

The effect of poverty on street vending through sequential mediations of education, immigration, and unemployment

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ABSTRACT

There is limited research that has explored the effect of poverty on street vending. The current study attempts to explore this area by looking into the relationship between poverty and street vending via multiple mediations such as lack of education, immigration, and unemployment. By testing a sample of 425 responses that reflect the perspective of the general public in Iraq, this study proposes and validates a number of mediation models using the partial least squares structural equation modeling (PLS-SEM) approach and the PROCESS macro in SPSS. The main findings suggest that poverty positively impacts street vending. In addition to this direct effect, poverty influences street vending via multiple mediations: lack of education and unemployment mediate the effect of poverty on street vending; immigration and unemployment mediate the effect of poverty on street vending; and finally, lack of education, immigration, and unemployment mediate the effect of poverty on street vending. However, lack of education and immigration do not mediate the effect of poverty on street vending. The theoretical contributions, managerial implications, limitations, and recommendations for further research are provided.

1. Introduction

Street vending is a problematic issue to residents, formal sellers, and public authorities, which may lead to violence (Tonda & Kepe, 2016). It attracts children to work with their family enterprises, and shortens the distance between adulthood and childhood. Adults push their children to stay in the unlicensed marketplace (Estrada, 2016). Street vendors are mostly misunderstood and accused of being drug dealers, counterfeits, and pirates (Ilahiane & Sherry, 2008). Street vendors, on the other hand, have succeeded in obtaining jobs for themselves and earning income. They participate in poverty and unemployment reduction in addition to entrepreneurial development (Nirathron, 2005). Roving street vendors, who sell vegetables and fruits, have continued ties with the rural sector of the economy (Jensen & Peppard, 2003). They market agricultural products and merge the rural sector with the urban sector, which helps to narrow the poverty gap between these two sectors.

The current paper aims to enrich research on the relationship between poverty and street vending, since prior research on this topic is

quite limited. The paper suggests a model that is tested theoretically and empirically: that poverty positively influences street vending via a lack of education, immigration, and unemployment. The model, to the best of our knowledge, is new and unique and has an incremental contribution to the field of street vending and to the debate on how to solve this problematic issue. The model is distinguished from prior research by adding three mediating variables.

The model is empirically tested on a sample which reflects the public's attitude in Baghdad, the capital city of Iraq, to street vending and surrounding factors. We select the general public in order to formulate a public opinion which can help to shape public policies to deal with the pervasiveness of street vendors. Street vending has historically existed in Iraq for decades in the center of traditional markets. The general public and authorities are quite accepting of the existence of peddlers. Iraq has dramatically changed in the last 20 years. Since the US-led alliance occupied Iraq in 2003, the political instability has been increasingly damaging and financial resources have mostly been allocated to fighting terrorism. The unemployment rate has sharply increased and the state has not become a place for recruitment, as it used

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to be during Saddam Hussein's dictatorial regime. The local authorities in Baghdad have weakened because of terrorism, sectarian tensions, and tribal fighting. The number of street vendors in Baghdad has doubled many times because of high unemployment, immigration from unsafe cities, an increase in the level of poverty among part of society, and dropouts from schools. Street vending has become a serious problematic issue to residents, public authorities, and formal sellers. The high pervasiveness of street vending in Iraq has become an incentive for researchers in order to produce a better understanding of the phenomenon.

Structuralism theory provides basis for theoretical foundation of this study. It asserts that the pervasiveness and potential growth of street vending can be explained as a survival endeavor or as a last option available of livelihood since street vendors can not gain formal jobs. Urban informality is a necessity for poor people in lots of developing countries. Street vending takes forms such as cart vending, kiosk (stall), and sidewalk sellers. The structuralist perspective looks at street vending as a necessity-driven informal jobs which increasingly unstable and insecure (Ladan & Williams, 2019; Williams & Gurtoo, 2012; Williams & Youssef, 2014). Researchers assert that poverty is the leading factor causing the pervasiveness of street vending. When poverty increases or the economic conditions worsen, street vending increases (Huang, Zhang, & Xue, 2018; Husain, Yasmin, & Islam, 2015; Lyons, 2013; Truong, 2018). Although, literature conceptually supports the association between poverty and street vending, research to date does not provide enough empirical evidence.

There are some other theories: modernization theory asserts that street vending is a residue from pre-modern or traditional sectors and will disappear as the economy further develops; neo-liberal theory states that street vending is a rational economic choice; while post-modern theory explains the phenomenon due to cultural reasons. In practice, no single theory can be proved because of the complexity of the phenomenon. This is a call to develop a comprehensive model which can offer a satisfactory explanation (Williams & Gurtoo, 2012; Williams, Adom, & Horodnic, 2020). Our study aims to enrich structuralism theory by adding new constructs mediating the relationship between poverty and street vending.

The scholarly community has mostly studied the relationship between public authorities and street vending (Batréau & Bonnet, 2016; Caron, 2013; Flock & Breitung, 2016; Forkuor, Akuoko, & Yeboah, 2017; Tonda & Kepe, 2016). The most critical challenge facing street vendors is the government's ban, which reduces their income and increases conflicts (V.D. Truong, 2018). When the government aims to relocate or remove street peddlers, it does not take the serious social problems of those peddlers into consideration (De Pádua Carrieri & Murta, 2011). The status of unlicensed street vendors has become a burden since they cannot get access to public services such as courts and arbitration, and always struggle with public security officers who are in charge of regulating the streets (Swider, 2015). In Delhi, India, for instance, policy efforts have even been spent on formalizing the informal: some forms of informality are criminalized, while others have been approved (te Lintelo, 2017). Regulators sometimes adopt tolerance for controlling street vendors. If the tolerance is unorganized, revocable, and unpredictable, the conflicts between authorities and vendors will continue (Caron, 2013).

Researchers have also addressed factors affecting street vending, which is the main concern of the current paper. Although covering these factors, their contributions have tended to be disconnected or incoherent; the deficiencies in existing research have prompted us to write this paper. For example, Lyons (2013) and Malôa (2013) find that street vendors fail to get formal credit. Street vendors consider their business as work culture or a profession to them (Tamilalai & Angayarkanni, 2016; Wibisono & Catrayasa, 2018). Restrictive policies result in an increase in violence and vendor resistance (Boonjubun, 2017; Hanser et al., 2016). Customers with a low level of income intend to spend a short period of time shopping in neighboring streets and buy

at low prices (Tamilalai & Angayarkanni, 2016; Yatmo, 2009).

Researchers put more emphasis on the effect of poverty, a lack of education, immigration, and unemployment individually on street vending. Teenagers, younger children, and girls have to earn money on the streets mainly because of poverty (Estrada & Hondagneu-Sotelo, 2011; Saha, 2011). Illiterate people, or even those with a low level of education, cannot get jobs in the formal sector (Husain et al., 2015; Williams & Gurtoo, 2012). Political instability pushes migrants to work as street vendors in other cities (Lapah & Tengeh, 2013; Muñoz, 2012). High unemployment, especially in rural areas, pushes people to trade on the streets (Pick, Ross, & Dada, 2002; Truong, 2018).

Prior research mostly focuses on examining the effect of a single factor, such as unemployment or immigration, on street vending (Muñoz, 2012; Saha, 2011; Truong, 2018; Williams & Gurtoo, 2012). Thus, the multivariate influences of these four constructs (poverty, lack of education, immigration, and unemployment) on street vending have to be examined. This paper also aims to test the interplay between the stated constructs. Even though there is limited research to explain street vending via poverty (Dufour, Reina, & Spurr, 2003; Martinez & Rivera-Acevedo, 2018; Truong, 2018), to the best of our knowledge the current study is unique in enriching this area by looking into the relationship between poverty and street vending via the multiple mediation of a lack of education, immigration, and unemployment.

