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Post-Relocation Spatial Transformation of Street Vending and Its Integration into Urban Public Space: Evidence from Karebosi, Makassar, Indonesia

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Abstract

The integration of informal economic activities into urban public spaces remains a significant challenge, particularly in rapidly growing cities. Street vendors contribute to local economic activities and employment, but their use of sidewalks, roadsides, and other public spaces may create conflicts with pedestrian circulation and urban environmental quality. This study aims to examine the spatial transformation of street-vending activities following relocation in the Karebosi area of Makassar City, Indonesia, focusing on physical environmental quality, accessibility, supporting facilities, and business conditions. A case study approach with descriptive quantitative analysis was employed through field observations, preliminary surveys, spatial mapping, and assessment of vendors' business conditions. The findings indicate that the relocation program improved the physical quality of the vending environment through permanent kiosks, improved infrastructure, better accessibility, and greater certainty of business space. Vendors generally reported higher satisfaction with the physical facilities and business environment compared with their previous locations. However, improvements in the physical environment were not necessarily accompanied by significant improvements in economic conditions, mainly due to limited visitor numbers and insufficient area promotion. The study demonstrates that successful integration of the informal sector into urban public space requires more than physical relocation. A sustainable approach should combine spatial improvement, accessibility enhancement, business support, area promotion, and continuous post-relocation evaluation. These findings contribute to more inclusive and sustainable strategies for integrating informal economic activities into urban spatial planning.

Keywords: Informal sector; public space; spatial transformation; urban development

1. Introduction

Street vendors (are a form of informal economic activity that plays an important role in supporting urban economic dynamics through job creation, the distribution of goods and services, and the fulfillment of community needs. Nevertheless, street vendors are still often perceived as an urban problem because their activities take place in public spaces, such as sidewalks, roadways, and other open spaces, potentially disrupting spatial functions, pedestrian circulation, and the quality of the urban environment. In many cases, city governments still regard the informal sector as an unorganized activity, lacking adequate regulation and not yet fully integrated into urban development systems [1].

Various policies for managing street vendors (PKL) have been implemented in different cities, ranging from enforcement and relocation to the provision of more appropriate business locations. However, the existence of street vendors is influenced not only by issues of spatial order but also by various social and economic factors, such as the culture of eating outside the home, the need of low-income communities for affordable food, support from the tourism sector [2], and the need of surrounding formal businesses for additional surveillance functions [3], [4]. The complexity of these factors indicates that management policies oriented toward short-term solutions, particularly relocation, have not fully produced sustainable solutions, as demonstrated by various studies. Relocation programs often fail because new locations are unable to attract visitors or generate sufficient economic activity [5], [6]. In addition, the selection of less strategic locations is one of the main factors causing vendors to return to their original locations [7], [8]. Similar phenomena have also been found in various Indonesian cities, where evictions or relocations without comprehensive planning have caused vendors to return to using sidewalks and roadways as places of business [9]–[11].

On the other hand, street-vending activities continue to survive and develop despite various efforts to restrict them, as stated by Wongtada (2015), although their development continues without a long-term development

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strategy [12], [13]. Although these studies provide important insights into the challenges of managing informal economic activities, several aspects remain insufficiently explored. In particular, limited attention has been given to the interrelationships among physical environmental quality, spatial accessibility, supporting facilities, and the business environment in shaping the integration of informal-sector activities into the broader urban spatial structure. These dimensions are often discussed separately, rather than examined as interconnected components of post-relocation spatial transformation. Consequently, the extent to which improvements in the physical environment and supporting infrastructure contribute to the functional integration and sustainability of informal economic activities within designated urban spaces remains insufficiently understood. This gap is particularly relevant in rapidly growing Indonesian cities, where relocation programs are increasingly implemented as part of urban public-space management strategies [14], [15].

