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The Impact of Street Food Stalls on the Local Economy and Conditions for their Sustainable Management

by

Kazuro YAHIRO [*], Satoshi TOI [**] and Yuki NAGASHIMA [***]

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Abstract

Commercial activities using public space are attracting attention across Japan. Fukuoka City is the top street-stall city in the country. There are more than 150 street food stalls in public spaces such as streets and parks, with which the citizens have been familiar for many years since the end of World War II. The stalls are an example of using public space while substantially contributing to the local economy. Moreover, analyze of the economic impact proves that street food stalls play a significant role for customers. The management of street stalls, however, has a lot of issues to be settled, in terms of hygiene or traffic. Among others, costs to rent public spaces need to be re-examined. This study revealed that if ground rents are based on market prices, a monthly fee of 18,000 yen to 30,000 yen per street food stall is regarded as appropriate. In addition, street stalls are not equipped with toilets or sewerage facilities. It is necessary to examine whether to install toilets or water supply and sewerage facilities that should be paid by socially in order to improve hygiene.

Keywords: Street food stall, Public space, Urban economy, Street-stall policy, Ground rents, Economic impact, IO table

1. Introduction

Commercial activities using public spaces are attracting attention across Japan. Road Bureau of the Ministry of Land, Infrastructure, Transport and Tourism launched a demonstration project concerning commercial activities, such as restaurants, on streets in fiscal year 2001. During the by fiscal year 2009, fifty-one demonstration projects such as open-air cafes and events were conducted using street spaces, with the aim of making streetscape vibrant. These aims reflect an increasing need to use public space. Business in public space, however, can cause diverse issues. Therefore, through the case of street food stalls in Fukuoka City, this study reveals problems resulting from the commercial use of public space and issues to be settled.

[*] Project Deveropment Department General Manager, of Kyushu Economic Research Center
[**] Associate Professor, Department of Urban and Environmental Engineering
[***] Graduate Student, Department of Urban and Environmental Engineering

Fukuoka City is the top street-stall city in the country. There are more than 150 stalls in public spaces such as streets and parks, with which the citizens have been familiar for many years since the end of after World War II. The number of tourists visiting to at these stalls have been increased recently — a proof that the stalls are an example of using public space while substantially contributing to the local economy. On the other hand, however, some problems have not been settled yet, with government, the stalls, and the citizens unable to reach an agreement.

Given such situations, street stalls have been analyzed in terms of local "street-stall policy," "landscape with street stalls," and the "use of street stalls," and their characteristics have been revealed from each perspective. However, conditions for the sustainable management of street stalls have not been examined sufficiently.

The existing studies concerning the street-stall policy of Fukuoka City government, Watanabe et al. focuses on the "street-stall policies" of Fukuoka City and the City of Kure [(1)]. In an attempt to figure out the possibility of using public space, the study compares and analyzes the backgrounds, objectives, and contents of the policies. It was Ishimaru that paid attention to the innovative street-stall policy of the City of Kure. Ishimaru regarded the policy as an innovative attempt to help the sustainability of street stalls by exempting sidewalks from the regulations of the Road Act and the Road Traffic Act[(2)]. Takagi and Deguchi evaluated the location or landscape of street stalls in Fukuoka City, pointing out that "commercial factors" are involved under "legal conditions" or that there are "local conditions" in locating street stalls. In addition, studying the psychological effect and influence of street stalls through a subject examination , they prove that, in urban design, street stalls produce an warm or harmonious atmosphere in streets, which attracts people and makes the streets lively[(3)]. From customers ' point of view, Matsuda identifies the characteristics of street-stall customers in the City of Kure through a survey, emphasizing the necessity to establish daytime tourist resources in order to create a flow of tourists in the City of Kure in the daytime and nighttime[(4)].

Previous studies on street stalls have justified the continuation of street stalls by referring to culture, history, or support among citizens, without mentioning economic aspects, which have not been convincing in continuing them.

This study measured the economic impact of street food stalls, confirming their importance in the local economy, and examined conditions for their continuation. Particularly, this study calculated ground rents, a major financial burden for restaurants, and estimated costs theoretically necessary for the continuation of street stalls.