Previous research has explored the perceptions of street vendors and helped to understand their characteristics (Reid, Fram, & Guotai, 2010; Tengeh & Lapah, 2013; Wibisono & Catrayasa, 2018). However, an analysis of the public's perspective is yet to be produced, in which it is extremely important to shape public opinion and then develop appropriate public policies to handle this problematic issue (Chai, Qin, Pan, Deng, & Zhou, 2011).

The purpose of this paper is to fill these gaps by building and testing a comprehensive model to explain street vending (see Fig. 1). The paper proposes a model that is intended to make a significant impact on research into street vending due to its main focus on two key areas: first, the direct effect of poverty on street vending; and second, the multiple mediating roles of a lack of education, immigration, and unemployment on the relationship between poverty and street vending. To achieve the objectives of the paper, we have to address the direct effect of a lack of education, immigration, and unemployment on street vending. Additionally, the paper investigates the interplay among exogenous constructs, for example the relationship between poverty and education or the relationship between education and immigration.

The next section builds the conceptual framework and hypotheses based on previous literature. Section 3 demonstrates that the measured items are derived from each construct. Then, data is collected and presented to show public attitudes in Baghdad, the capital city of Iraq, which experiences the pervasiveness of street vending. Section 4 examines the measurement model, structural model, and hypothesis testing using the partial least squares structural equation modeling (PLS-SEM) approach. Section 5 discusses the theoretical contributions, managerial implications, limitations, and future research directions.

2. Conceptual framework and hypothesis development

Though the role of the informal economy is not considered part of gross domestic product, the informal economy importantly contributes to increasing employment and decreasing poverty in most developing countries (Ilahiane & Sherry, 2008; Lyons, 2013). Street vendors, known as hawkers or peddlers, form an obvious segment of the economy. In developing countries, urban street vendors have existed for decades (Nani, 2016). Even though street vending contributes to the formal economy and the vibrancy of public spaces, its role is frequently unappreciated by the city's officials. Hawkers suffer indiscriminate purges from sidewalks and marketplaces (Recio & Gomez, 2013).

Street vendors aim to maximize returns regardless of the interest of public authorities, residents, and other formal sellers. Traffic flow and

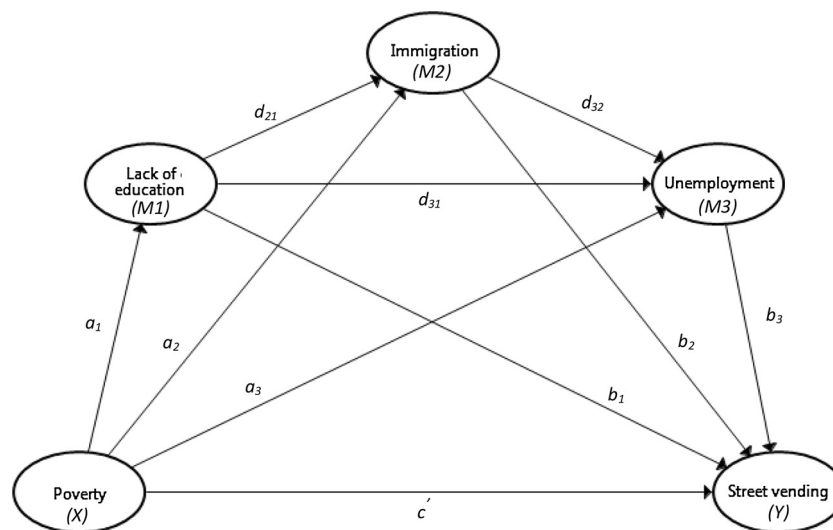


Fig. 1. Conceptual model.

infrastructure are used for street hawkers' purposes. Peddlers also develop skills and attitudes to keep themselves successful in changing markets. Some of them can be considered as entrepreneurs (Palacios, 2016). They work many hours per week compared to their peers who work in the formal sector; in addition, they do not have opportunities to shift into the formal economy (Husain et al., 2015). Home-based enterprises and street vending are two important segments of the urban informal economy, and have generally similar economic characteristics such as sales per day, monthly family expenditures, and initial funding for their business (Goswami & Begum, 2016). The recent changes in the phenomenon of street vending reveal that it has started to attract more single and married women in addition to more young and educated people (Nani, 2016).

Street vendors face extreme competition with each other in the overcrowded streets, enter the stage of diminishing marginal returns, and face disillusionment with the formal sector (Agadjanian, 2002). In this early stage, we have to differentiate between unlicensed street vendors and licensed street vendors. The first category struggles for survival against eviction campaigns and they work under harsh conditions, while the second category enjoys well-established ties to governmental and non-governmental organizations (Cuvil, 2016). The current paper attempts to examine the effect of poverty on the pervasiveness of unlicensed street vending via poor education, illegal immigration, and unemployment.

In the following sub-sections, we investigate in greater detail the theoretical background to the constructs in the proposed model.

2.1. Poverty

Poverty results in negative consequences which lead to street vending. Scholarly studies refer to poverty, political instability, recession, or economic crises and a low level of development as factors affecting street vending. The large family size and high population growth rate result in poverty, which pushes people to trade on the streets (Husain et al., 2015). People who migrate from rural areas work as street vendors because of low farm output and limited farming land (Truong, 2018). Rural poverty is a motive for the proliferation of urban street vending (Huang et al., 2018). Street vendors face barriers to expanding their business and have to stay on the streets (Lyons, 2013).

Teenagers, younger children, and girls earn money on the streets. The public consider their work deviant, low status, and illegal. The dignity of those younger children is injured and they encounter shame, stigma, and humiliation (Estrada & Hondagneu-Sotelo, 2011). Street vendors in Mumbai, India, are very deprived people and work too many

hours per day (Saha, 2011). Also in Johannesburg, South Africa, 51 % of women street vendors lift heavy weights and complain of work-related injury or illness such as burns, cuts, headaches, and musculoskeletal problems. They suffer a lack of shelter, dirt, and noise at work. Additionally, they are unsafe, face violence and verbal or physical abuse, and are robbed of their money or goods while trading on sidewalks (Pick et al., 2002). Poor street vendors increase the existing problem of waste picking, in addition to their exposure to a high level of air pollutants in the outdoor environment (Amegah & Jaakkola, 2016).

Street vending is a result of a low level of economic development. As the economy develops, the phenomenon is gradually disappearing (Williams & Gurtoo, 2012) due to modernization theory. After the global financial crisis in 1997/1998, street vendors were adversely impacted in developing countries (Brata, 2010). The sharp decline in the price of crude oil has negatively impacted the economic growth rate in Iraq in the last few years. A good part of government expenditure has gone to military forces for fighting ISIS. Martinez and Rivera-Acevedo (2018) find that street vendors in Cali, Colombia, cannot escape poverty since they do not have access to formal banking. As a result, they depend on payday loans with high interest rates, which absorb a large portion of their income. Therefore, we hypothesize:

H1. Poverty positively impacts street vending.

2.2. Lack of education

Illiterate or even semi-illiterate people have to work as street vendors since it is difficult for them to get a job in the formal sector (Husain et al., 2015). There are always some people who cannot enter the formal economy because of a lack of qualifications. Then, street vending is the only option for securing the livelihoods of such people (Williams & Gurtoo, 2012). The majority of street vendors do not have a university degree, even though some of them have secondary certificates or primary education (Pick et al., 2002). An improvement in street vendors' education participates in an increase in their earnings (Smith & Metzger, 1998).