The Karebosi area in Makassar City is one of the strategic public spaces that has undergone spatial restructuring through the provision of a relocation area for street vendors. The area is located at the center of trade, service, government, education, and recreational activities, providing high accessibility and considerable potential for integrating informal-sector activities into the urban spatial system, as shown in Fig. 1. The restructuring of the area aims not only to create spatial order but also to improve the quality of the business environment by providing more adequate facilities, improving comfort and safety, and establishing the legality of trading activities [16], [17].

Previous studies on street-vendor management have primarily focused on government policies, regulatory approaches, relocation strategies, and their socioeconomic implications, particularly in relation to vendors' livelihoods, income, employment opportunities, and business continuity [5]–[11], [14], [15]. These studies have provided important insights into the challenges of managing informal economic activities and the consequences of relocation for street vendors. However, the relationship between spatial restructuring and the physical and functional integration of informal-sector activities into urban public spaces remains insufficiently examined. In particular, physical environmental quality, spatial accessibility, supporting facilities, and business environments have often been discussed as separate aspects rather than as interconnected dimensions of post-relocation conditions. Consequently, a more integrated understanding is needed of how these spatial and environmental characteristics relate to the functioning of relocated vending activities and their integration into the broader urban spatial structure.

Based on these conditions, this study aims to analyze the spatial transformation of street-vendor areas through improvements in the physical environment, accessibility, and business facilities to support the integration of the informal sector into urban public space. This study is expected to contribute to the development of a more adaptive, inclusive, and sustainable concept for managing the informal sector as part of an urban development strategy, while the characteristics of relocation sites may support the spatial transformation of the informal sector as part of urban public space development.



Figure 1. Land use and activities in the Karebosi area

2. Research Method

2.1. Research Design

This study was conducted in the Karebosi area of Makassar City, South Sulawesi, Indonesia, which serves as the designated relocation destination for street vendors previously operating in Rappocini, Slamet Riyadi, and Sunu. The relocation program was implemented by the Makassar City Government to reorganize street-vending activities and improve the management of urban public spaces. The three original vending locations represented priority areas with high concentrations of street vendors before relocation.

The analysis focused on physical environmental quality, accessibility, supporting facilities, and business conditions. This approach was selected to obtain a comprehensive understanding of the relationship between changes in the physical condition of the area, location characteristics, accessibility, supporting facilities, and trading activities following the restructuring of the area.

2.2. Study Area

The study was conducted in the Karebosi area with three street-vendor original sites: Rappocini, Slamet Riyadi, and Sunu. These sites were selected because they represented priority areas with a high concentration of street-vending activities before the relocation program. The total population targeted by the relocation program was 282 street vendors, comprising 150 vendors in Rappocini, 86 in Slamet Riyadi, and 46 in Sunu. For the vendor-level assessment, data were obtained from 64 respondents, consisting of 37 processed-food vendors and 27 non-food vendors. The respondents provided information on vending duration, income, business conditions, and perceptions of the relocated environment.

Of the 282 vendors targeted to be relocated that identified across the three original locations, 64 met the eligibility criteria and participated in the survey. The inclusion criteria were: (1) street vendors who had been officially relocated to one of the three designated relocation sites; (2) vendors who were actively operating at the relocation site at the time of data collection; (3)

vendors who had sufficient experience at the relocation site to provide information on their business conditions; and (4) vendors who agreed to participate in the study and completed the questionnaire/interview.

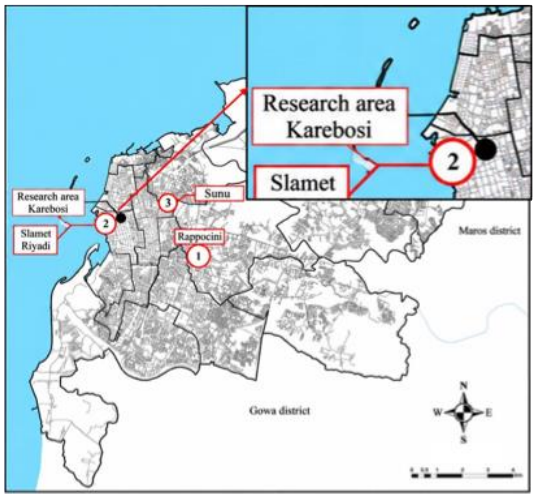


Figure 2. Location of relocation. (source: OpenStreetMap Contributors)

