the overall model, the $R^2$ of Intention of Switching to Street Vending was 0.752, indicating that the structural model explained 75.2% of the variance in intention of switching to street vending, which was satisfactory [104].

## 5. Discussion and implications

### 5.1. Discussion of findings

The previous studies have shown that satisfaction is the primary factor that drives individuals to leave their original place of residence. In the user's intention to switch behavior, satisfaction has a negative impact [25,36,37]. Through analysis of the model in this study, it was found that dissatisfaction with the original business model did not have a positive effect on individual peddlers' intention to switch to street vending (H1), distinct from previous research. This phenomenon can be explained from two aspects. (1) there may be some unknown hindering factors regulating the relationship between dissatisfaction with the original business model and willingness to switch. A study on the willingness of SNS to switch pointed out that the relationship between dissatisfaction and willingness to switch was regulated by hindering factors. In this case, even if users were dissatisfied with the existing SNS, they would not necessarily have the intention to switch SNS providers [35]. In the context of this study, it can be argued that when individual vendors are ready to switch to street vending because they are dissatisfied with their current business models, they are influenced by additional factors that reduce their willingness to switch. (2) at the early stage of the epidemic, normal economic activities stagnated due to containment (such as home isolation, business suspension, reduced flights and land transportation), resulting in interruption of the supply chain of individual peddlers, underemployment, reduced income and decreased purchasing power. Individual peddlers were forced to terminate their businesses, making them feel unsatisfied with their original business models. Most of these dissatisfactions might be caused by external factors, such as the environment. When the epidemic gradually stabilized, the original business of individual peddlers recovered to a certain extent, and thus, the intention to change the business model retreated.

Analysis of this research revealed that the anxiety of individual peddlers did not have a positive effect on their intention to switch to street vending (H2). This is in contrast to the results of previous research and is a new finding of this research. In previous studies, anxiety had a positive effect on behavior [40], and anxiety made the acceptance of alternatives easier [42]. In this research, we introduced the psychological concept "mindfulness" to explain this phenomenon. Kabat & Jon [105] defined mindfulness as a method of mental training. In this spiritual training, the emphasis is on the present rather than on judging all the ideas of the present. In other words, mindfulness is paying attention to everything in the moment with a purpose but without making any judgments, analyses or reactions to the status quo. Tomasz & Wacław (2019) indicated that anxiety might be an important predictor of mindfulness. Therefore, in the actual background of this research, social problems caused by the epidemic caused anxiety. Mindfulness is accompanied by anxiety. Some studies have shown that mindfulness has a certain relationship with people's escape psychology [106]. Therefore, even if street vending becomes popular, those who feel anxious about their lives because of "mindfulness" will only consciously follow the development of street vending as bystanders, but will not necessarily join in.

In this study, the hypothesis that perceived policy benefits had a positive effect on individual peddlers' intention to switch to street vending (H3) was confirmed, consistent with previous studies [47–50].
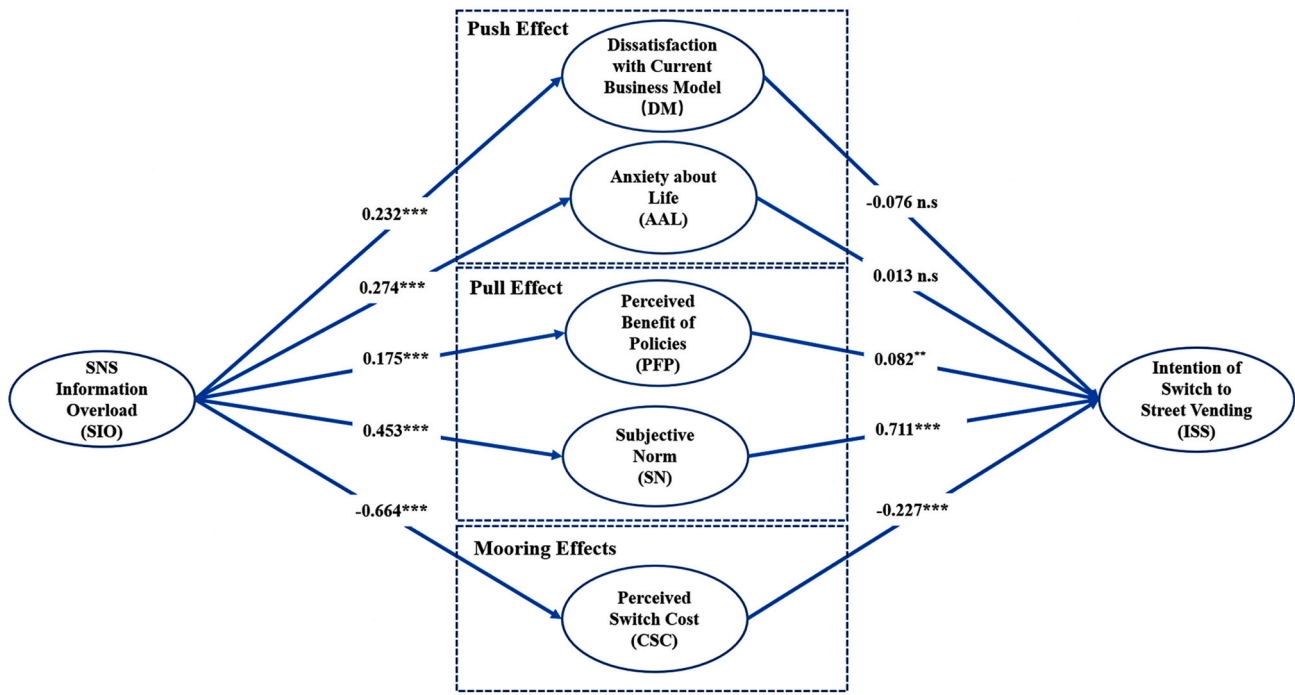
**Table 2**
Factor correlation coefficients and square roots of the AVE.

