Analysis of Landscape Demands towards Offline Markets under the Influence of Online Shopping in the Chinese and Indonesian Communities

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Abstract. With the gradual popularization and improvement of online shopping and express delivery services, offline physical stores have been impacted, but also gradually evolved many new possibilities due to the gradual integration of online and offline economy. In addition, COVID-19 has stimulated the daily necessities such as food and vegetables to be gradually added to the menu of online shopping, and the offline vegetable market, which has diversified modes and is in urgent need of renewal, is also facing new changes brought by online shopping as an assembly with multiple contradictions. In order to get a possible future offline market prospects for development, in this study, we conducted a questionnaire survey on people who often choose to shop online and offline in several major residential areas in developing countries China and Indonesia, and asked them to evaluate and express their opinions from the aspects of market space, beautiful environment, functional needs and evaluation of online and offline vegetable markets. From the perspective of consumers themselves, we hope to investigate and discover residents' new demands for the landscape and future functions of the vegetable market.

Keywords: Agricultural products market, landscape evaluation, online shopping, landscape needs, social viewpoint.

1 INTRODUCTION

1.1 Background

The internet virtual shopping experience and model (online markets) has been the focus of people's attention in recent years, even if it's not yet perfected. It is gaining popularity because of some bad experiences in offline market. Online and physical, offline markets are gradually becoming more and more integrated. As the effect of the COVID-19 situation, the trend of shopping at home increased tremendously and online economy (e-commerce) prospered much better. Even so, people still choose offline markets over online shopping from time to time. Offline, agricultural product markets (wet markets), as it is indispensable for the community near them, could reflect the impacts of their choices on the type of market environments they prefer. It is necessary to research about

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the residents' perspectives and demands on the wet market space and environment and the impact caused by the existence of online markets [1].

E-commerce has made people have the tendency to disregard physical markets. But, since human is a physical creature, it cannot replace the actual atmosphere and experience of shopping offline [2]. Shopping offline has many advantages, from getting fresh products, involved in social interactions, and even feeling the local culture of the market. These are what drawn people back to the offline markets. For example, combining shopping and dining experiences on Italian food, enabling customers to choose their own food choices in Eataly; Screens showed commodities information (basic attributes, nutritional components, origins, etc) and cooking methods in Coop in Milan, Italy; Convenience stores in Japan offers limited, seasonal goods and foods, creating hype to attract customers in Familymart, Japan.

1.2 Purpose and significance

Significancy: Giving attention to study the spatial structure of offline wet markets for future references. Discussing the market prospect by analyzing and comparing existing markets, understanding the real demands of the community for the market through social investigation. Providing feasible ideas and references for future space and landscape design directions of wet markets [3].

Purpose and scope: The emergence of online shopping has the following impacts on the demand of residents' demand for environment in farmers' markets [4]. The first is the influence on the market type, which is mainly reflected in the position and function of the farmers' market; The second effect is to change people's demand for the environment and functional space of agricultural markets; The third effect is the impact brought by the combination of online and offline agricultural market shopping [5].

2 RESEARCH METHODS AND PROCESSES

2.1 Literature base

In recent years, the relationship between built environment and physical activity has gradually attracted attention, and the existing research has achieved fruitful results in accessibility [6]. The conclusion that accessibility is a key factor affecting people's daily shopping, leisure exercise and other travel activities has been widely confirmed. The research focuses on the influence of street conditions on people's temporal and spatial behavior. The convenience of spatial conditions and environmental quality of the farmers' market jointly determine its use results. The impact of the farmers' market on users can be clearly and structurally reflected through accessibility and attractiveness, which is shown in Figure 1.