2.3. Data collection

Data were collected from February to March 2026 through four complementary techniques: preliminary surveys, field observations, spatial mapping, and vendor assessments. These activities were organized into sequential stages to ensure that the spatial characteristics of the study area were identified before the assessment of physical conditions and vendor business characteristics. (1) First, a preliminary survey was conducted to identify the existing conditions and spatial distribution of street vendors before the main data collection process. This stage involved identifying the three original vending locations (Rappocini, Slamet Riyadi, and Sunu) and the designated relocation destination in the Karebosi area. (2) Second, field observations were undertaken at the relocation area to document the physical characteristics of the vending environment. Observations focused on kiosk conditions, spatial organization, road access, surrounding land uses, and the availability of supporting facilities, including electricity, clean water, washing facilities, trading stalls, parking areas, and eating spaces. (3) Third, spatial mapping was conducted to identify the geographical distribution of the original vending locations and the relocation destination, as well as their relationships with surrounding urban activities. The mapping process was used to describe the spatial context, road connectivity, and proximity to commercial, educational, office, and residential areas. (4) Fourth, vendor assessments were conducted through questionnaires and interviews with 64 respondents, comprising 37 processed-food vendors and 27 non-food vendors. The assessments collected information on business characteristics, vending duration, monthly income, business conditions, satisfaction with the relocation environment, and perceptions of changes following relocation.

The collected data were analyzed using descriptive quantitative analysis and qualitative interpretation. The assessment focused on four dimensions: physical environmental quality, accessibility, supporting facilities, and business conditions. Physical environmental quality was examined through kiosk conditions, uniformity of kiosk forms and dimensions, and the spatial organization of vending spaces. Accessibility was assessed through road connectivity and the relationship between the relocation area and surrounding urban activities, including commercial, educational, office, and residential functions. Supporting facilities were evaluated based on the availability of electricity, clean water, washing facilities, parking areas, eating spaces, and designated vending stalls. Business conditions were examined through vendors' commodity types, business operation duration, average monthly income, and their reported experiences of the business environment and customer visitation.

Vendor-level information was collected to assess business conditions and economic characteristics following relocation. The instrument covered three main aspects. First, business characteristics included the type of commodity sold and the duration of business operations. Second, economic characteristics included average monthly business income, categorized into income groups of less than IDR 1 million, IDR 1–2 million, IDR 2–3 million, and IDR 3–4 million. Third, vendors' perceptions were collected regarding the physical condition of their current trading spaces compared with their previous locations, satisfaction with the available facilities and business environment, and customer visitation following relocation. Supplementary interviews were conducted to obtain further information about vendors' experiences, particularly concerning business conditions, customer visitation, and the challenges encountered after relocation. The collected responses were analyzed descriptively using frequencies and percentages, while interview findings were interpreted qualitatively to support the assessment of post-relocation business conditions.

2.4. Data analysis

The collected data were analyzed using descriptive quantitative analysis supported by qualitative interpretation of field observations and vendor interviews. The analysis focused on four dimensions: physical environmental quality, accessibility, supporting facilities, and business conditions. (1) First, questionnaire data were processed by classifying responses into relevant categories, including commodity type, business duration, and monthly income. Descriptive statistics, particularly frequencies and percentages, were used to summarize the distribution of vendor characteristics and economic conditions. Percentages were calculated using the following formula:

$$Percentage\ (\%) = (f / N) \times 100$$

where f represents the frequency of responses in each category and N represents the total number of respondents or the relevant vendor group. (2) Second, field observation data were organized according to the physical characteristics of the relocation area, including kiosk conditions, spatial organization, road accessibility, and the

availability of supporting facilities. These observations were analyzed descriptively to characterize the existing post-relocation environment.