Iraq has been involved in sequential wars since 1980. The toughest one was in 2003, which led to the collapse of all infrastructures and the whole state, and then Iraqis were involved in a civil war and fighting terrorism. The educational system is suffering from crowded classrooms and the facilities are used three shifts per day. The government tries to finance staff salaries only. The financial resources available to public schools are always rare. This hardship leads, first, to a high rate of school dropouts and, second, to strongly hampering the effectiveness of

basic and university education. Schools and universities produce graduates without practical, technical, and entrepreneurial skills. Teenagers and young children who drop out of school go onto the streets to trade. Fresh graduates cannot find jobs, for instance in international oil companies, because of a lack of adequate skills. A lack of education leads to the pervasiveness of street vending. Poverty resulting from wars leads to school dropouts and a poor educational system. We notice university graduates working as taxi drivers and street vendors in Iraq, mainly because of high unemployment. In Yemen, the poverty level is very high and families send their children to work in the informal economy to earn income and to survive. There is a challenge there, since a huge proportion of children are out of school. The female participation rate is extremely low in primary education. Poverty causes street vending since children lose the opportunity to go to school (Dyer, 2007).

2.3. Immigration

Political instability in an area pushes migrants to work as street vendors in other areas which enjoy a relatively higher degree of stability (Lapah & Tengeh, 2013). Baghdad has recently attracted migrants from northern cities of Iraq. The easiest way for them to live is to occupy sidewalks and run their micro-businesses. The inequality of opportunities between cities pushes migrant street vendors from low-level to upper-level cities, for instance from southern cities of Iraq to Baghdad, and from rural areas to urban areas, as in the 1970s because of the oil boom.

We can look at street vending from an international point of view. For instance, the political stability in South Africa attracts migrants from different African countries to work as street vendors. The number of migrant street vendors there approximately doubled during 1993–2002 and then tripled by 2007 (Lapah & Tengeh, 2013).

Migrant street vendors become successful entrepreneurs by utilizing the streets and transforming them into visual public markets, in Los Angeles, USA, for instance (Muñoz, 2012). On the other hand, women who emigrate from Latin America to Los Angeles and sell food on the streets are poor, without legal documents to stay in the country, and accompanied by their children. They face harassment from city officials and police. They do not have permits, which are highly unaffordable, and the process is bureaucratic (Bhimji, 2010). Immigration leads to the pervasiveness of street vending.

Poverty significantly affects educational attainment. In developing countries and poor areas, low income and wealth lead to narrowing of the ability to get credit from financial systems and make financing educational investment difficult. Poorly educated parents, especially mothers, value education less and do not provide assistance to children with homework, for instance. A lack of financial resources of local governments leads to lower-quality schools. Poor parents prefer short-run returns from children rather than long-run returns by investing in education. In a household and school survey of poor counties in six Chinese provinces, school dropouts encompass 13 % of the sample; 49 % of those do not reach junior secondary school, 24 % leave education during junior secondary school, and the remaining 27 % withdraw after completing junior secondary school, mainly because they cannot pass senior secondary entrance exams. Male dropouts complete 6.5 years while female dropouts complete 5.3 years. The dropout rate for girls is higher than for boys. Students start dropping out roughly at the age of 12. At the age of 16, the dropout rate is much higher. Parents admit that they are not willing to pay high fees, especially for girls (Brown & Park, 2002).

Poorly educated people experience a low level of skills. They could not get employment opportunities in their poor and unstable cities. Thus, they have a motive to illegally migrate to richer areas internally or internationally, seeking better compensation. Urban education in large cities faces serious problems because of poorly educated immigrants from rural areas around the globe (Gordon, 2003). Mexican

immigrants to the USA are mostly male, of working age, and poorly educated (Henderson, 2011). According to the data available from the Chinese household (Hukou) system, college-educated people from urban areas have a high level of skills and emigrate through formal channels, while migrants with lower educational attainment are from rural areas, move dependent on their own resources, and seek the informal sector (Chan, Liu, & Yang, 1999). Poverty results in low educational attainment. Poorly educated people have an incentive to emigrate to richer areas and have to work in the informal sector as street vendors, since they do not have adequate qualifications to get formal jobs. Hence, the following hypothesis is proposed:

H2. A lack of education and immigration mediate the effect of poverty on street vending.

2.4. Unemployment

In developing and less-developed countries, the unemployment rate is too high since the ratio of investment to gross domestic product is low, the duration of unemployment is long since the economy is rigid and technological progress is extremely poor, and there is no system for unemployment compensation because of poor public revenues. Unemployed people have to survive through working in the informal sector, especially as street vendors, even though their work features low productivity. The informal sector is a major source of employment in less-developed economies (Pick et al., 2002). An excess supply of labor or high unemployment pushes people to work as street vendors (Husain et al., 2015). Absence of vacancies in rural areas leads people to migrate and work in urban street vending (Truong, 2018). The pervasiveness of street vending is a result of unemployment in developing countries via different types of motivation, such as the low quality of waged jobs, the difficulties of maintaining formal businesses, the low wages of urban jobs, and their desire to achieve flexibility (Huang et al., 2018).

Protests were held with strong complaints by many people in July 2018 in southern Iraqi cities and Baghdad. The protesters clamored against high unemployment, especially among the youth and fresh graduates, administrative and political corruption, and poor infrastructure, especially in the electricity and water supply. When the financial crisis damaged the Thai economy in 1997, the laid-off workers in Bangkok decided to use their business and entrepreneurial skills, gained from the formal sector, to operate their own businesses by working as street vendors. Their businesses are more complex than traditional street vending (Maneepong & Walsh, 2013). Poverty or a low level of development in a country leads to high unemployment because of poor financial resources or a low rate of investment. Unemployment itself leads to an increase in street vending. The lack of education results in unemployment, especially among young children and youths.

Less-educated workers cannot easily find jobs in the formal sector. Then, they work in the informal sector mainly as street vendors, and that reduces the incentives to undertake higher education. If the government imposes policies to evict street vendors, demand for jobs will be increased in the formal sector and then the actual unemployment rate will increase (Kolm & Larsen, 2016). In the era of globalization which is accompanied by rapid progress in technology, this has led to massive changes in the marketplace. If universities graduate students with low quality and skills, employers cannot absorb graduates easily. Weak educational systems participate then in unemployment among graduates (Zulkifli, Omar, & Rajoo, 2016).

Poverty leads to a lack of education, which makes it difficult for poorly educated people to get formal jobs. Persistent unemployment pushes the unemployed to work as street vendors for survival. Therefore, it can be hypothesized that:

H3. A lack of education and unemployment mediate the effect of poverty on street vending.

Poverty can be considered as a push-factor for immigration from poor or rural areas to big or capital cities, and from developing countries to developed ones. Although, immigrants try to reduce their poverty by shifting to large cities, it is found that poverty is more acute among immigrants than among citizens (Muñoz de Bustillo & Antón, 2011). The poverty gap between immigrants and citizens continue even after adjustment for living arrangements done by governments (Chan & Chou, 2016). Poor immigrants, who move to large cities, still face poverty. The governments in receiving countries or cities should support immigrants to tackle the poverty risk (Chan, Gu, & Breitung, 2000). Additionally, skilled workers also emigrate from developing countries to developed ones (Oberman, 2015).

People who live in troubled conditions in certain cities have to migrate to other safe cities or countries, such as when people from northern Iraq emigrate to Kurdistan, other parts of Iraq, or Europe. Those people are generally poor, from rural areas, and without adequate qualifications. They will mostly be unemployed and do not have formal documents to get access to the labor market. Illegal immigration increases the unemployment rate in the host countries and the government spends money to enforce immigration restrictions (Djajić, 1987). Selective or legal immigration such as in Australia may not be associated with unemployment since immigrants have good qualifications and experience relative to market needs (Withers & Pope, 1985). Millions of Africans emigrate to South Africa because of the lack of employment opportunities in African countries (Maharaj, 2002). Those people become unemployed due to a lack of documentation and qualifications.