2. The Economic Impact of Street Food Stalls

2.1 The economic impact as necessity for street stalls

Street-stall problems have developed: street food stalls have impacts on the urban environment or landscape; rules to mitigate the impacts, even if adopted, are not observed. It is indeed necessary to solve the street-stall problems. However, street stalls have economic impacts on the local community; the loss of street stalls means the loss of an important local industry. In this section, we calculated the economic impact, even though, the element impact of street stalls has not been examined as far.

2.2 The calculation of the economic impact

The economic impact of street stalls should be calculated considering not only spending at street stalls but also spending in the city by visitors who come to eat and drink at stalls. The economic impact of street stalls calculated here can be regarded as demands not generated without street

stalls.

The first economic impact is spending at street stalls by all customers: customers from the city (city customers) and customers from the outside of the city (out-of-city customers). Their eating and drinking at street stalls require food materials, electricity, and gas, affecting the local economy. The second impact is traveling expenses for city customers to go to street stalls, including taxi and bus fares charged when they go to stalls. The third impact is spending at other places than street stalls by out-of-city customers who "came mainly for street stalls." They are those who would not have visited Fukuoka City without street stalls; although not direct spending at street stalls, their spending can be regarded as the impact of street stalls to increase the city's aggregate demand (**Table 1**).

Table 1 Demand component.

Type of consume	Demand component
A. Spending at street stalls	Food and drink expenses
B. Spending at other places than street stalls by city customers of stalls	Traveling expenses
C. Spending at other places than street stalls by out-of-city customers who came mainly for stalls (Day customers, Staying customers)	Hotel expenses Shopping expenses Souvenir expenses Traveling expenses Food, drink, and tea expenses Other expenses (such as admission fees)

Based on the input-output table (IO table), we calculated the economic impact on Fukuoka City from the aggregate demand generated by street stalls as mentioned above. The IO table was the 2005 table of Fukuoka City with 32 sectors.

First, we estimated the number of customers of street stalls using a "survey of street-stall owners[1)]" conducted by Fukuoka City government. According to the survey, the average number of customers was 26.7 on a weekday, and 40.4 on a holiday. Using these data, the study estimated the average number of customers of a street stall at about 30 per day, as shown in the following equation (1):

Number of customers per day per street stall = (26.7 (average number of customers on a weekday) * 5 days + 40.4 (average number of customers on a holiday) * 2 days) / 7 days = 30 (1)

Next, the study made rough estimates of the annual average number of customers and annual average sales, resulting in the following equations (2) and (3):

Annual average number of customers attracted by street stalls = 30 per day per street stall (daily average number of customers attracted by one stall) * 257 days (operation days in a year) * 150 stalls (total number of street stalls) = 1,156,500 (2)

Annual average sales of street stalls = 1,156,500 (annual average number of customers of street stalls) * 1,500 yen (average spending of 1 customer) = 1,630.7 million yen (3)

Those who would not have come to Fukuoka City without street stalls account for around 6% of street-stall customers, it is estimated[1)]. So their real number was 69,390 people. In addition, according to a survey, of these 69,390 people, day customers made up 12.5% and staying customers 87.5%, that is, 8,674 people and 60,716 people, respectively[2)].

This study estimated spending in Fukuoka City from spending per customer shown in the "Report on the Trend of Tourism in Fukuoka City (March 2010)." Because food, drink, and tea expenses include spending at street stalls (A), however, the study excluded the spending. In addition, according to established practice, the study assumed traveling expenses from the outside of the city to be spent at origins and destinations, including half of the total traveling expenses in the total spending in the city. In this way, the study estimated spending in the city by out-of-city customers as in **Table 2**. Of street-stall customers, day and staying customers spent 2,158.7 million yen in total, which consist of hotel; shopping; souvenir; traveling; food, drink, and tea; and other expenses (such as admission fees).

Table 2 Spending by out-of-city customers.