(3) Third, spatial mapping data were interpreted to examine the geographical distribution of the original vending locations, the relocation destination, road connectivity, and surrounding urban functions. This analysis provided spatial context for understanding the relationship between vending activities and the surrounding urban environment. Finally, interview findings and vendors' perceptions were analyzed qualitatively to identify their experiences regarding physical conditions, facility satisfaction, business environments, and customer visitation following relocation. The quantitative and qualitative findings were interpreted together to evaluate the post-relocation conditions in relation to the objectives of the relocation program.

3. Results and Discussion

3.1. Restructuring and relocation sites

Uncontrolled growth of street vendors has generated various spatial-planning problems, such as the use of sidewalks and roadways, deterioration of public-space quality, disruption of pedestrian circulation, and reduced urban environmental comfort. These conditions encouraged the Makassar City Government to formulate more targeted policies for managing street vendors as part of efforts to improve the quality of the urban environment. As an implementation of this policy, the Makassar City Government enacted Makassar City Regional Regulation No. 29 of 2018 concerning the Arrangement and Empowerment of Street Vendors [17]. This regulation provides the basis for managing street vendors by providing business locations that are more orderly, legal, and integrated with the urban spatial system. The restructuring is intended not only to restore public-space functions according to their designated purposes but also to create a more suitable business environment for informal-sector actors.

Table 1. Number of street vendors that already relocated

No.	Relocation Site	Food Vendors, n (%)	Non-Food Vendors, n (%)	Total, n (%)
1	Rappocini	98 (65.3)	52 (34.7)	150 (100.0)
2	Slamet Riyadi	56 (65.1)	30 (34.9)	86 (100.0)
3	Sunu	29 (63.0)	17 (37.0)	46 (100.0)
	Total	183 (64.9)	99 (35.1)	282 (100.0)

A total of 282 relocated street vendors were identified across the three designated relocation sites. Rappocini accommodated the largest proportion of vendors, with 150 vendors (53.2%), followed by Slamet Riyadi with 86 vendors (30.5%) and Sunu with 46 vendors (16.3%). Based on the survey classification, 183 vendors (64.9%) were engaged in food-related activities, while 99 vendors (35.1%) operated non-food businesses. The distribution indicates that food-related vending constituted the dominant business category across the relocation sites (Table 1).

The Karebosi area was selected as one of the priority locations in the management program because it functions as an urban activity center integrating trade, services, government, education, and public-space functions. The high intensity of activity in this area makes Karebosi a strategic location for accommodating informal economic activities while maintaining the quality of public space. Three priority areas were designated as relocation sites for street vendors: Rappocini, Slamet Riyadi, and Sunu (Table 1). These three areas were selected based on the high concentration of street-vending activities before the management program was implemented. Across these locations, a total of 282 vendors were targeted for relocation, with the largest number in Rappocini (150 vendors), followed by Slamet Riyadi (86 vendors) and Sunu (46 vendors). These data indicate that the management program focused on areas with a high density of informal economic activity and was therefore expected to have a more significant impact on improving the quality of the urban environment. Thus, street-vendor management is not viewed merely as an enforcement measure, but as a strategy to integrate the informal sector into the urban spatial structure and support the creation of more orderly, productive, and sustainable public spaces.

The relatively large concentration of vendors in Rappocini indicates that the relocation program was not spatially uniform but responded to differences in the concentration of informal economic activities among the selected areas. The three sites were identified as priority locations within the restructuring program, reflecting the need to accommodate vendors while reducing the pressure of informal commercial activities on public-space functions. The distribution also suggests that the relocation strategy sought to retain informal economic activities within accessible urban areas rather than completely remove them from the urban activity system [18], [19].

From a spatial-planning perspective, this approach is important because street vending is closely associated with the characteristics and availability of urban spaces. Recent research has shown that street vending can occupy transitional or “in-between” spaces and develop different spatial forms depending on the surrounding urban environment [18]. Similarly, studies of urban vending zones emphasize the importance of governance and environmental management in balancing informal economic activities with public-space functions [19]. Therefore, the Makassar relocation program can be understood as a shift from unregulated occupation of public space toward designated and managed commercial spaces.