|      | AAL    | MD     | PFP    | SCC   | SIO   | SN    | SW    |
|------|--------|--------|--------|-------|-------|-------|-------|
| AAL  | 0.924  |        |        |       |       |       |       |
| MD   | 0.038  | 0.882  |        |       |       |       |       |
| PFP  | −0.036 | 0.475  | 0.920  |       |       |       |       |
| SCC  | −0.084 | −0.428 | −0.191 | 0.884 |       |       |       |
| SIO  | 0.274  | 0.232  | 0.175  | −0.664| 0.970 |       |       |
| SN   | 0.086  | 0.511  | 0.177  | −0.709| 0.453 | 0.924 |       |
| SW   | 0.088  | 0.424  | 0.214  | −0.715| 0.521 | 0.849 | 0.934 |

Abbreviations: MD (Dissatisfaction with current business model), AAL (Anxiety about life), PFP (Perceived benefit of policies), SN (Subjective norm), SCC (Perceived Switch Cost), SIO (SNS information overload), SW (Intention to Switch to Street Vending).

**Fig. 4.** Testing results of the research model (*p < 0.05; **p < 0.01; ***p < 0.001, ns: nonsignificant).

**Table 3**
Hypotheses testing results.

| Hypotheses | ß | STDEV | T Statistics | P Values | Result |
|---|---|---|---|---|---|
| MD- > SW | −0.076 | 0.043 | 1.767 | 0.077 | Reject |
| AAL- > SW | 0.013 | 0.034 | 0.381 | 0.703 | Reject |
| PFP- > SW | 0.082 | 0.040 | 2.029 | 0.042 | Support |
| SN- > SW | 0.711 | 0.060 | 11.939 | 0.000 | Support |
| SCC- > SW | −0.227 | 0.060 | 3.769 | 0.000 | Support |
| SIO- > MD | 0.232 | 0.052 | 4.440 | 0.000 | Support |
| SIO- > AAL | 0.274 | 0.046 | 5.937 | 0.000 | Support |
| SIO- > PFP | 0.175 | 0.064 | 2.730 | 0.006 | Support |
| SIO- > SN | 0.453 | 0.040 | 11.196 | 0.000 | Support |
| SIO- > SCC | −0.664 | 0.023 | 28.398 | 0.000 | Support |

Abbreviations: MD (Dissatisfaction with current business model), AAL (Anxiety about life), PFP (Perceived benefit of policies), SN (Subjective norm), SCC (Perceived Switch Cost), SIO (SNS information overload), SW (Intention to Switch to Street Vending).

Street vending has always been an informal economy, and it has been greatly affected by public policies. The power of the state can determine which is formal and which is informal [45]. When street vending is protected by policies, there is a powerful pulling force to lead the public to participate in it widely. In China, after the epidemic stabilized, the country began to work hard to recover the economy. To solve the livelihood problems of individual peddlers and other groups that had been severely affected by the epidemic, authorities at all levels lifted the control policy pm street vending in cities. In this way, perceived policy benefits worked as a pull effect, and more individual peddlers had the intention to engage in street vending.