	Day customers (estimated 8,674 people)		Staying customers (estimated 60,716 people)		Total D+ E
	Spending per capita (yen)	Total spending D (million yen)	Spending per capita (yen)	Total spending E (million yen)	(million yen)
Hotel expenses	-	-	7,090	430.5	430.5
Shopping expenses	7,476	64.8	7,029	426.8	491.6
Souvenir expenses	2,290	25.9	4,434	269.2	295.2
Traveling expenses in the city	1,177	10.2	2,615	158.8	169.0
Food, drink, and tea expenses	71	0.6	2,686	163.1	163.7
Admission fees and others	2,135	18.5	1,536	93.3	111.8
Traveling expenses outside the city	-	-	8,185	497.0	497.0
Total	-	120.1	-	2,038.5	2,158.7

2.3 The economic impact of street stalls

This study calculated the aggregate demand attributed to street stalls from spending A, B, and C in **Table 1**, estimating it at 4,064.1 million yen (**Table 3**).

Traveling expenses are the sum of traveling expenses in the city (169.0 million yen) and outside the city (497.0million yen) in **Table 2** and traveling expenses B in **Table 1** (170.7 million yen) — traveling expenses for those whose main destinations were not street stalls to go to stalls — amounting to 836.6 million yen.

Food, drink, and tea expenses are the sum of 163.7million yen in **Table 2** and sales at street stalls in **Table 1** (1,630.7million yen), amounting to 1,898.4 million yen.

This study calculated the economic impact from these aggregate demands by using an input-output table (IO table).The total economic impact was estimated at 5,323 million yen: 4,232 million yen from direct and indirect effects and 1,090 million yen from induced effects (**Table 4**).

Table 3 Aggregate demand of street stalls (direct effects).

	Aggregate demand (million yen)
Hotel expenses	430.5
Shopping expenses	491.6
Souvenir expenses	295.2
Traveling expenses	836.6
Food, drink, and tea expenses	1,898.4
Other expenses (such as admission fees)	111.8
Total	4,064.1

Table 4 Economic impact of street stalls.

	Economic impact (million yen)	Gross value added (million yen)	Number of employees induced (people)
Direct effects +Indirect effects	4,232	2,528	456
Induced effects	1,090	718	71
Total	5,323	3,247	527

2.4 The comparison of economic impacts

To examine how large the economic impact is, this study compared it with the economic impact of cruise ships' calls, which Fukuoka City government has promoted, and the economic impact of the professional baseball team Fukuoka SoftBank Hawks , the greatest attraction in Fukuoka City (**Table 5**).

Assuming that cruise ships made sixty-six calls, Fukuoka City government estimates their economic impact at 2,889 million yen. The economic impact of street stalls was 5,323 million yen. The total impact of the admission to the FUKUOKA YAFUOKU! DOME on Fukuoka City's economy was about 20,100 million yen[3]: about 12,800 million yen from direct effects, about 4,100 million yen from indirect effects, and about 3,200 million yen from induced effects[(5)].

It turns out that the economic impact of street stalls is about a quarter of that of Fukuoka SoftBank Hawks and about twice as much as that of cruise ships.

Table 5 Comparison of economic impacts.

	Economic impact of street stalls (million yen)	Assuming cruise ships made sixty-six calls in Fukuoka City (million yen)	Economic impact of visitors to the FUKUOKA YAFUOKU! DOME (million yen)
Direct effects + Indirect effects	4,232	2,268	16,900
Induced effects	1,090	622	3,200
Total	5,323	2,890	20,100

That is why the economic impact of street stalls on Fukuoka City is not small; street stalls are an industry essential to Fukuoka City.

3. Issues of Street Food Stalls and Problems to be Settled

3.1 Hygiene problem

Street food stalls on public land pose some problems in their business. The first problem is hygiene condition. Fukuoka City has required to cooking just before serve the customers and banning cooking raw foods. Majority of the customers express anxiety about hygiene condition, raising up several factors, such as 'There is no toilet close to the stall' and 'Dish washing water is too dirty'. The survey conducted by Kawazoe et al. 2007, concludes that almost all citizens of Fukuoka City recognized there as problems (**Fig.1**).