The concentration of food vendors (64.9%) is also relevant to the spatial function of the relocation sites. Food vending generally requires greater interaction with pedestrians and customers and may contribute to the intensity of activity within public spaces. Research on urban food hubs has similarly highlighted the interaction between formal and informal food-related activities and

urban movement systems [20], [21]. In this context, the relocation of food vendors into designated areas may provide an opportunity to maintain their economic and social functions while reducing conflicts with pedestrian circulation and other public-space uses.

However, relocation alone does not necessarily guarantee successful integration of the informal sector into the urban environment. The effectiveness of restructuring depends on whether the designated sites provide adequate accessibility, infrastructure, business facilities, and customer exposure [22]. This distinction is important because the objective of the policy is not simply to move vendors from one location to another, but to establish a spatial arrangement in which informal economic activities can operate within an organized urban environment. Consequently, the subsequent analysis examines how the relocation affected physical environmental quality, accessibility, supporting facilities, and the business conditions of relocated vendors.

3.2. Spatial transformation of activities and the area environment

The relocation of street-vending activities established a designated trading environment in the Karebosi area. This section examines the existing spatial organization and environmental conditions of the relocation area, focusing on physical environmental quality, accessibility, and supporting facilities. The assessment is based on field observations, spatial mapping, and vendors' perceptions of their current trading environment. The transformation was assessed through three main dimensions: physical environmental quality, accessibility, and supporting facilities. These dimensions were used to examine whether the relocation program created a more organized environment while maintaining the function of the sites as spaces for informal economic activities. The relocation transformed vending activities from predominantly roadside and sidewalk-based operations into designated trading spaces. The provision of fixed or permanent kiosks created greater certainty regarding business locations and contributed to a more organized spatial arrangement. Based on the field survey, the relocated vendors operated within designated areas rather than occupying pedestrian sidewalks or roadways. This spatial reorganization reduced the direct conflict between vending activities and pedestrian or vehicular movement and provided a more defined boundary between commercial and circulation functions. These findings indicate that the restructuring primarily produced a physical and spatial improvement in the organization of informal commercial activities.

Accessibility remained an important factor in determining the potential success of the relocation sites. The three relocation areas were connected to surrounding urban activities, including commercial areas, offices, educational facilities, and residential neighborhoods [23]. The continued accessibility of these locations allowed vendors to remain connected to potential customers and surrounding activity centers. Thus, the relocation strategy did not simply remove vendors from the former public spaces but repositioned them within locations that could continue to support economic activities. This finding is consistent with research emphasizing that the spatial configuration and surrounding urban context influence the functioning of street-vending activities [18]. Supporting facilities. The relocation areas were also provided with facilities intended to support daily vending activities, including electricity, clean water, trading stalls, washing facilities, and eating spaces. These facilities represented an important difference from informal vending conditions on sidewalks and roadsides, where basic business infrastructure was more dependent on individual vendors [24]. The provision of shared or government-supported facilities therefore contributed to the formalization of the physical setting without necessarily eliminating the informal character of the businesses. Similar studies have emphasized that effective management of urban vending requires attention not only to regulation and spatial control but also to environmental and infrastructural conditions within designated vending areas [19].

3.2.1. Improvement of the physical quality of the area

Field observations identified the presence of designated kiosks with relatively uniform forms, dimensions, and visual characteristics in the Karebosi relocation area. This arrangement provides a more consistent physical appearance and a clearly defined space for vendors to conduct their trading activities. The provision of designated kiosks also establishes a more organized spatial arrangement of vending activities. However, in the absence of systematic pre-relocation measurements, these observations describe the existing physical conditions rather than demonstrate an objectively measured improvement in environmental quality. The presence of permanent kiosks represents a significant change from the previous condition, when vendors used sidewalks and roadways as places of business, as shown in Fig. 3. With more representative facilities, the relocation area has developed into part of a commercial area that supports community economic activities without reducing the function of public space.

