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## No.08: IMPROVING THE PROFITABILITY OF WET MARKET FOOD VENDORS IN CHINA

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## IMPROVING THE PROFITABILITY OF WET MARKET FOOD VENDORS IN CHINA

by Xinxian Qi, Taiyang Zhong, Zhenzhong Si and Xianjin Huang

### Key Points

- The characteristics of individual vendors and their business operations have a more significant impact on business profits than more general socioeconomic factors. Policy interventions need to prioritize the former.
- The profits of wet market vendors vary spatially in Nanjing, China. The average profit level in central urban districts is higher than in peri-urban districts.
- Almost all determinants have more significant impacts on vendor profitability in peri-urban than urban areas. Measures should therefore be taken to improve the profitability of wet market vendors in peri-urban areas.

### Introduction

In China, wet markets play an important role in the urban food environment. Residents of Chinese cities tend to shop for processed and packaged food in supermarkets and for fresh produce, especially vegetables, in wet markets (Zhang and Pan 2013). Traditional marketing channels, particularly wet markets, dominate the retailing of vegetables and meat (Si et al 2018, Zhang and Pan 2013). Besides vegetables and meat, wet markets specialize in fruit, aquatic products (such as live fish and shrimp), and staple foods (such as rice and other grains and flours) (Zhong et al 2018).

In the early 2000s, the Chinese government launched a program known as *nonggaichao* to convert wet markets into supermarkets as part of its urban renewal plans. But the program failed because wet markets carry a variety of fresh foods at lower cost, providing a price advantage over supermarkets (Zhang and Pan 2013). Wet markets have continued to play an important role in China's food security (Si et al 2016), despite these efforts at urban renewal and "food system formalization". Most households (over 90% in Nanjing) access food from wet markets. Of these, three-quarters visit wet markets at least five days a week (Si and Zhong 2018).

Research into wet markets has largely focused on the quality and safety of food provided (Bougoure et al 2008, Chen et al 2015), consumer preference (Goldman et al 2002), and personal satisfaction with wet market shopping (Maruyama and Wu 2014). Others have looked at price advantages (Cui 2011) and the diversity of fresh food (Si et al 2016). Despite the important role of wet markets, the issue of vendor profitability is poorly understood, particularly the nature of wet market businesses and factors that affect profitability.



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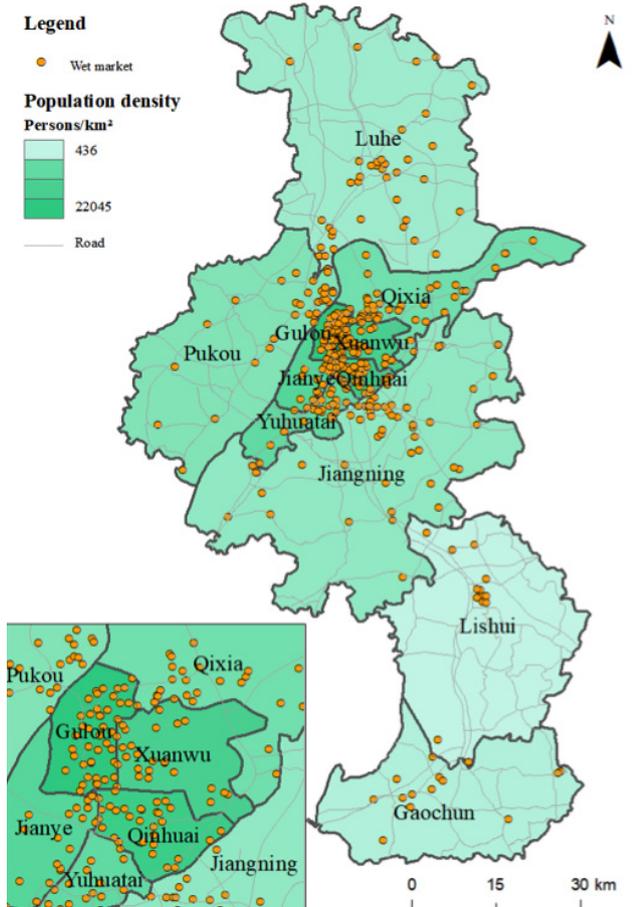
This Policy Brief is the product of Queen Elizabeth Advanced Scholars fellowships at the Balsillie School of International Affairs held by Xinxian Qi and Zhenzhong Si.