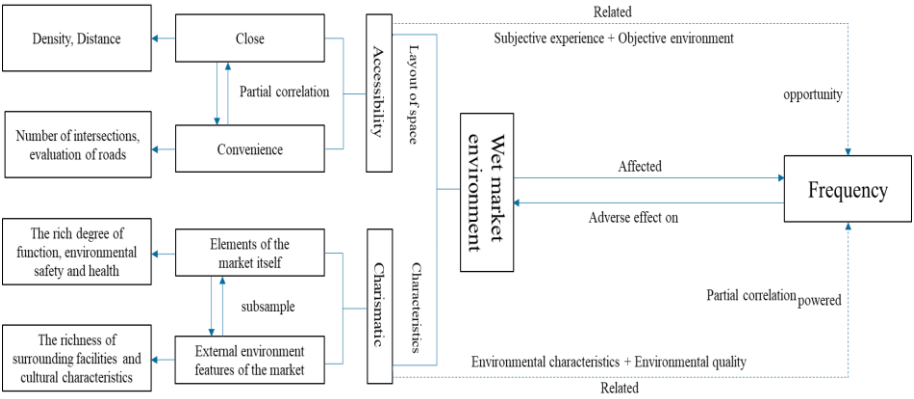

Fig. 1. Analysis framework of the farmers' market on users (figure credit: original)

Kevin Lynch proposed that the value of accessibility is the degree of selectivity in accessible resources [7]. Jane Jacobs expressed with the case of block parks that the purpose of facilities is to attract as many people as possible with different agendas, interests and purposes [8]. In order to accurately reflect the selection richness and service convenience of the vegetable market layout, this paper divides accessibility into spatial proximity and travel suitability, taking full account of the potential accessibility conditions of the objective environment and the actual accessibility results of the subjective choice. For the independent space of the vegetable market, the attraction is divided into its own planning elements and external environment characteristics from the perspective of planning regulation, and the characteristics of individual facilities and the overall planning environment are comprehensively analyzed [9].

2.2 Research methods

We only surveyed residents who live in residential areas within 2km of at least 1 vegetable market and who have experience of shop for vegetables and food both online and offline [10]. There are no specific places limitation. People were randomly selected for the questionnaire, but only the volunteers who met the research conditions were statistically analyzed. In the questionaire, same cases and photos (schematic diagrams of landscape, space and function of each market) were selected to be a reference for the volunteers to evaluate (but not to vote for the picture). We used questionnaire survey and data analysis to investigate residents' basic spatial evaluation. In terms of questionnaires, we need to investigate both online and offline situations (including consumption proportion, frequency, purchase type, expected functions, etc.), as well as offline market evaluation. The evaluation of the offline market includes our evaluation of the market itself, such as space type, internal layout characteristics, functional richness, environmental health, and other factors, as well as the evaluation of the market's macro environment, such as regional, comprehensive, or unitary, the richness of surrounding facilities, culture, and brands. On this basis, we made a statistical analysis of the survey

results. Common statistical methods include frequency analysis, factor analysis, cross table and variance verification, chi square test, etc.

3 RESEARCH RESULTS AND ANALYSIS

3.1 Result overview

We have 93 questionnaires were collected from China and 128 from Indonesia. 54 effective respondents in China part and 57 in Indonesia. In order to reduce the bias caused by participants' different living habits, we hope that in terms of assessment and evaluation of shopping space only voted by the people who often shopping in vegetable market and like do both online shopping and offline shopping. As these people are more experienced, we hope the answer could be more objective. Explanation of the questionnaire: The fresh supermarket and wet market mentioned in the article refer to the comprehensive selling space of vegetables, fruits, fish, meat, frozen food, cooked food, spices and staple food at least at the same time, and the size is not limited. Since this questionnaire is already after the outbreak of the epidemic, please follow your purchasing habits during the open period of 2021China part: Among the 93 questionnaires, 75 people (80.6%) have at least one wet market within 2 km of their home. 57 of them (61.2%) often shopping in offline markets, 24 people (25.8%) never buy fresh vegetables online, and only 34 people (36.5%) like both online and offline shopping. Indonesia part: from 128 responses, 119 people (93%) have at least one wet market within 2 km near their home while the rest has none. On other matter, 78 people (60.9%) shop in offline market more often while 35 people (27.3%) prefer to shop online, and 15 people (11.7%) chose both online and offline.