The subjective norms in this research had a positive impact on individual peddlers' intention to switch to street vending (H4), which also validated previous research [51]. The adoption decisions of users are greatly influenced by the decisions of important people. As an increasing number of people participate in street vending, more users are drawn into street vending [54]. Hou [52] demonstrated that subjective norms were important social factors in users' intentions to switch to alternatives. The more people who participate in street vending in the social network of individual peddlers, the stronger the subjective norms of the

individual peddlers, and the more likely it is to change the business model to try street vending.

In this study, it was confirmed that the cognition of switching cost had a negative impact on the intention of individual merchants to change their business models to try street vending (H5), verifying previous research. Switching cost is important in the anchoring factor in PPM theory, and it is the user's perception of how much it will cost that changes the service provider [57]. These costs will greatly affect the decision-making of the participants. Because of the cost, people are more inclined to the initial choice. In the actual environment of this study, the customers accumulated by individual peddlers on the original model, the hardware cost or the energy they spent, or the establishment cost they needed to invest in street vending affected individual peddlers' intentions to switch to street vending.

This study also verified the influence of SNS information overload on various factors in the PPM model. First, the overload of SNS information caused individual peddlers' dissatisfaction with the original business model (H6) and anxiety (H7). Previous studies also found that information overload caused physical and psychological effects, making information receivers anxious and angry [69]. In this study, we also found that SNS information overload make individual peddlers feel anxious about life and make them dissatisfied with the original business model. Because too much information tends to bring unpleasant feelings, when the degree of information overload perceived by an individual is higher, the worse the subjective state of the individual will be, which will easily lead to dissatisfaction. [79]. Information overload can also lead individuals to develop psychological disorders such as anxiety and depression, and the increased level of information overload that results when people increasingly use digital communication technologies can have a negative impact on an individual's attention, well-being, behavioral intentions, and health. In this epidemic, there was a large amount of negative information on SNSs due to the quarantine measures for prevention and control, and people were more inclined to follow similar behavioral patterns during the epidemic [107]. So, these negative messages would have resonated with individual business owners. They eventually became overwhelmed and showed their dissatisfaction with the original business model and anxiety about their lives.

Second, our research confirmed that SNS information overload had a

positive effect on individual merchants' perception of policy benefits (H8). Information overload can affect people's perceptions of behavioral norms and practices [85]. In the context of this study, a large amount of information about policy benefits available to individual traders in a short period of time led to information overload, so that there was a short period of time for individual traders to improve their perceptions of the relevant policy benefits. SNS information overload had a positive impact on the perception of subjective norms (H9) because too much social support and interaction can cause social information overload [10,87]. Individual vendors end up with social information overload and increased subjective norms of participation in street vending because a large number of celebrities joined street vending and they had a large amount of communication with these celebrities through SNS.

Third, SNS information overload has a negative effect on the perceived switching cost (H10), because information overload reduces an individual's ability to read and comprehend information [89]. In the context of street vending, information overload reduces their perception of switching costs, giving them the illusion that they can shift to street vending without paying a lot of costs. SNS is also full of homogenous news of street vending in a short time. Many internet opinion leaders may also perform a large number of activities related to street vending on SNSs for their own interests, resulting in the misconception of individual peddlers that they can easily obtain income by trying street vending with little effort.

### 5.2. Theoretical contribution

Our study provides several contributions to the literature. Firstly, although there have been many studies on the willingness to switch jobs based on PPM, this study is the first study to analyze the willingness of individual vendors to switch jobs (change of business model) using the PPM framework in the context of an international health emergency, extending the context in which the PPM framework theory is used.

Secondly, many studies analyzed the role of perceived benefits in the PPM framework, but this study is an analysis of job switching intentions in the context of international health emergencies by subdividing perceived benefits into perceived policy benefits and introducing them into the PPM framework, extending the antecedents that influence job switching intentions in specific situations.

Thirdly, the impact of technology on social development is significant. However, there is a dark side of technology. In our study, we brought the information overload factor in the dark side of technology into the PPM model for the first time, and found the impact of information overload on perceived policy benefits and switching costs, which enriches the theory of information overload.

### 5.3. Practical contribution

This study also provides some practical implications for the management of SNS information in international health emergencies. Firstly, the screening of information and the dissemination of positive emotions should be enhanced on SNS platforms to guide the public to rationally assess their current situation and future. From the results of this study, it appears that in the context of COVID-19, factors influencing the intention to turn to street vending were triggered by SNS messages and influenced by the information orientation of SNS. Information overload of SNS aggravated the emotional problems of individual vendors, such as dissatisfaction with old patterns and anxiety about life. Such negative effects can be particularly amplified in public social crises such as COVID-19, which may lead to individual psychological problems and even social instability.