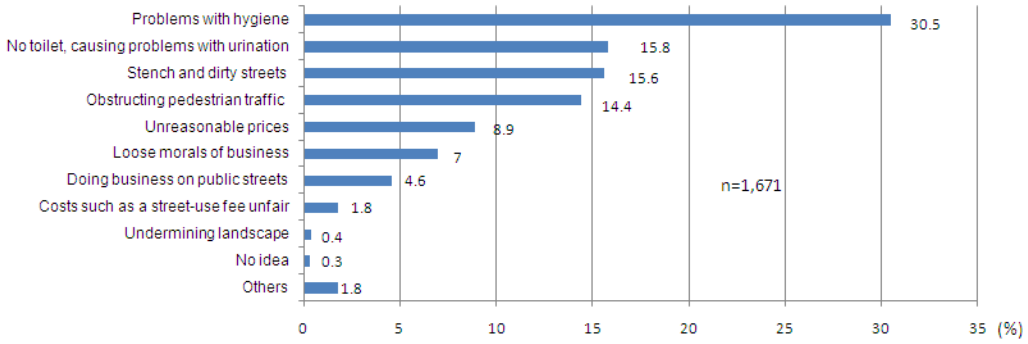

Fig. 1 Problems of street stalls（Fukuoka citizen questionnaire 2008）.

3.2 Traffic problem

The second problem is related to traffic. When making the "Fukuoka City Street Stall Guidelines," the government stipulated that a sidewalk should be at least 2 m wide after a street stall was placed so that wheelchairs could pass from the both sides (**Photo1**)). In 2000, there were 190 street stalls in Fukuoka City, of which 66 stalls did not meet this requirement and were to be relocated. Not being able to find alternative places, however, 30 stalls are not yet relocated.

In addition, thanks to their locations, many street stalls do not meet requirements concerning the width of a sidewalk left after a stall was placed or the distance between a stall and braille blocks. They need to be relocated. Of sixty-six street stalls that the city decided to relocate because of their failure to meet the requirements, thirty stalls, about half, cannot yet move as of November 2011 (**Table 6**).

Places where street-stall owners relocate their stalls are not secured. Therefore, except for those who could meet the requirements by moving their stalls slightly because there was room on nearby sidewalks, or those who operate away from other stalls, most owners have difficulty solving the problem for themselves. The city examined the possibility of moving the street stalls in every district; achieving a consensus, however, is difficult, with residents around the planned places opposing the relocation. Relocating street stalls requires the acceptance not only by customers but also by nearby residents, which necessitates efforts on the part of the owners of street stalls.

Summing up the above, street stalls are faced with many challenges in doing business in cities.

Table 6 Number of street stalls to be relocated.

Type		Number of stalls
Stalls to be relocated		66
Stalls relocated		23
Stalls closed		13
Stalls not yet relocated		30
Breakdown of stalls not yet relocated	Nagahama District	15
	Reisen District	7
	Susaki District	7
	Nakasu District	1

Photograph 1 The stall which occupies a sidewalk.

3.3 The observance of rules

The stall owners' moral is considered to be the third problem. The Fukuoka City Street Stall Guidelines stipulates rules that the street stalls owners are asked to observe.

The first rules are related to traffic, the second ones related to hygiene, and the third ones related to the other matters such as opening hours and fees for business.

The traffic and food hygiene part are also stipulated in the ordinances of Fukuoka City. The guidelines repeat these rules to draw stall owners' attention, while requiring them to make a sincere effort to observe the rules. But it is unclear for stall owners to judge what extent these rules should be observed. Because it's not mandatory, actually, there were many rules that were not observed. For example, stall owners do not follow rules for hygiene, such as "the owner should make an effort to install water supply and sewerage facilities" and "the owner should not dump garbage or waste oil in public places." Concerning the other rules, opening hours are limited to "6 p.m. to 4 a.m. next day," and the size of a stall should not exceed "3 m on the length side and 2.5 m on the width side" — neither of these rules is observed.