Poverty leads to immigration. Illegal immigrants who are from rural areas and without adequate skills will find it difficult to get access to the formal sector. Persistent unemployment pushes them to work as street vendors. Therefore, it can be hypothesized that:

H4. Immigration and unemployment mediate the effect of poverty on street vending.

Poverty results in poor education. Poorly educated people migrate from rural and unstable areas for better compensation. Illegal immigrants will find it difficult to get access to the labor market because of documentation and qualifications. They make a rational choice to work as street vendors for survival. Therefore, it can be hypothesized that:

H5. A lack of education, immigration, and unemployment mediate the effect of poverty on street vending.

3. Methodology

3.1. Sampling and data collection

The observed items, shown in Appendix A, were translated into Arabic, since Iraqis almost all speak Arabic and English is not in common use. Then, the questionnaire was inserted into Google Forms as an electronic survey. We discussed the survey with our colleagues at Middle Technical University, Baghdad, and analyzed an initial sample of 25 responses. We realized that the city's officials basically tend to ignore street vendors rather than evict them from the streets because of the high pervasiveness of street vending and the high unemployment rate. It seemed in this early stage that some street vendors gain secondary school certificates, diplomas, or even bachelor's degrees because of high unemployment among youths and graduates. Our colleagues, who live in Baghdad, confirmed that street vendors are almost Iraqis. While migrants from Syria, which has suffered severe conflicts, are a tiny minority since Iraq itself has suffered from terrorism and political instability. The discussion with our colleagues led us to modify the measurable items as presented in Appendix A.

The questionnaire was mainly promoted online, and respondents were invited to take the survey through hyperlinks that were sent to

their email addresses and via social media, especially Facebook and WhatsApp. Prior research was interested in collecting data directly from street vendors in order to understand their characteristics or features. This kind of work was important, since it significantly helped in understanding the true conditions experienced by peddlers (Lapah & Tengeh, 2013; Reid et al., 2010; Wibisono & Catrayasa, 2018). There is still a strong need to collect data from the general public in cities that have pervasive street vendors. The analysis of such data is extremely useful to capture public opinion, which can formulate a proper revision of public policies about how to deal with this problematic issue (Chai et al., 2011). In order to reach the general public in Baghdad, we started by contacting university students at Middle Technical University, and then invited administrators and academic faculty at the university to participate. Most importantly, we encouraged students and staff to invite their relatives and friends, some of whom were digital friends, in the whole city and from different backgrounds, to fill in the e-survey.

We aimed to reach 600 persons in Baghdad from different educational backgrounds. With our limited time and resources, we managed to collect only 463 complete responses with a response rate of 77 %. The electronic survey did not technically allow the submission of incomplete responses. Of the responses received, 8 %, which is equivalent to 38 responses, had a lack of seriousness. We had 5 constructs with 5 observed variables for each construct; that is, we had 25 questions. Those 38 responses answered the scale from 1: strongly disagree to 7: strongly agree with similar answers for all questions. The sample standard deviation for each person or response was close to zero. These responses were excluded from the sample. A total of 425 responses was the size of the final sample, in which all responses were complete and thus usable. The data collected is fairly representative of public attitudes in Baghdad, which experiences pervasive street vending. The process of collecting the data took three months, from the beginning of September to the end of November 2018. The supplementary data to this paper can be found online at Al-Jundi (2019).

Even we started with the university community, our students helped us to reach people from different backgrounds. Thus, the sample of 425 responses is quite diverse, as shown in Appendix B. There were more male participants than female, since males are more active than females in the digital world due to cultural constraints. Of the sample, 41 % had secondary school certificates, most of whom were university students, 25 % held less than a secondary school certificate because of the high rate of dropout from schools, 20 % held Bachelor's degree and worked in private and public sectors, while the 14 % of postgraduates were mainly faculty members of surrounding universities. For monthly household income, the majority (41 %) of households earned less than \$400 per month, and 37 % of the sample earned less than \$1000. The upper classes were limited to 12 % (\$1000–1499) and 10 % (more than \$1500). This is quite reflective of the actual distribution of income in Iraq. Younger adults were more active in the digital world and more concerned about public issues than older people were. We can judge that the responses came from different social classes and the sample was quite representative of attitudes of the general public in Baghdad.

3.2. Measurement variables

To test the proposed model (Fig. 1) using the PLS-SEM approach, we established measurable indicator variables for all constructs based on previous research. All observed items were considered as reflective indicators. Each construct had five items. All items were measured using a seven-point Likert-type scale, as shown in Appendix A. The format of the scale was 1: strongly disagree, 2: disagree, 3: somewhat disagree, 4: neither agree nor disagree, 5: somewhat agree, 6: agree, and 7: strongly agree.

Prior research studied the phenomenon of street vending and its causes relying on aggregate/national data. Other researchers collected data from street vendors themselves. The current paper is unique in two aspects. First, it tries to view the attitudes of the general public in cities

experiencing a high pervasiveness of street vending. Secondly, it builds new scales to measure public opinion. The literature helped to pick concepts to frame the measurement items. For the street vending construct, previous research mentioned the pervasiveness of street vending, conflict between street vendors and local authorities, and the fact that they work without licenses and compete with each other in crowded markets, and it looks at their benefits regardless of traffic and pedestrians (Agadjanian, 2002; Ilahiane & Sherry, 2008; Nani, 2016; Palacios, 2016; Recio & Gomez, 2013).

Poverty can be tracked by some indicators such as the large size of poor families, decline of agricultural production, street vendors not able to expand their business and suffering health hazards, and young people earning money on the streets (Estrada & Hondagneu-Sotelo, 2011; Husain et al., 2015; Lyons, 2013; Pick et al., 2002; Truong, 2018). A lack of education can be measured by variables such as street vendors being illiterate and not having adequate qualifications or a university degree. The school dropout rate is high and the education system does not properly qualify people to work in competitive markets (Dyer, 2007; Husain et al., 2015; Pick et al., 2002; Williams & Gurtoo, 2012).

The general public can see immigration when they notice that some street vendors come from poor or rural areas and cities experience conflicts. Migrant women and children work on the streets. Some migrant street vendors have succeeded in running a successful business (Bhimji, 2010; Lapah & Tengeh, 2013; Muñoz, 2012). The construct of unemployment can be reported by the public if they recognize high unemployment rates among youths and fresh graduates. In addition, there is no financial compensation to the unemployed and the duration of unemployment is long in rigid economies. The rural sector does not offer jobs and urban street vending becomes a source of employment (Husain et al., 2015; Pick et al., 2002; Truong, 2018).

3.3. Common method variance

This study examines the survey data for common method bias. As shown in Table 2, the bivariate correlations among five latent variables do not show extremely high correlations ($r > 0.90$), suggesting no evidence of common method bias (Lowry & Gaskin, 2014). In addition, a full collinearity approach based on the average variance inflation factor (VIF) is conducted to assess both vertical and lateral collinearity among all five latent variables (Kock, 2015). Since the VIF values of five latent variables are < 3.3 , as shown in Table 2, these results suggest that the survey data does not suffer from common methods of bias.

