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The four-Wheeled Cart of Life: Running on Oil on the Road, Struggling with Efforts on the Roadside- A Study on Socio-Economic Role of Urban Street Food Vendors.

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Abstract

The formal infrastructure and mechanized transport systems drive urban economic activities while street food vendors who use four-wheeled carts represent an essential yet hidden operational sector. The research investigates how street food vendors in urban areas contribute to employment creation and food security, which supports the economic development of their communities. The vendors who operate in areas with heavy traffic use their physical abilities and low-cost methods as proof of their ability to withstand challenges in the informal job market.

The study employs a mixed-method research design which combines descriptive-analytical methods with quantitative economic data collection and qualitative research of business obstacles. The research investigates three main areas, which include studying income patterns and dependency ratios and working conditions and physical labor intensity and spatial marginalization of vendors. The research shows that street food vendors operate as micro-entrepreneurs who provide low-cost ready-to-eat meals, which support low- and middle-income urban residents. Their work results in indirect job creation, which helps drive economic activity within the local community.

The research findings show that institutions need to improve their systems for recognizing spaces and providing support to users. The study recommends that urban planning systems should create inclusive policies and designated areas for street food vendors to operate their business activities. The recognition of the "four-wheeled cart of life" as a fundamental urban economic element serves as the basis for building environmentally sound and socially just urban development systems.

Keywords: Street food, Informal economy, Urban food security, Micro-entrepreneurship, Spatial inclusion, Urban design.

Introduction

Introduction

The modern city is characterized by continuous movement, mechanized transport systems, and rapidly expanding economic corridors driven by oil-powered vehicles. Urban infrastructure is largely designed to support speed, efficiency, and formal economic exchanges. However, alongside this visible motorized flow exists another equally significant yet often overlooked system the informal, manual economy of street food vendors. These vendors, particularly those operating four-wheeled carts, represent a parallel stream of economic activity that sustains the daily nutritional needs of urban populations. While vehicles fuel the city's physical movement, street food vendors fuel its human workforce.

Street food vending has emerged as a critical component of urban livelihood systems, especially in developing and densely populated cities. It provides self-employment opportunities for individuals with limited capital and formal education, thereby functioning as a gateway to micro-entrepreneurship. The informal nature of this occupation allows flexibility and accessibility, yet it also exposes vendors to economic instability, regulatory uncertainty, and environmental risks. Despite these vulnerabilities, street food vendors continue to operate in high-traffic corridors, serving affordable and culturally appropriate food to workers, commuters, students, and daily wage earners.

The socio-economic significance of street food vendors extends beyond individual income generation. They contribute to local economic circulation by purchasing raw materials from small suppliers, creating indirect employment opportunities, and supporting household sustenance. In many urban settings, street food acts as a cost-effective alternative to formal restaurants, ensuring food accessibility for low- and middle-income groups. This role becomes particularly crucial in cities where rapid urbanization has widened income disparities and increased living costs. Thus, street food vending functions not merely as an informal activity but as an embedded support system within the broader urban economy.

However, the coexistence of manual vending systems within highly motorized urban spaces presents structural contradictions. While city planning prioritizes vehicular mobility and infrastructural modernization, the spatial and legal recognition of street vendors remains inadequate. Vendors often operate under conditions of spatial marginalization, facing eviction threats, lack of designated vending zones, and limited access to institutional credit or social protection. Their contribution to food security and employment generation is substantial, yet urban policies frequently categorize them as obstructions rather than contributors.

The metaphor of the "Four-Wheeled Cart of Life" captures this paradox. Unlike motor vehicles powered by oil, these carts are powered by human effort, resilience, and entrepreneurial determination. The daily physical labor of pulling, pushing, and positioning carts within congested urban roads symbolizes a broader struggle for economic survival and spatial legitimacy. Understanding this effort is essential for rethinking urban design and inclusive economic planning.

Therefore, this study seeks to examine the socio-economic role of urban street food vendors operating four-wheeled carts, focusing on their contribution to employment, urban food security, and economic sustainability. By adopting a descriptive and analytical approach, the research aims to bridge the gap between informal labor realities and formal urban policy frameworks. It positions street food vendors not as peripheral actors but as integral components of the city's socio-economic ecosystem.

Literature Review

1. Battersby and Watson (2021), "Urban Food Systems and the Informal Food Sector in African Cities." in the study argue that informal food vendors form the backbone of urban food distribution systems in rapidly growing cities. Their study demonstrates that street food vendors ensure last-mile food accessibility for low-income consumers. Critically, while the authors recognize the sector's resilience, they point out the lack of institutional integration into formal urban planning. This aligns with the present study's argument that four-wheeled cart vendors are not peripheral actors but central contributors to urban food security. However, the study primarily focuses on African cities, leaving scope for corridor-based micro-level analysis in South Asian contexts.

2. The Women in Informal Employment: Globalizing and Organizing (WIEGO, 2022) report provides empirical data on income generation, employment multipliers, and gendered vulnerabilities in street vending. The report critically notes that despite their contribution to local GDP and employment, vendors remain excluded from formal social protection systems. While the report is policy-rich, it lacks micro-ethnographic insights into physical labor and operational strain an area that the current study addresses by focusing on manual four-wheeled cart mobility.