Based on the retrospective assessments of the 64 surveyed vendors, 52 respondents (81.3%) perceived the physical condition of their current trading spaces to be better than that of their previous locations. Meanwhile, 8 respondents (12.5%) reported no substantial difference, while 4 (6.3%) perceived a deterioration in physical conditions. These findings reflect vendors' subjective comparisons based on their experiences before and after relocation, rather than results from standardized physical measurements conducted at both locations. Therefore, the findings indicate a predominantly positive perception of the current trading environment among surveyed vendors, but do not establish an objectively measured improvement in physical quality.

The field observations further indicate that the relocation areas provided clearer spatial boundaries for vending activities. Government-provided trading stalls, access to basic utilities, and designated spaces for business activities differentiated the relocation areas from the previous sidewalk and roadside conditions (Table 2). In

particular, the provision of government-supported kiosks and utilities reduced vendors' dependence on temporary or mobile structures. The comparison in Table 2 shows a shift from prohibited or informal occupation of roadside and sidewalk spaces toward government-provided and designated trading areas, with greater certainty regarding land use and business location.



Figure 3. Street vendors in the Karebosi area. (source: Merata.Net)

These findings are consistent with the broader literature on informal urban economies, which emphasizes that the physical characteristics of informal workplaces influence how vendors interact with the surrounding urban environment [12]. The organization of vending spaces can reduce conflicts between commercial activities and other public-space functions while providing vendors with a more stable physical setting for their businesses [25]. Similarly, research on urban vending zones highlights the importance of environmental governance and physical organization in balancing vending activities with the quality and function of urban spaces [19], [25].

Table 2. Arrangement of street-vendor locations and activities

Attributes	Relocation Area (NP)	Relocation Area (P)	Sidewalk (P)	Sidewalk (NP)
Commodity	Processed/traditional food	Non-food goods, snacks, drinks	Coffee, noodles, cigarettes, fuel, Gas	Toys, fruit, juice, meatballs, siomay, potatoes
Zone	City centre	City centre	Main, educational, commercial areas	Main, educational, commercial areas
Land tenure	Government-provided	Government-provided	Unauthorized	Unauthorized
Mobility	Fixed	Fixed	Stationary/ mobile	Mobile
Economic role	Formal; tourism; medium high prices	Formal; daily needs; low medium prices	Informal; daily needs; low–medium prices	Informal; daily needs; low–medium prices
Water supply	Government	Government	Self-provided	Self-provided
Electricity	Government	Government	Self-provided	Self-provided
Washing facilities	Government	Government	Self-provided	Self-provided
Trading stall	Government-provided	Government-provided	Self-provided kiosk	Pushcart/rack /tricycle cart
Annual fee	Free/subsidized	Free/subsidized	Rental/other	–
Eating space	2 tables, 8 chairs	1 table, 4 chairs	3 tables, 12 chairs	–

However, the positive physical assessment should not be interpreted as evidence that relocation automatically improves all aspects of vendors' livelihoods. Physical improvement and economic improvement represent different dimensions of relocation outcomes. A standardized kiosk and better infrastructure may provide greater business-space certainty, but the economic performance of vendors remains dependent on factors such as customer flows, accessibility, business type, and market demand. This distinction is important because the subsequent analysis shows that improvements in the physical environment were not necessarily accompanied by equivalent improvements in vendors' income.

3.2.2. Improvement of the physical quality of the area

Accessibility is one of the main factors determining the success of a relocation area. The study site is located in an area with high activity intensity and is surrounded by various urban functions, including trade and service areas, offices, educational areas, and high-density residential areas. Accessibility was generally perceived positively by the surveyed vendors.

These conditions make the area easily accessible from different parts of Makassar City through an adequate road network and transportation system. The strategic location allows the relocation area to remain attractive to visitors, enabling vendors' economic activities to continue sustainably. Its proximity to urban activity centers also strengthens the relationship between the informal sector and the formal economic activities developing in the area.