3.2 Online and offline vegetable market consumption habits and daily survey

In China, the majority is group 50~60 (32.97%) while in Indonesia is group 20~30 (32.8%). Since the representative numbers of some age groups are very rare, in the follow-up analysis, we included the answer sheets older than 60 years old in the 50–60 year old group, and those younger than 20 years old in the 20-30 year old group. In both China and Indonesia, females are the main consumers of vegetable markets (77.53% and 66.4%). In China, the people spend their money online or offline consumptions is half-half (50%). In Indonesia people prefer to spend money for offline shopping (60.9%). About 88% of respondents in China met the requirements of our questionnaire (there is at least one food market within two kilometers of their residence), and 46.67% of them had two or more than 2 veg markets nearby. About 93% of respondents in Indonesia met the requirements of our questionnaire, and only 28.9%of them had two or more than 2 veg markets nearby. In order to screen respondents who meet our research requirements and reduce the bias caused by distance factor, we will not count the population without a nearby vegetable market in the follow-up analysis. In China, more than half (57.9%) of the people will shop online for fresh products, and most of them will shop online for fresh products 2-4 times in a month.

The number of people who buy fresh vegetables online in Indonesia (48.4%) is also close to catching up with the number of people who do not (51.6%), while the majority of those who do buy fresh products online also buy them two to four times in a month (22.7%).than 6 times a month is the second largest (29.33%).In Indonesia who go shopping at the wet markets 1-2 times a month also account for the largest proportion (45.3%), while those who go shopping 2-6 times account for the second largest proportion (32%).

3.3 Offline vegetable market factors evaluation

From this part, we hope to further evaluate the attractiveness degree of the external environment characteristics of the offline vegetable market by using the scale questionnaire. We divide the external attractiveness of the offline vegetable market into the following aspects: close to the business circle, size, proximity to home, brand familiarity, historical and cultural heritage, environment it's good Reliability test(Cronbach>0.9) and validity test (KMO >0.8)were carried out from the valid answers we harvested, which showed that both reliability and validity were very suitable for extracting information. The corresponding common degree value of all research items is higher than 0.4, indicating that research item information can be effectively extracted. In addition, the KMO= 0.652, ranging betweeen 0.6 and 0.7 and greater than 0.6, indicating that the data can be effectively extracted, but the validity is generally reflected from the side.The reliability coefficient value is 0.737, greater than 0.7, indicating that the reliability quality of the research data is very good. The CITC value of "Around or within the business circle" is less than 0.4, but it can be reserved. As the CITC value corresponding to " close to home" is less than 0.2, it indicates that the relationship between " close to home" and other analysis items is weak. In summary, the reliability coefficient value of the study data is higher than 0.7, which indicates that the data reliability is of high quality and can be used for further analysis. In both China and Indonesia, the distance factor greatly influenced respondents' choice of offline vegetable market consumption. Chinese respondents gave the lowest score to the factor "whether this vegetable market is a popular market" (2.03)Indonesia respondents gave the lowest score to the factor "brand security" (3.50). The External offline vegetable market factors evaluation in China and Indonesia are shown in Table 1 and Table 2.

Table 1. External offline vegetable market factors evaluation in China (table credit: original)

Item	Complete indifferent (1point)	Indifferent (2 points)	Will care (3 points)	Will attract me (4 points)	Very attractive me (5 points)	Average score (2.5 means needed)
Around or within the **business circle**	0(0%)	10(31.25%)	5(15.63%)	12(37.5%)	5(15.63%)	3.38
Larger scale	1(3.03%)	2(6.06%)	12 (36.36%)	12 (36.36%)	6 (18.18%)	3.61
Close to your home	1 (2.94%)	0 (0%)	6 (17.65%)	10 (29.41%)	17 (50%)	4.24