According to the result, Fukuoka City government investigated in July 2011, 28.1% of stall owners followed to the stipulated times to start placing their stalls — 16:00 in parks and 18:00 on streets — and as few as 2.9% of them followed the stipulated the size of stalls.

3.4 Ground rents present

Ground rents present the fourth problem. The Fukuoka City Street Stall Guidelines, which was adopted in 2000, includes articles concerning the occupation of public spaces such as streets. Among the above fees, the guidelines base the occupation fee on the "Fukuoka City Street-Occupation Fee Ordinance," the use fee on the "Fukuoka Prefectural Police Related Fees Ordinance," and the park-use fee on the "Fukuoka City Park Ordinance."

The priority of stall owners is to complete payments, such as street-occupation fee by road administrator and street-use fee by police, in order to run food stalls in the street. An owner placing a stall on a municipal road pays 6,800 yen per month: 5,600 yen per month plus a street-use fee of 1,200 yen per month. An owner placing a stall on a national road pays 13,520 yen per month: 12,320 yen per month plus a street-use fee of 1,200 yen per month. An owner placing a stall in a park is charged with a park-use fee, paying a park administrator 12,000 yen per month.

The street-occupation fees, however, are charged only for occupying streets, without consideration for commercial activity. It is questionable whether the same amounts as the fees should be applied to street-stall business. If the fees take into account commercial activity, it is also questionable whether the fees for street stalls, which are located in various places in Fukuoka City, should be uniform, because stalls' ability to attract customers are significantly different depending on their locations.

Table 7 Analysis of street-occupation fees based on an actually occupied area.

Amount currently paid for occupying a street (monthly)		
Municipal road	700yen/㎡ ×8㎡（Occupation fee ）+1200yen （Use fee）=	6,800yen
National road	1,540yen/㎡ ×8㎡（Occupation fee ）+1200yen （Use fee）=	13,520yen

Municipal road	700yen/㎡ ×16.7㎡（Occupation fee ）+1200yen （Use fee）=	12,890yen
National road	1,540yen/㎡ ×16.7㎡（Occupation fee ）+1200yen （Use fee）=	26,918yen

Municipal park	12,000yen （Use fee）=	12,000yen

4. The Analysis of an Appropriate Land-use Fee

4.1 A land-use fee based on an actually occupied area

The cost actually paid for occupying a street is the sum of a street-occupation fee and a street-use fee. The street-occupation fee is 6,800 yen for a municipal road and 13,520 yen for a national road. The calculation of these amounts is based on an area occupied by a street stall; the guidelines present an area of 7.5 m^2, whereas the calculation is based on an area of 8 m^2. On the other hand, the actually occupied area is 16.7 m^2 on average in Fukuoka City. The calculation based on this number leads to 12,890 yen for a municipal road and 26,918 yen for a national road (**Table 7**). That is why the fees for a street stall need to be increased by 6,090 yen on a municipal road and by 13,398 yen on a national road compared with the current cost.

4.2 A land-use fee based on parking fees in Tenjin District

To understand current land-use fees in the downtown of Fukuoka City, we investigated monthly parking fees in Tenjin District in November 2010 (**Fig 2**). According to the result, the average parking fee near places where street stalls were located was 31,165 yen (**Table 8**). Many of parking lots in downtown are indoor; the fee of an indoor parking lot includes the cost to construct the structure and maintain it. In addition, parking garages use space efficiently. So fees for these

facilities cannot be precisely compared with those for street stalls. Even outdoor, surface parking lots, however, charge fees of 20,000 yen or higher. Therefore, the street-occupation fee of 5,600 yen seems too low; it should be re-examined whether the current amount is appropriate.

Fig. 2 Locations where monthly parking fees were investigated.

Table 8 Result of the investigation on monthly parking fees.