3.4. Analytical procedure

This study employed two analytical procedures to analyze the data. First, PLS-SEM (Hair, Hult, Ringle, & Sarstedt, 2017) is employed for the assessment of measurement and structural models. PLS-SEM has recently received wide recognition among research scholars (Hair, Sarstedt, Ringle, & Gudergan, 2017; Latan & Noonan, 2017; Latan, 2018) and has been widely employed, including in cleaner production studies (Jabbour, Jugend, de Sousa Jabbour, Gunasekaran, & Latan, 2015; Latan, Jabbour, de Sousa Jabbour, Wamba, & Shahbaz, 2018). The use of PLS-SEM in this study is more appropriate because PLS-SEM is an acceptable, reliable, and valid statistical tool which supports complex model structures, prediction-oriented research, and a large number of composite indicators, yet it requires a relatively small sample size, exploratory objectives of the research, theory development, and not normally distributed data (Latan, 2018). This study used SmartPLS version 3 software (Ringle, Wende, & Becker, 2015) for the PLS-SEM analysis, with the basic settings such as a factor-weighting scheme with a maximum of 300 iterations, no sign change option, and a stop criterion of 10^{-7} ($= 1.0E-07$) in the PLS-SEM algorithm settings. Secondly, in addition to PLS-SEM, a freely available computational tool for SPSS called the PROCESS macro (Hayes, 2017) is employed to

evaluate the sequential mediations analysis.

4. Results

The analysis of the research model (Fig. 1) required the assessment of a measurement model (outer model) and a structural model (inner model). Five proposed hypotheses are tested according to the research model in this research.

4.1. Measurement model assessment

This study follows the updated guidelines in Hair, Hult et al. (2017) to assess the measurement model. It applies the following threshold values during the measurement model assessment:

- Individual item reliability: Standardized factor loading of ≥ 0.707 (Hair, Hult et al., 2017; Latan, 2018) and t -test scores ≥ 1.96 ($p < 0.05$, two-tailed test) are used for the statistical significance of factor loadings (Roldán & Sánchez-Franco, 2012).
- Construct reliability: Cronbach's alpha, Dijkstra-Henseler's rho (ρ_A), and composite reliability (CR) ≥ 0.700 (Hair, Hult et al., 2017; Latan, 2018).
- Convergent validity: Average variance extracted (AVE) ≥ 0.500 (Hair, Hult et al., 2017; Latan, 2018).
- Discriminant validity: Square root of AVE $\geq$ correlation among latent variables (Latan, 2018), and HTMT index $< \text{HTMT}0.85$ or $\text{HTMT}0.90$ (Henseler, Ringle, & Sarstedt, 2015).

Tables 1 and 2 report that the measurement model fulfills all the minimum requirements. A factor analysis is performed to assess the validity and reliability of all five latent variables in the research model (Fig. 1). All individual item loadings show a high level of statistical quality, from 0.500 to 0.896 and significant at the 0.001 level, suggesting that the measurement model holds acceptable individual item reliability. Table 1 shows that all factor loadings were greater than 0.707, except for SV1, PO3, LE2, LE3, and IM5, which have factor loadings between 0.500 and 0.588; however, these items may be acceptable. According to Hair, Ringle, and Sarstedt (2011) and Hulland (1999), a factor loading between 0.400 and 0.707 may be considered for elimination if the deletion leads to increased CR and AVE, suggested to be above the threshold of 0.700 and 0.500, respectively. In Table 1, for all five latent variables, the indices of Cronbach's alpha range from 0.737 to 0.821, the indices of Dijkstra-Henseler's rho (ρ_A) range from 0.770 to 0.848, and the indices of CR range from 0.823 to 0.876, suggesting that the measurement model holds acceptable construct reliability. The values of AVE of all five latent variables ranging from 0.500 to 0.599 are above the minimum threshold, as shown in Table 1, therefore the measurement model's convergent validity is acceptable. Finally, the discriminant validity is confirmed by heterotrait-monotrait (HTMT) ratio analysis. The HTMT ratio analysis is considered to be a superior measure which overcomes the bias of the other techniques (Latan, 2018). The results of HTMT values are statistically significantly smaller than the recommended threshold, suggesting that the measurement model ensured discriminant validity.

4.2. Structural model assessment

The assessment of the structural model draws on the updated guidelines in Hair, Hult et al. (2017). This study applies the following threshold values during the structural model assessment:

- Collinearity in structural model: VIF values < 3.3 or < 5 (Hair, Hult et al., 2017; Latan, 2018).
- Predictive relevance Q^2 through blindfolding: Q^2 value > 0 (Hair, Hult et al., 2017).
- Coefficient of determination (R^2 value); R^2 value ≥ 0.25 (weak);

Table 1
Measurement model results.

Constructs	Code	SLF	SE	t-value ^{a,b}	VIF	α	ρ_A^c	CR	AVE ^d
Street vending	SV1	0.500	0.061	8.154	1.220	0.737	0.766	0.823	0.500
	SV2	0.637	0.044	14.325	1.293				
	SV3	0.785	0.030	26.245	1.673				
	SV4	0.773	0.032	24.340	1.643				
	SV5	0.756	0.031	24.093	1.431				
Poverty	PO1	0.709	0.038	18.686	1.434	0.750	0.770	0.832	0.501
	PO2	0.740	0.041	17.825	1.506				
	PO3	0.558	0.051	11.021	1.209				
	PO4	0.733	0.037	19.969	1.468				
	PO5	0.780	0.030	25.627	1.540				
Lack of education	LE1	0.896	0.028	31.471	1.988	0.796	0.848	0.842	0.525
	LE2	0.562	0.063	8.882	2.326				
	LE3	0.588	0.065	9.058	2.158				
	LE4	0.830	0.022	37.389	1.293				
	LE5	0.687	0.036	18.830	1.284				
Immigration	IM1	0.761	0.043	17.544	1.756	0.801	0.809	0.864	0.563
	IM2	0.800	0.030	27.026	2.040				
	IM3	0.797	0.031	25.416	1.801				
	IM4	0.794	0.028	28.799	1.657				
	IM5	0.573	0.054	10.549	1.174				
Unemployment	UN1	0.814	0.032	25.581	0.814	0.821	0.834	0.876	0.588
	UN2	0.802	0.030	26.965	0.802				
	UN3	0.858	0.020	42.622	0.858				
	UN4	0.717	0.037	19.224	0.717				
	UN5	0.619	0.054	11.520	0.619				

Note: SLF = Standardized factor loading; SE = Standard error; VIF = Variance inflation factor; α = Cronbach's alpha; CR = Composite reliability; AVE = Average variance extracted.

^a Test statistics are obtained by 5000 bootstrap runs.

^b Absolute *t*-values > 1.96 are two-tailed significant at 5%.

^c Dijkstra-Henseler's rho.

^d Percentage of variance of item explained by the latent variable.

≥ 0.50 (moderate); ≥ 0.75 (substantial).

- Path coefficients: bootstrapping (5000 bootstrap samples; 343 bootstrap cases; no sign changes), *t*-values, standard errors, *p*-values, 95 % bias-corrected confidence intervals, $*t(0.05, 4999) = 1.645$; $**t(0.01, 4999) = 2.327$; $***t(0.001, 4999) = 3.092$; $*p < 0.05$; $**p < 0.01$; $***p < 0.001$; one-tailed test (Hair, Hult et al., 2017; Latan, 2018; Roldán & Sánchez-Franco, 2012).

First, collinearity for all possible set of predictors in the structural model is assessed through inspecting VIF values. Table 3 shows that the collinearity among the predictor constructs is not an issue in the structural model, as all VIF values are below the minimal threshold of VIF < 3.3 for all the set of predictors. Second, using the blindfolding technique for assessing predictive relevance, Table 3 shows the values of Q^2 for all the endogenous latent variables: $Q^2_{(\text{Street vending})} = 0.153$, $Q^2_{(\text{Lack of education})} = 0.125$, $Q^2_{(\text{Immigration})} = 0.103$, and $Q^2_{(\text{Unemployment})} = 0.234$. Since all the values of Q^2 are considerably higher than zero, this

Table 3

Determination coefficients (R^2) and predictive relevance (Q^2) of endogenous (omission distance = 7).