Brand familiarity	2 (6.45%)	8 (25.81%)	7 (22.58%)	10 (32.26%)	4 (12.9%)	3.19
Has a **history culture**	3 (9.38%)	19 (59.38%)	6 (18.75%)	2 (6.25%)	2 (6.25%)	2.41
The market is a **popular** market	8 (25%)	17 (53.13%)	5 (15.63%)	2 (6.25%)	0 (0%)	2.03
The market **environment** is good	1 (3.03%)	4 (12.12%)	10 (30.3%)	12 (36.36%)	6 (18.18%)	3.55

Table 2. External offline vegetable market factors evaluation in Indonesia (table credit: original)

Item	Completely indifferent (1point)	Indifferent (2 points)	Will care (3 points)	Will attract me (4 points)	Very attractive me (5 points)	Average score (2.5 means needed)
Around or within the business circle	1(0.8%)	3(2.3%)	36(28.1%)	34(26.6%)	54(32.2%)	4.07
Larger scale	2(1.6%)	8(6.3%)	32(25%)	43(33.6%)	43(33.6%)	3.91
Close to your home	1(0.8%)	2(1.6%)	9(7%)	35(27.3%)	81(63.3%)	4.51
Brand familiarity	10(7.8%)	12(9.4%)	42(32.8%)	32(25%)	32(25%)	3.50
Has a history culture	3(2.3%)	5(3.9%)	34(26.6%)	32(25%)	54(42.2%)	4.01
The market is a popular market	6(4.7%)	11(8.6%)	32(25%)	45(35.2%)	34(26.6%)	3.70
The market environment is good	5(3.1%)	6(4.7%)	15(11.7%)	35(27.3%)	68(53.1%)	4.23

Due to the complex structure of wet market itself, including various elements and low correlation coefficient with beautiful scenery, this study only investigated the spatial form of the vegetable market itself in a broad sense. We unified the spatial pattern of the vegetable market into five types: free open, fully open, semi-open, closed, underground. In the questionnaire, the reference picture of spatial type will be showing on the up side, and the schematic diagram of spatial structure will be matched under the picture. The respondents will evaluate the wet market of the spacial type based on their daily experience. Further evaluation scale in questionnaire survey of the influence elements are as follows: cleanliness, ventilation and lighting, convenience, beauty, safety, shopping streamline is simple and clear.

The market with the highest average score and no negative comments is the closed space market. However, in the closed vegetable market, lighting and ventilation become an important drawback, while the clear shopping streamline is the biggest advantage of this kind of vegetable market. The second is the underground space vegetable market. In addition to lighting and ventilation, the index of underground space vegetable market is also very high, but the lighting and ventilation problems of underground space are inevitable. In the semi-opened space, the score index of the vegetable market is fair, but there is no bad comment. and the biggest drawback of it is cleanliness. The free

vegetable market is controversial. It is superior to all other types of vegetable markets in terms of lighting, ventilation and convenience, but worst in terms of cleanliness, beauty and safety. Therefore, it eventually became the worst-rated vegetable market among the five types. The score of the open vegetable market is relatively poor, especially in convenience and shopping line is unclear. In addition, its advantages are not obvious. The spatial type that received the highest average score without any low score was the semi-opened vegetable market. The second is the free open vegetable market, also did not have a low score. However, in semi-closed markets, the planning of shopping streamline may need to be further improved, while in free open markets, the aesthetic index is poor. The worst evaluation was given to the underground space type of vegetable market, which was lower than other types in every score and showed very poor performance in the inevitable problem of ventilation and lighting. The evaluation of both the fully open and closed vegetable markets is fair, with neither excellent nor outstanding praise nor poor evaluation. However, the score of the closed vegetable market is slightly higher than that of the fully open one. The fatal weakness of the fully open vegetable market is also reflected in aesthetics, and the fatal weakness of the closed vegetable market is reflected in lighting and ventilation. Chinese residents pay more attention to the safety, cleanliness and visibility of shopping routes when evaluating the space types of several wet markets. Closed and underground vegetable markets received the highest ratings. (In China, the underground vegetable market is usually located in the underground floor of the business district, adjacent to the parking lot and business district, so the cleanliness and safety factor is relatively high. The free and open vegetable market that gets the lowest evaluation. Residents in Indonesia attach more importance to daylighting, ventilation, convenience and safety in the evaluation of several types of vegetable market space. Semi-open market and free open market received the highest evaluation, while underground market received the lowest evaluation. We can roughly guess that Chinese residents may pay more attention to the orderliness and management of the vegetable market space, while Indonesian residents prefer the experience of openness, freedom, convenience, ventilation and lighting.