This policy brief looks at wet market food retailers’ operating conditions through a Nanjing case study based on data from the Hungry Cities Partnership (HCP) small-scale food retailer survey in 2017. It identifies policy implications from the research and provides policy recommendations for improving the profitability of wet market vendors.

## Findings

The HCP conducted a citywide survey of 1,119 small food retailers in Nanjing, which included wet market vendors, small food stores, and street vendors near wet markets. The wet markets and vendors surveyed were randomly sampled from all wet markets in Nanjing. More food vendors were sampled from wet markets with larger numbers of vendors. Two rounds of the survey were then administered using digital survey instruments. The first round surveyed 864 vendors and the second surveyed 255 vendors who were 35 years old or younger. After data review and cleaning, a total of 555 vendors provided data on their business profits. Of these, 383 were wet market vendors (see Si and Zhong (2019) for further details of the methodology).

**FIGURE 1: The Distribution of Wet Markets in Nanjing**



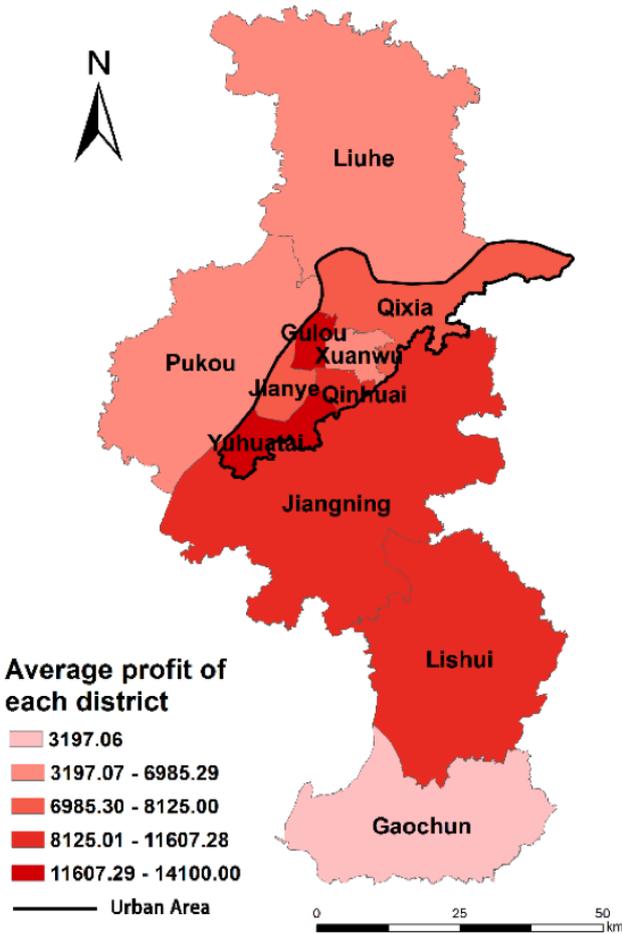
Thirteen variables were analyzed for their impact on wet market vendor profits, including six vendor characteristics (age, gender, education, range of products, expenses, and availability of mobile payment) and seven district-level socioeconomic characteristics (GDP, disposable income per capita, number of metro stations per unit area, time cost accessibility, neighbourhoods, distance to wholesale markets, and location).

The geographical detector model (GDM) (Wang et al 2010), shows that all of the variables have some impact on the spatial distribution of wet market vendor profits. However, individual vendor characteristics are generally more important determinants of profitability than the socioeconomic character of the district in which the vendor is located. Profitability had a strong positive relationship with expenses (i.e. larger enterprises with higher costs also had higher profits), whereas the effect of vendor gender on profits was minimal. Other important factors were (a) age (profitability is more likely to decline as the vendor gets older); (b) education level (vendors with higher levels of education earn greater profits); and (c) being able to transact through a mobile payment platform resulted in greater profits. Distance from the wholesale market had a negative impact, probably because transport costs increase with distance thus lowering profits.