Endogenous variable	R^2 values	Threshold	Q^2 values	Threshold
Street vending	0.348	≥ 0.33 (moderate)	0.153	> 0
Lack of education	0.284	≥ 0.67 (substantial)	0.125	
Immigration	0.206	≥ 0.33 (moderate)	0.103	
Unemployment	0.437		0.234	

suggests the conceptual model's predictive relevance in terms of out-of-sample prediction (Hair, Hult et al., 2017). Third, the results for predictive relevance Q^2 are further supported by values of the coefficient of determination (value of R^2). Table 3 shows the values of R^2 for all the endogenous latent variables: $R^2_{(\text{Street vending})} = 0.348$, $R^2_{(\text{Lack of education})} = 0.284$, $R^2_{(\text{Immigration})} = 0.206$, and $R^2_{(\text{Unemployment})} = 0.437$. All the values of R^2 are considerably higher and acceptable in behavioral

Table 2

Means, standard deviations, correlations, and discriminant validity results (HTMT).

Constructs	Mean	SD	VIF ^a	1	2	3	4	5
1. Street vending	5.584	1.325	1.380		0.690	0.380	0.270	0.624
2. Poverty	5.721	1.118	1.894	0.552		0.596	0.455	0.781
3. Lack of education	4.975	1.256	1.565	0.359	0.533		0.470	0.457
4. Immigration	5.160	1.229	1.289	0.220	0.366	0.423		0.460
5. Unemployment	5.921	1.146	1.776	0.507	0.630	0.474	0.375	

Note: HTMT = heterotrait-monotrait; SD = standard deviation; VIF = Variance inflation factor – collinearity test of structural model. Below the diagonal elements are the correlations between the construct values; above the diagonal elements are the HTMT values.

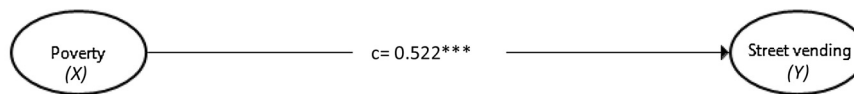
^a Full collinearity test of measurement model.

Table 4
Construct effects on endogenous variables.

Structural path	Path coefficient	Significant difference ($p < 0.05$)?	95 % BCa confidence interval
Poverty $\rightarrow$ Street vending (c')	0.373***	Yes	[0.266, 0.479]
Poverty $\rightarrow$ Lack of education (a_1)	0.533***	Yes	[0.452, 0.614]
Poverty $\rightarrow$ Immigration (a_2)	0.197***	Yes	[0.096, 0.298]
Poverty $\rightarrow$ Unemployment (a_3)	0.503***	Yes	[0.416, 0.589]
Lack of education $\rightarrow$ Street vending (b_1)	0.052 ^{ns}	No	[-0.045, 0.149]
Immigration $\rightarrow$ Street vending (b_2)	-0.036 ^{ns}	No	[-0.124, 0.051]
Unemployment $\rightarrow$ Street vending (b_3)	0.261***	Yes	[0.158, 0.364]
Lack of education $\rightarrow$ Immigration (d_{21})	0.318***	Yes	[0.217, 0.418]
Lack of education $\rightarrow$ Unemployment (d_{31})	0.153***	Yes	[0.064, 0.241]
Immigration $\rightarrow$ Unemployment (d_{32})	0.127***	Yes	[0.046, 0.207]
Assessment of goodness-of-fit model			
Standardized root mean square residual (SRMR) composite model	0.089		

Note: ns = Not significant; $t(0.05, 4999) = 1.645$; $t(0.01, 4999) = 2.327$; $t(0.001, 4999) = 3.092$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; one-tailed test. BCa = Bias-corrected confidence interval. Bootstrapping based on $n = 5000$ subsamples.

A) Model with total effect



B) Model with multiple-path mediated effect

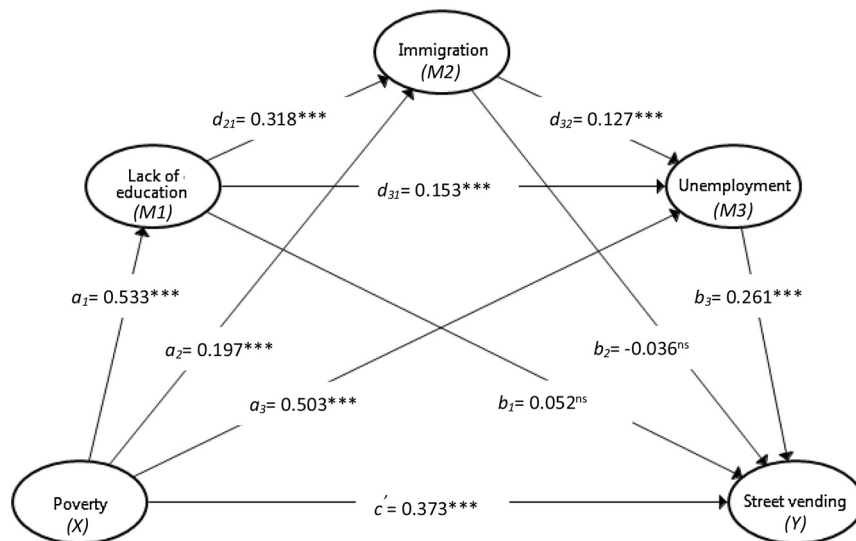


Fig. 2. Structural model results.

and social science research, suggesting the conceptual model's predictive relevance in terms of out-of-sample prediction (Hair, Hult et al., 2017). Finally, an investigation of the direct effect of exogenous latent variables represented by path coefficients on endogenous latent variables and their levels of significance suggests that all the direct effects are statistically significant, with the exception of b_1 (lack of education on street vending) and b_2 (immigration on street vending), as shown in Table 4. In particular, Table 4 shows that with a 95 % bias-corrected confidence interval, the direct effect of poverty on street vending (H1: c' , $\beta = 0.373$, $p < 0.001$) is positive and statistically significant, as shown in Fig. 2(B). Hence, H1 is supported.

4.3. Mediation model assessment

This study employs Model 6 with three serial mediations of the PROCESS macro in SPSS (Hayes, 2017) with 5000 bootstrap resamples to confirm the results of the mediation model assessment obtained in SmartPLS and generate 95 % bias-corrected confidence intervals (BCa) for the mediators (see Fig. 1). Fig. 1 shows a serial multiple mediator model which includes poverty as the exogenous latent variable (X), three mediators – lack of education (M1), immigration (M2), and unemployment (M3), and street vending as the outcome latent variable (Y). The research model aims to capture the direct effect of X on Y as well as multiple indirect effects, which are reflected by the following paths (Hayes, 2017). The first serial mediation hypothesis H2 is represented by the first path (i.e., $a_1d_{21}b_2$), H3 is represented by the

second path (i.e., $a_1d_{31}b_3$), H4 is represented by the third path (i.e., $a_2d_{32}b_3$), while the final mediator hypothesis H5 (applying to counterfeit brands) is captured by the fourth path (i.e., $a_1d_{21}d_{32}b_3$).

$$H2: X \rightarrow M1 \rightarrow M2 \rightarrow Y = a_1d_{21}b_2$$

$$H3: X \rightarrow M1 \rightarrow M3 \rightarrow Y = a_1d_{31}b_3$$

$$H4: X \rightarrow M2 \rightarrow M3 \rightarrow Y = a_2d_{32}b_3$$

$$H5: X \rightarrow M1 \rightarrow M2 \rightarrow M3 \rightarrow Y = a_1d_{21}d_{32}b_3$$

With this aim in mind, the latent variable scores obtained from the SmartPLS version 3 software analysis are input for further analyses (Jeong, Ali, Zacca, & Park, 2019; Khan, Ali, Olya, Zulqarnain, & Khan, 2018). In the line with Hayes (2017), the total effect of exogenous latent variable (poverty) on exogenous latent variable (street vending) is the sum of the direct (H1: c') and indirect effects (i.e., $a_1b_1 + a_2b_2 + a_3b_3 + a_1d_{21}b_2 + a_1d_{31}b_3 + a_2d_{32}b_3 + a_1d_{21}d_{32}b_3$). The product of two or more than two direct paths represents the indirect effect (mediating effect) in the mediational chain. The total effect of poverty on street vending is positively related to street vending ($c = 0.552, p < 0.001$), as shown in Fig. 2(A) and Table 5(A). However, when lack of education, immigration, and unemployment as the mediators are added in the model (Fig. 2(B)), poverty decreases its effect, but still maintains a significant direct effect on street vending (H1: $c' = 0.373; p < 0.001$), as shown in Table 4. Hence, H1 is supported.