Number	parking fee (monthly, yen)	
1	37,800	Indoor /Drive-in
2	27,300	Indoor / Mechanical
3	37,800	Indoor /Drive-in
4	21,000	Indoor / Mechanical
5	36,750	Mechanical
6	24,150	Indoor / Mechanical
7	36,750	Mechanical
8	34,650	Indoor / Mechanical
9	36,570	Drive-in
10	36,750	Indoor / Mechanical
11	23,100	Indoor / Mechanical
12	42,000	
13	36,750	Indoor / Mechanical
14	25,000	Indoor
15	26,250	
16	22,000	Outdoor/ Surface
17	25,000	Outdoor/ Surface
Average	31,165	

4.3 A land-use fee based on rents of office buildings

Moreover, this study calculated a fee for using the area of a street stall from the rents of office buildings in Fukuoka City. According to “Market View Japan Office: National vacancy rates and average market rents (old criteria: all properties)” (2011, CB Richard Ellis, Inc.), the average rent of office buildings in Fukuoka City is 8,930 yen per tsubo. Using this deta, this study calculated a

fee for the area of 8 m² — an area occupied by a street stall based on the guidelines — at 21,648 yen, and a fee for the actual area of 16.7 m² at 45,191 yen (**Table 9**).

From another point of view, if it is assumed that the street stall owner rents public space only for opening ten hours, the owner has to pay 18,830 yen. Thus, the fee is at least about 18,000 yen — a cost nearly three times the amount of the current cost.

Table 9 Analysis of street-occupation fees based on a market price.

Rent based on a market price (monthly, yen)	
Average market rent of office buildings in Fukuoka City (yen/tsubo)	8,930
Occupied area of 8 m^2, using 24 hours	21,648
Occupied area of 16.7 m^2, using 24 hours	45,191
Occupied area of 16.7 m^2, using 10 hours (from 6 p.m. to 4 a.m.)	18,830

The average market rent of office buildings is based on "Market View Japan Office: National vacancy rates and average market rents (old criteria: all properties)" (2011, CB Richard Ellis, Inc.).

The average market rent was calculated over a period from July to September 2011. The calculation included, in principle, all office buildings in the study area. The rent does not include a common-area charge.

4.4 A land-use fee based on rents of restaurants

In the same way, this study calculated a fee for using the area of a street stall from the rents of restaurants in Fukuoka City. According to "Tenant Fukuoka[(7)]," the rent of properties usable as cafés, which are similar to street stalls in services, was on average 15,254 yen per tsubo in Chuo Ward, Fukuoka City. The study calculated a fee for the area of 8 m² occupied by a street stall at 36,914 yen and a fee for the actual area of 16.7 m² at 77,058 yen.

These results revealed that restaurants, a type of business closest to street stalls, pay higher rents as a land-use fee than street stalls. Considering the fact that the owners of street stalls operate restaurants in downtown of Fukuoka City, the current land-use fees for them are too low. It is presumed that the amounts need to be revised; the owners have to pay at least three to six times the amount of the current fee.

5. Conclusion

By analyzing the economic impact, this study proved that street food stalls play a significant role not only in customer attractiveness but also in the local economy. The amount of the economic impact exceeded 5.3 billion yen. In this sense, street stalls can be regarded as an important industry in Fukuoka City.

The management of street stalls, however, has a lot issues to be settled, concerning about hygiene or traffic. Among others, costs to rent public spaces need to be reexamined. If ground rents are based on market prices, a monthly fee of 18,000 yen to 30,000 yen per street stall is regarded as appropriate, this study revealed.

If the owners of street stalls pay this, it is questionable whether they can sustain their business. Given the economic impact of street stalls, it is possible that the cost is shared between the owners and government.

In addition, street stalls are not equipped with toilets or sewerage facilities. It is necessary to examine whether costs to install toilets or water supply and sewerage facilities should be paid socially to improve hygiene.

Notes

1) From a survey of street-stall owners conducted by Fukuoka City from October 12 to 20, in 2011
2) The estimation is based on the results of surveys that the Urban System Planning Laboratory of Kyushu University conducted of tourists to Fukuoka City in 2011 and of the customers of street stalls in December 2011.
3) The estimation is based on the results of a survey that the Urban System Planning Laboratory of Kyushu University conducted of tourists to Fukuoka City in November 2011.

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