Some aspects of the socioeconomic profile of the district where a vendor is located appears to have an impact on profitability. For example, district GDP and per capita disposable income positively affect the profits of market vendors. Infrastructure, specifically in the form of the number of metro stations per unit area, also has a positive impact. Time cost accessibility (which indicates the time it takes for customers to get to the market) negatively affects the profits of wet market vendors. Both factors illustrate the importance of urban infrastructure for the operation of food markets. The number of residential neighbourhoods in the district also has a positive impact on the profits of wet market vendors.

The average profit of all wet market vendors in each district of Nanjing was calculated. In general, the average profit of wet market vendors was higher in urban districts (CNY9,412/USD1,422) than in peri-urban districts (CNY8,942/USD1,351) (Figure 2). This suggests that small food businesses in wet markets in peri-urban areas have the potential to become more profitable by adjusting the factors with policy instruments. However, the impact of all the variables on the profit of wet market vendors was more significant in peri-urban than urban districts (Figure 3).

**FIGURE 2: Average Profit of Sampled Vendors in Districts of Nanjing (Yuan)**



## Policy Implications

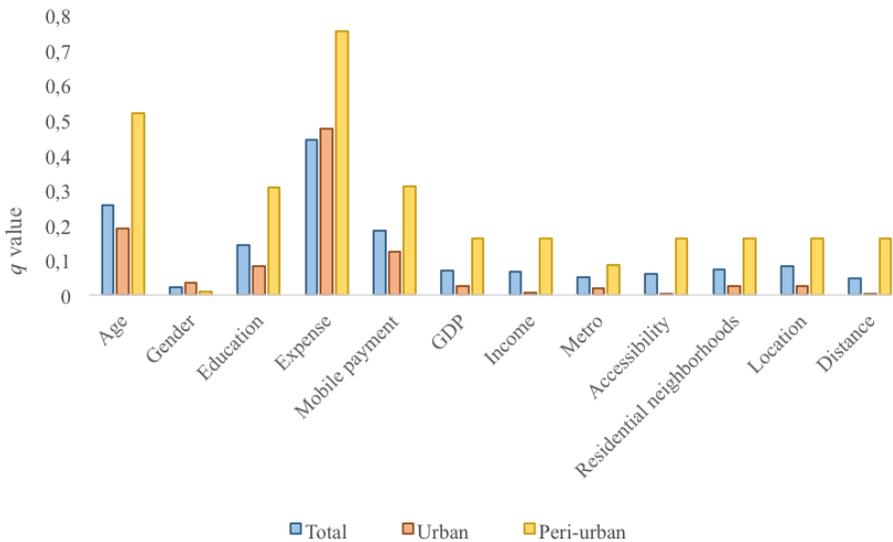
Food planning needs to be better positioned and enhanced on the agenda for China’s urban policymakers. This brief has focused on the role of wet markets as they play an essential part in the food system of Chinese cities. Focusing on Nanjing, it presents findings from a survey of wet market vendors in the city. The findings show district-level spatial variations in wet market vendor profitability as well as suggesting reasons for these variations. To support the wet market sector in the city, the following are recommended:

**A more enabling environment for wet market vendors.** Various measures could be adopted to help vendors improve their competitiveness, including incentives for subsidizing rents and vendor expenditures, properly planning the layout of wet markets, and strengthening infrastructure to improve the accessibility of food.

**Wet market vendors need training on business strategies to improve their competitiveness.** Assistance to wet market vendors should focus on their individual business characteristics. This is more likely to improve their profitability than changing the character of the districts in which they operate. Wet market managers should provide training to vendors to develop business skills and strategies and aim to make them more resilient to market fluctuations.

**Wet market vendors in peri-urban districts require additional infrastructural support.** To promote a more vibrant and robust urban food environment, more attention

**FIGURE 3: Comparison of Urban and Peri-Urban Factors Affecting Profits**



Note: q value represents the strength of the determinants and indicates how significant a variable is in determining profit level. The bigger the q value, the greater the impact of the explanatory variable.

should be paid to fostering the profitability of wet market vendors in peri-urban areas. Infrastructural development will have a more significant impact on the profitability of vendors in peri-urban than urban districts since infrastructure deficits are a more important determinant of vendor business success in these areas. Increasing the number of metro stations and reducing the time cost for residents to obtain food in peri-urban areas would improve the profitability of market vendors.

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