The results also show a partial mediation between poverty and street vending, because the indirect effects of H3, H4, and H5 are significant. The results of mediation analyses in Table 5(C and D) report that all indirect effects of poverty on street vending via sequential mediation paths are accepted, with the exception of H2($a_1d_{21}b_2$). The indirect effect of poverty on street vending via lack of education and immigration is not significant (H2: $a_1d_{21}b_2 = -0.006; p > 0.05$), as shown in Table 5(C). Therefore, H2 ($a_1d_{21}b_2$) is not supported. Consistent with H3 ($a_1d_{31}b_3$), poverty is positively associated with lack of education ($\beta = 0.533, p < 0.001$), and lack of education is positively associated with unemployment ($\beta = 0.153, p < 0.001$), which relates to a high level of street vending ($\beta = 0.261, p < 0.001$), as shown in Table 5(C). Hence, H3 ($a_1d_{31}b_3$) is supported and suggests partial mediation. Similarly, consistent with H4 ($a_2d_{32}b_3$), poverty is positively associated with immigration ($\beta = 0.197, p < 0.001$), and immigration is positively associated with unemployment ($\beta = 0.127, p < 0.001$), which relates to a high level of street vending ($\beta = 0.261, p < 0.001$),

as shown in Table 5(C). Hence, H4 ($a_2d_{32}b_3$) is supported and suggests partial mediation. Finally, consistent with H5 ($a_1d_{21}d_{32}b_3$), poverty is positively associated with lack of education ($\beta = 0.533, p < 0.001$), lack of education is positively associated with immigration ($\beta = 0.318, p < 0.001$), and immigration is positively associated with unemployment ($\beta = 0.217, p < 0.001$), which relates to a high level of street vending ($\beta = 0.261, p < 0.001$), as shown in Table 5(D). Therefore, H5 ($a_1d_{21}d_{32}b_3$) is supported.

4.4. Robustness checks

We perform several robustness checks to keep our main results unbiased. Robustness checks of results has become a mandatory requirement in reporting SEM or PLS-SEM analysis (Appelbaum et al., 2018; Latan, 2018). First, endogeneity tests are considered to ensure that there is no effect of the omitted variables, inverse causality, or other potential errors. We run the Heckman test to assess this bias. The two-step procedure is implemented with the first step, examining the relationship between variables without controlling for endogeneity bias, and in the second step we control for the effects of endogeneity bias by including the third variable in the equation. Our results indicate that no endogeneity bias occurred.

Second, we examine an unobserved heterogeneity bias, which has been highlighted recently as a threat to the PLS results. We use the finite-mixture PLS (FIMIX-PLS) method to test this bias. We follow the multimethod procedure provided by Sarstedt, Ringle, and Hair (2017) with three segments extracted. Evaluation of FIMIX-PLS results is determined based on Akaike's information criterion modified with factor 3 (AIC₃) and consistent Akaike's information criterion (CAIC), where when goodness of fit (GoF) consistently shows the same number of segments, the results tend to be valid and show the correct number of segments. In our analysis, AIC₃ and CAIC are both in the $k = 1$ segment, which is an early indication that unobserved heterogeneity is not a threat to our results. We also obtained similar results for AIC modified by factor 4 (AIC₄) and Bayesian information criteria (BIC), except minimum description length by factor 5 (MDL₅), which generally worked better to determine the number of segments.

5. Discussion and implications for theory and practice

The current paper contributes to the existing literature by simultaneously testing the effects of poverty, a lack of education, immigration,

Table 5
Summary of mediating effect tests.

Structural path	Path coefficient	t-value	Significant difference (p < 0.05)?	
<i>(A) Total effect model</i>				
Poverty → Street vending (c)	0.552***	13.601	Yes	
<i>(B) Direct effect model (H1)</i>				
H1 = (c')Poverty → Street vending	0.373***	6.876	Yes	
Indirect effects of poverty on street vending	Path coefficient	Significant difference (p < 0.05)?	95 % BCa Confidence interval	Conclusion
<i>(C) Indirect effect model (Double mediation model) (H2, H3, and H4)</i>				
H2 = $a_1d_{21}b_2$ (via Lack of education + Immigration)	- 0.006 ^{ns}	Yes	[- 0.024, 0.010]	Not accepted
H3 = $a_1d_{31}b_3$ (via Lack of education + Unemployment)	0.021*	Yes	[0.004, 0.051]	Accepted
H4 = $a_2ad_{32}b_3$ (via Immigration + Unemployment)	0.007*	Yes	[0.001, 0.019]	Accepted
<i>(D) Indirect effect model (Triple mediation model) (H5)</i>				
H5 = $a_1d_{21}d_{32}b_3$ (via Lack of education + Immigration + Unemployment)	0.006*	Yes	[0.001, 0.016]	Accepted

H1. Poverty $\rightarrow$ Street vending. (c').

H2 Poverty $\rightarrow$ Lack of education $\rightarrow$ Immigration $\rightarrow$ Street vending ($a_1d_{21}b_2$).

H3. Poverty $\rightarrow$ Lack of education $\rightarrow$ Unemployment $\rightarrow$ Street vending ($a_1d_{31}b_3$).

H4. Poverty $\rightarrow$ Immigration $\rightarrow$ Unemployment $\rightarrow$ Street vending ($a_2d_{32}b_3$).

H5. Poverty $\rightarrow$ Lack of education $\rightarrow$ Immigration $\rightarrow$ Unemployment $\rightarrow$ Street vending ($a_1d_{21}d_{32}b_3$).

Note: ns = Not significant; $t(0.05, 4999) = 1.645$; $t(0.01, 4999) = 2.327$; $t(0.001, 4999) = 3.092$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; one-tailed test. BCa = Bias corrected confidence interval. Bootstrapping based on $n = 5000$ subsamples.

and unemployment on street vending. Additionally, it furnishes empirical evidence to support multivariate influences of these four constructs on street vending, and the interplay between them. We tested a sample of 425 responses that reflects the perspective of the public in Baghdad, Iraq. PLS-SEM was employed to examine the overall structure of the research model. Iraq experiences a high pervasiveness of street vending and the phenomenon creates conflicts between street vendors and local authorities.

The current study enriches the structuralism theory by looking into the relationship between poverty and street vending via multiple mediation of a lack of education, immigration, and unemployment. Previous research has explored the perception of street vendors. However, our study analyzes the public's perspective. The main finding of the study is that poverty positively impacts street vending (H1). This is consistent with the literature (Brata, 2010; Huang et al., 2018; Saha, 2011; Truong, 2018).