Secondly, SNS platform should pay attention to the management of policy benefit information. A large amount of information can make people fully aware of new policies and allow them to fully enjoy the benefits of policies. Further, too much information about policy benefits can easily cause misinterpretation and lead to people's blind obedience. When the public finds a gap between the actual policies and the one-sided information about policy benefits they get from SNS, it will lead to a series of social problems and increase the difficulty of governance.

Thirdly, SNS platforms should pay attention to the influence of the activities of opinion leaders in the network. Online opinion leaders will be able to quickly increase people's subjective norms and quickly promote people to make changes. This requires SNS managers to regulate the behavior of online opinion leaders to prevent their bad opinions from leading people to act in a way that has a negative impact on society.

Fourth, SNS platforms should organize experts to analyze and interpret the hot topics appearing on the internet in a timely and rational manner, so that the public can fully understand both sides of an issue and have a correct understanding of the cost of action.

### 6. Conclusions

This study analyzes the willingness of Chinese individual vendors to switch to street vending in COVID-19 and the role of SNS information overload in the willingness to switch. The perceived policy benefits and subjective norms had a positive effect on individual peddlers' intentions to switch to street vending, while the perception of switching costs had a negative effect. This research also confirmed that SNS information overload caused individual peddler dissatisfaction with the original business model and induced individual peddler anxiety. SNS information overload had a positive effect on individual peddlers' perception of policy benefits and subjective norms. SNS information overload exerted a negative impact on individual peddler perception of switching costs.

This study has several limitations. First, in the mooring factor in PPM theory, the conversion cost is divided among sunk cost, setup cost and continuity cost. However, these subcategories were not separately addressed in this paper. In the future, we need to analyze these factors separately. It is necessary to understand in more detail which cost has a greater impact on the economic impact of individual peddlers turning to street vending. It should also be understood that SNS information overload weakens the public's understanding. Second, there is a process that occurs from changing the will to actually changing the behavior. Whether SNS information overload affects this process and the mechanism of the effect needs to be further studied. In addition, the modulating effect of mooring factors on push-pull factors has been emphasized in many studies. In this study, this effect was not examined. Finally, more research should be performed to investigate the effect of education level, income, and gender on the intention of the public to switch to street vending.

## Appendix A

| Factors | Serial Num. | Item | Reference |
|---|---|---|---|
| SNS Information overload (SIO) | SIO1 | There is too much information about street vending in SNS. | Lee et al. [74] |
| | SIO2 | I need to spend more time reviewing the information about street vending contained in the SNS. | Liu and Kuo [89] |
| Dissatisfaction with the current model (MD) | MD1 | After obtaining information about my business from SNS (or communicating with my peers), I am dissatisfied with my previous business model. | Chang et al. [35] |
| | MD2 | After obtaining information about my business from SNS (or communicating with my peers), I am unwilling to continue my previous business model. | |
| | MD3 | After obtaining information about my business from SNS (or communicating with colleagues), I feel uneasy about continuing to engage in the previous business model. | |
| Anxiety about life (AAL) | AAL1 | After obtaining information about my business from SNS (or communicating with my peers), in recent life, I feel that I am easily affected by emotions such as excitement, anger, shock or fear. | Swar et al. [70] |
| | AAL2 | After getting information about my business from SNS (or communicating with my colleagues), I feel very worried about my recent life. | |
| Perceived benefit of policies (PFP) | PFP1 | According to the information obtained through SNS, I think the current policy is beneficial to try out the street vending. | Li et al. [83] Jung et al. [29] |
| | PFP2 | According to the information obtained through SNS, I think the cost of trying street vending under the current policy is very low. | |
| Subjection norm (SN) | SN1 | My friend thinks that I should try the business model of a street stall. | Liu and Kuo [89] |
| | SN2 | Most people I think are important think I should try the street vending mode. | |
| Perceived Switching cost (SCC) | SCC1 | From the information obtained through SNS, I think if I change the original business model and try street vending, I will lose a lot. | Sun et al. [36] Chang et al. [35] |
| | SCC2 | From the information obtained through SNS, I think it takes a lot of time and energy to try street vending. | |
| Switching intention (SW) | SW1 | I am considering trying street vending. | Chang et al. [35] |
| | SW2 | In order to solve my current problems, I am willing to try street vending. | |

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