3.2.3. Improvement of facilities and the business environment

In addition to physical restructuring and accessibility improvements, the quality of the area was enhanced through the provision of various supporting facilities for trading activities. These facilities include electricity networks, clean water, parking areas, and legal authorization for using kiosks as business premises. The availability of these facilities provides vendors with greater certainty in operating their businesses and reduces the risk of eviction that they previously faced when selling in public spaces not designated for commercial activities [26], [27]. The restructuring of the area also encouraged the establishment of a more organized business system through zoning arrangements, commodity types, business-building forms, and spatial capacity adjusted to the characteristics of trading activities (Table 2). The resulting business environment not only supports improvements in the physical quality of the area but also strengthens the relationship between informal economic activities and the urban spatial structure as a whole.

3.3. Condition of street vendors

Regarding business duration (Table 3), 14 respondents (21.9%) had operated for less than one year, 17 (26.6%) for 1–2 years, 22 (34.4%) for more than two years, and 11 (17.2%) for more than three years. Thus, 33 respondents (51.6%) had been operating for more than two years,

indicating that more than half of the surveyed vendors had relatively established businesses at the relocation sites. Monthly income varied considerably across the surveyed vendors. Overall, 7 respondents (10.9%) reported monthly incomes below IDR 1 million, 27 (42.2%) reported IDR 1–2 million, 23 (35.9%) reported IDR 2–3 million, and 7 (10.9%) reported IDR 3–4 million. No respondents reported monthly income between IDR 4–5 million. Thus, 50 respondents (78.1%) reported monthly incomes between IDR 1 and 3 million. Food-related vendors generally reported higher income levels than non-food vendors. Among food vendors, 16 respondents (43.2%) reported incomes of IDR 2–3 million and 7 (18.9%) reported IDR 3–4 million. In contrast, 15 non-food vendors (55.6%) reported incomes of IDR 1–2 million, while none reported incomes above IDR 3 million (Table 3).

The provision of permanent kiosks with more adequate dimensions enables vendors to conduct their business activities more efficiently than when they used sidewalks and roadways as selling locations. In addition to improving comfort, supporting facilities such as electricity, clean water, parking areas, and other environmental infrastructure also create more suitable business conditions and support the continuity of trading activities.

Table 3. Duration of selling activities and income of street vendors in the Karebosi Area

Variable	Category	Processed Food n (%)	Non-Food n (%)	Total n (%)
Vending duration	< 1 year	11 (29.7)	3 (11.1)	14 (21.9)
	1–2 years	8 (21.6)	9 (33.3)	17 (26.6)
	2–3 years	12 (32.4)	10 (37.0)	22 (34.4)
	> 3 years	6 (16.2)	5 (18.5)	11 (17.2)
Monthly income (IDR)	< 1 million	2 (5.4)	5 (18.5)	7 (10.9)
	1–2 million	12 (32.4)	15 (55.6)	27 (42.2)
	2–3 million	16 (43.2)	7 (25.9)	23 (35.9)
	3–4 million	7 (18.9)	0 (0.0)	7 (10.9)
Total		37 (100.0)	27 (100.0)	64 (100.0)

In general, vendors reported a high level of satisfaction with the facilities available at the relocation area compared with their previous business locations. The changes were particularly evident in the improved physical quality of kiosks, the availability of supporting infrastructure, and a more organized business environment, which provided a greater sense of safety and comfort in conducting trading activities (Fig. 4). This condition indicates that the restructuring of the area not only improves the quality of the physical space but also enhances the working environment for informal-sector actors.