In addition to this direct effect, poverty influences street vending via multiple mediations: a lack of education and unemployment mediate the effect of poverty on street vending (H3); immigration and unemployment mediate the effect of poverty on street vending (H4); and a lack of education, immigration, and unemployment mediate the effect of poverty on street vending (H5). As discussed in Section 4.3, H3, H4, and H5 are statistically supported. Briefly, the significant differences are less than 0.05 and the path coefficient lies between 95 % confidence interval (Table 5 C & D). The current study contributes to the pioneering efforts to explore the mediation roles in literatures of informal sector that takes an important magnitude in developing countries. To support the multiple mediations, we also find that poverty is individually associated with a lack of education, immigration, and unemployment. Unemployment is associated with street vending (Huang et al., 2018; Husain et al., 2015; Maneepong & Walsh, 2013). A lack of education is associated with both immigration and unemployment. The last association found is between immigration and unemployment. We can track all types of associations in the literature, as stated in Section 2.

H2 is not supported. A lack of education and immigration do not mediate the effect of poverty on street vending. Additionally, we find that a lack of education and immigration are not associated with street vending. The latter results are not consistent with the literature. Prior research states that a lack of education leads to street vending (Husain et al., 2015; Pick et al., 2002; Williams & Gurtoo, 2012). Similarly, immigration results in street vending (Bhimji, 2010; Lapah & Tengeh, 2013; Muñoz, 2012). This hypothesis must be reinvestigated in other countries. The situation comes mainly from the circumstances in Iraq. Since the unemployment rate is extremely high and the streets are crowded with unlicensed vendors, we notice that some fresh graduates work on the streets for survival and the majority of vendors are from Baghdad itself.

The findings of the research are beneficial to public authorities for revisiting their policies regarding street vending. It is not enough to evict street vendors from the streets, ignoring their livelihoods. Street vending contributes to increasing employment and decreasing poverty and is a complicated problem. A lack of education, immigration, and unemployment mediate the effect of poverty on street vending. Due to modernization theory, street vending is gradually disappearing as the economy develops (Williams & Gurtoo, 2012). We do not expect this phenomenon to be eliminated without addressing objective problems such as poverty and unemployment. Street vendors work in harsh and adverse conditions for survival and earning income (Pick et al., 2002; Saha, 2011).

The government should encourage street vendors to organize themselves (Hummel, 2017). Since the phenomenon of street vending is changing over time, the government should revisit its policies in line with changing circumstances (Nani, 2016). A potential company could gather and organize food street vendors in a formal way for the benefit

of both parties (Guesné & Ménascé, 2014). As part of improving sustainable development, the government should address poverty and street vending to decrease deaths and illnesses from pollution (Amegah & Jaakkola, 2016).

The city regulators should manage public spaces to enhance street vendors' livelihoods (Damayanti, Scott, & Ruhanen, 2018; Gibbings, 2013). They can give incentives to street vendors by transferring them to appropriate places. This approach has positive impacts on traffic flow and the city's image as perceived by citizens (Permana, Aziz, & Siong, 2016). When the authorities express their willingness to support vendors by using flexible and loose policing, street vendors will positively respond, which allows municipalities to reallocate them (Chiu, 2013). The government also should modernize traditional markets, which can absorb street vendors in line with cultural changes (Rachmawati, 2013). The government also has to impose a law to protect street vendors' livelihoods and regulate their vending (Alva, 2014; Bhowmik, 2010). It should review or develop business law in order to cover informality as a reality, since the informal sector includes a large portion of the poor population (Lyons, 2013; Tonda & Kepe, 2016). The public wish the government to humanize the management of unlicensed mobile street vendors (Chai et al., 2011).

The main challenge of the current study is associated with the small sample size. We collected only 425 responses reflecting the attitudes of the general public in Baghdad via a digital network of the university community. It is recommended, therefore, that the sample size should be increased so that the dynamics of the population in general are fully represented, even though the current sample is quite diverse. In addition, we reached participants mainly through social media and emails, so we did not get the opportunity to explain the survey; we cannot be sure, therefore, that participants filled in the questionnaire with an acceptable level of seriousness and understanding, and without any form of bias. The study is also limited in scope because the findings are related to only one country's experiences in a period when there is a high pervasiveness of street vending accompanied with high levels of unemployment, dropouts from school, immigration caused by terrorism and civil war, and most importantly poverty caused by serial wars. Perhaps the proposed model could be tested in another developing country.

Future research should focus on expanding the model by adding constructs such as a lack of microfinance (Lyons, 2013; Malôa, 2013), resistance (Boonjubun, 2017; Hanser et al., 2016), urban culture (Tamlarai & Angayarkanni, 2016; Wibisono & Catrayasa, 2018), and a low-income consumption pattern (Tamlarai & Angayarkanni, 2016; Yatmo, 2009). The current model should be applied in other cities in Iraq and other countries with different levels of street vending. We strongly recommend that researchers examine the perspective of street vendors and compare the results with the perception of the general public. The study introduced and tested the mediating roles of a lack of education, immigration, and unemployment. We suggest examining the moderating roles of income, gender, and participants' educational levels. Finally, the study collected data in a certain period, which is called cross-sectional data. However, we could enrich the analysis by adopting and implementing time series data.

Declaration of Competing Interest

The authors declare that they have no conflict of interest.

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Appendix A. Measurement properties of constructs

Code	Items
<i>Street vending</i> (Agadjanian, 2002; Ilahiane & Sherry, 2008; Nani, 2016; Palacios, 2016; Recio & Gomez, 2013)	
SV1	Street vendors spread through the streets and markets of the city.
SV2	City authorities do not provide any support to street vendors.
SV3	Street vendors seek to improve their income without paying attention to the traffic in the street and the movement of pedestrians on the pavements.
SV4	Street vendors compete with each other in the overcrowded streets and markets.
SV5	Street vendors are unlicensed by the municipality or other governmental offices.
<i>Poverty</i> (Estrada & Hondagneu-Sotelo, 2011; Husain et al., 2015; Lyons, 2013; Pick et al., 2002; Truong, 2018)	
PO1	Most poor families are large.
PO2	Agricultural production has declined over the last decade.
PO3	Street vendors cannot expand their business.
PO4	Teenagers, younger children and girls earn money in the streets.
PO5	Street vendors suffer dirt, noise, abuse and health hazards.
<i>Lack of education</i> (Dyer, 2007; Husain et al., 2015; Pick et al., 2002; Williams & Gurttoo, 2012)	
LE1	Street vendors are almost illiterate or have little education.
LE2	Street vendors rarely have adequate qualifications to apply for a job in the formal sector.
LE3	Street vendors rarely have a university degree.
LE4	School dropout rates have increased over the last decade.
LE5	Schools and universities do not properly equip people to work in modern companies.
<i>Immigration</i> (Bhimji, 2010; Lapah & Tengeh, 2013; Muñoz, 2012)	
IM1	Some street vendors come from areas that have experienced war or conflicts.
IM2	Some street vendors come from rural areas.
IM3	Some street vendors come from poor areas.
IM4	Women and their children who come from other areas work in the streets.
IM5	Some street vendors, who come from other areas, have succeeded in setting up successful businesses in the streets.
<i>Unemployment</i> (Husain et al., 2015; Pick et al., 2002; Truong, 2018)	
UN1	The unemployment rate among youth and fresh graduates is very high.
UN2	There is no unemployment compensation.
UN3	The duration of unemployment is very long.
UN4	The rural sector does not offer jobs.
UN5	Street vending is a current source of employment.

Appendix B. Demographic characteristics of the sample

Measurement	No.	%
<i>a Gender</i>		
Male	285	67
Female	140	33
<i>b Educational attainment</i>		
less than secondary school certificates	106	25
Secondary school certificates	174	41
Bachelor's degree	85	20
Postgraduates	60	14
<i>c Monthly household income</i>		
less than \$400	174	41
\$400–999	157	37
\$1000–1499	51	12
more than \$1500	43	10
<i>d Age</i>		
less than 25 years old	149	35
25–40 years old	187	44
more than 41 years old	89	21

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