3.4 Feedback of respondents' vegetable market space improvement opinion on online and offline vegetable market

We used the interview scale to ask respondents to select new features they needed and wanted, as well as their personal opinions on improving future development, and we selected the answers with the highest repetition rate and highest demand:

At the pick-up point of distribution, it is hoped that there can be a designated store self-pickup function in China. When we investigated the offline vegetable market, the following demands had the highest repetition rate. 1) offline market should be equipped with online ordering and distribution function. 2) Fine processing, such as fish slicing, chestnuts shelled, etc. 3) more stores can sell vegetables, so that there is no need to buy a lot at a time. 4) Comments and complaints channel, standardized management, price announcement, expansion of processed semi-finished products and cooked food categories. 5) Should pay more attention to purchase experience, pay more attention to the

beauty of the landscape and the combination with other industries. However, the following demands had the highest repetition rate in the online market in China are as follows. 1) Online wet markets should collaborate with farms or large enterprises with guaranteed quality products. 2) Add variety. 3) More vegetable supplies. 4) Expand the variety and refine the processing5) With farmers and other direct contact, you can buy wild vegetables and other products.6) Delivery service.7) Notice and price announcement of new products, quality assurance, price concessions, seasonal freshness and the most important safety guarantee.

At the pick-up point of distribution, it is hoped that there can be a designated store self-pickup function in Indonesia. When we investigated the offline vegetable market, the following demands had the highest repetition rate.1) Availability of other payment methods. 2) Food court with food categories (half-cooked, cooked, and halal) and cooking demos. 3) Market's information (booth, maps, etc). 4) Customer service and delivery options. 5) No technology needed, still using man power. 6) One place has everything. When we investigated the online vegetable market, the following demands had the highest repetition rate. 1) Online wet markets should collaborate with farms or large enterprises with guaranteed quality products. 2) We hope that more high-tech means can be added to online food market delivery (UAV, robot food delivery, etc.). 3) Ease of usage and convenience. 4) Better promotions and customer reach strategy. 5) Stable price and quality. 6) Other methods that promote budget-friendly, safe, and fast delivery.

4 CONCLUSION

In both China and Indonesia, the distance factor greatly influenced respondents' choice of offline vegetable market consumption. Chinese respondents gave the lowest score to the factor "whether this vegetable market is an Internet celebrity market". Indonesia respondents gave the lowest score to the factor "brand security". Chinese residents pay more attention to the safety, cleanliness and visibility of shopping routes when evaluating the space types of several wet markets. Closed and underground space type vegetable markets received the highest ratings. (In China, the underground vegetable market is usually located in the underground floor of the business district, also adjacent to the parking lot, so the cleanliness and safety factor is relatively high.) The free and open vegetable market gets the lowest evaluation. Residents in Indonesia attach more importance to daylighting, ventilation, convenience, and safety in the evaluation of several types of vegetable market space. Semi-open market and free open market received the highest evaluation, while underground market received the lowest evaluation. Respondents from China and Indonesia all believe that online food markets should be better combined with offline food markets, with better distribution services, and provide more functions of food processing and processed food. They hope that online food markets can be combined with farms and enterprises to provide more good quality and safer products. However, Chinese residents are more looking forward to the improvement of management and planning of food markets, while Indonesian residents are more looking forward to comprehensive and diverse food markets.

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