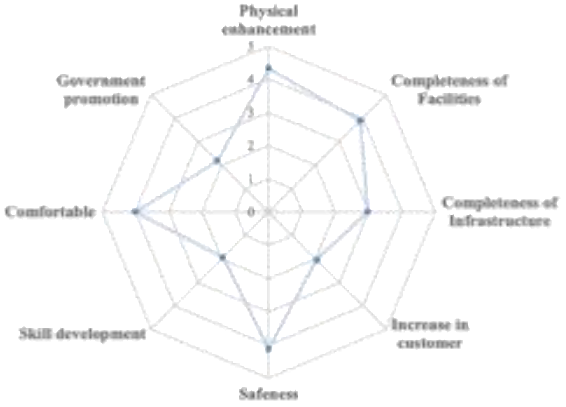


Figure 4. Street-vendor response graph

Nevertheless, the results show that improvements in the quality of the business environment have not been fully accompanied by improvements in vendors' economic conditions, as shown in Table 3. This condition indicates that improvements in the physical quality of the area do not automatically improve the economic performance of business operators. One factor influencing this condition is the suboptimal number of visitors to the relocation area. Interviews showed that area promotion remains relatively limited, so the level of public visitation has not increased significantly [28]. Consequently, the economic potential expected from the restructuring process has not yet been fully experienced by all vendors, particularly those selling non-food commodities. In contrast, vendors selling food and beverages tended to earn higher incomes than other business groups.

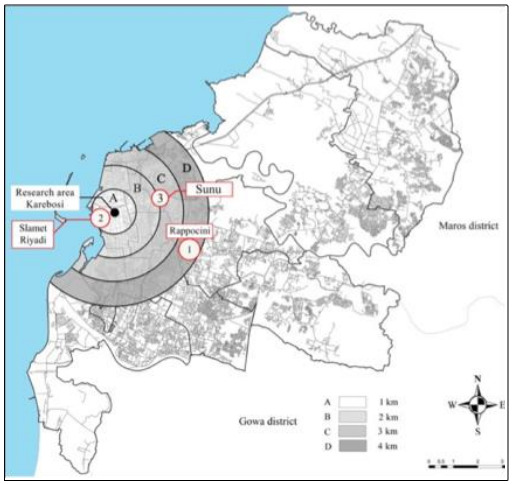


Figure 5. Street-vendor relocation distance. (source: OpenStreetMap Contributors)

The results also show that most relocated vendors still choose business locations close to their residences or previous trading locations. This phenomenon indicates that spatial proximity between the business location and residential area is one of the main considerations in selecting a trading location (Fig. 5). Thus, location remains a highly important factor determining the sustainability of vendors' economic activities after relocation.

The restructuring of the area has successfully improved the quality of the business environment through the provision of better facilities, a more organized environment, and greater certainty regarding business space [29]. However, the success of the area's transformation has not yet been fully reflected in improvements in vendors' economic welfare. Therefore, the sustainability of the management program requires a more comprehensive approach integrating improvements in the physical quality of the area, strengthening the capacity of business operators, area-promotion strategies, and continuous post-restructuring evaluation. This approach is expected to strengthen the contribution of the informal sector to local economic development while improving the quality of urban public space.

However, this study has several limitations. First, systematic quantitative baseline data describing the physical and spatial conditions of the original vending locations before relocation were unavailable. Consequently, the study could not objectively quantify changes in environmental quality, accessibility, or supporting facilities between the pre- and post-relocation conditions. Comparisons with previous locations were therefore based on vendors' retrospective perceptions, which may be subject to recall bias. Second, the survey involved 64 purposively selected vendors out of a total population of 282, and the findings should therefore not be interpreted as statistically representative of all relocated vendors. Future research could adopt a longitudinal approach using standardized spatial and environmental indicators measured before and after relocation to provide a more robust assessment of relocation outcomes.

5. Conclusion

The spatial transformation of street-vendor areas can improve the quality of the business environment and strengthen the integration of the informal sector into urban public space through physical restructuring, improved accessibility, and the provision of supporting facilities. Although its impact on increasing vendors' income has not been significant, this study shows that the success of area restructuring depends on the synergy between spatial quality, business capacity strengthening, and sustainable area management. These findings contribute to the development of more inclusive strategies for managing the informal sector in support of sustainable urban development. This approach provides an important foundation for creating public spaces that are more productive, inclusive, and competitive.

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