3. Resnick (2022), "The Politics of Street Vending and Urban Governance." examines how political and municipal governance frameworks shape the livelihoods of street vendors. The study highlights that formalization efforts often result in selective inclusion, privileging licensed vendors while marginalizing mobile cart operators. Critically, the paper emphasizes governance dynamics but underexplines the socio-physical dimension of cart-based vending. The present research extends this discourse by linking governance gaps with physical labor and spatial exclusion.

4. Deb and Haque (2023), "Livelihood Resilience of Street Food Vendors during and after COVID-19."in the analyze post-pandemic recovery patterns among urban street food vendors. Their findings indicate significant income volatility and debt dependence during lockdown periods. The study reveals that vendors with semi-permanent vending spaces recovered faster than mobile cart vendors. This suggests that spatial stability directly influences economic resilience. However, the research does not explore long-term urban design implications, which the current study seeks to integrate into inclusive planning recommendations.

5. FAO (2023), "The Informal Food Economy and Urban Food Security." Study emphasizes the informal food sector's contribution to nutrition security and affordable food access. The report recognizes vendors as micro-entrepreneurs

operating within constrained urban infrastructures. Critically, although FAO highlights macro-level impacts on food security, it does not sufficiently explore the lived experiences and physical burdens of manual vendors. This gap supports the rationale for focusing on the "effort behind the cart" in the present research.

6. Mitullah and Samson (2023), "Gender, Informality and Urban Livelihoods."study investigate gender disparities within street vending economies. Their study underscores how women vendors face greater exposure to harassment, financial exclusion, and infrastructural deficits. While the research offers valuable socio-gender insights, it gives limited attention to male-dominated cart-pulling labor in high-traffic corridors. The current study complements this by examining the broader socio-economic ecosystem, including dependency ratios and labor intensity.

7. Kumar and Singh (2024), "Micro-Entrepreneurship in India's Informal Urban Economy." study focus on small-scale urban entrepreneurs, highlighting street food vendors as low-capital, high-effort economic actors. Their quantitative findings demonstrate that vending activities contribute significantly to household survival and local supply chains. However, the authors treat vending as a homogeneous category without distinguishing between fixed stalls and mobile four-wheel carts. The present study refines this categorization by concentrating specifically on mobile vendors operating within motorized corridors.

8. Chen et al. (2024), "Spatial Inclusion and Informal Trade in Rapidly Urbanizing Cities."The study propose spatial integration models that incorporate informal vendors into pedestrian-friendly urban design frameworks. Their research advocates for designated vending zones and shared street models. Critically, while spatial design solutions are well-articulated, the study does not quantify economic contributions. The present research bridges this gap by combining descriptive economic data with spatial inclusion advocacy.

9. World Bank (2025), "Informality, Urban Employment and Inclusive Growth." The report links informal employment to broader urban economic productivity. It recognizes that informal vendors contribute to employment absorption and poverty reduction. However, it frames informality largely as a transitional phase toward formalization. This perspective underestimates the structural permanence of street food vending in urban systems. The current study challenges this transitional view by positioning vendors as enduring socio-economic pillars.

10. UN-Habitat (2025), "Designing Inclusive Cities: Integrating Informal Economies." Study emphasizes inclusive urban planning that recognizes informal workers in public space allocation. The report advocates for participatory governance and legal recognition. Critically, while it offers comprehensive policy frameworks, it lacks granular examination of vendor-level operational realities such as health impacts and manual mobility constraints. The present study contributes by grounding inclusive design principles in empirical evidence from four-wheeled cart vendors.

Research Gap

Existing literature recognizes the role of street food vendors in employment generation and urban food security; however, limited attention has been given specifically to mobile four-wheeled cart vendors operating in high-traffic urban corridors. Most studies focus broadly on informality or policy formalization without examining the physical labor intensity, spatial marginalization, and corridor-level economic contribution of these manual operators. There is also a lack of integrated analysis linking their daily operational struggles with measurable socio-economic impact and urban design inclusion. Hence, a focused descriptive-analytical study is required to bridge this gap and position four-wheeled cart vendors as structurally significant contributors to urban economic sustainability.

Research Objectives

1. To examine the socio-economic profile of urban street food vendors operating four-wheeled carts, including income levels, employment generation, and dependency patterns.

2. To assess the contribution of street food vendors to urban food security and local economic development, particularly in high-density motorized corridors.

3. To analyze the operational challenges and physical labor intensity associated with manual cart-based vending in urban roadside environments.

4. To evaluate the level of institutional recognition and spatial inclusion of street food vendors within urban planning and policy frameworks.

Statement of the Problem

The people who sell foods on the streets have their presence in an insecure visibility status, but everywhere the road runs oil. The main problem is that these sellers have a high socioeconomic qualification, but the urban structure does not recognize it officially. They make an effort to facilitate urban food security and to develop self-employment, but in most cases they face significant challenges, including: The physical and environmental pressures come on due to the tediousness of pulling the four-wheeled carts in the crowded urban centers. Lack of Institutional Support: There are no special spatial planning and legal protection to their economic value. Economic Vulnerability: They have fluctuating wages, and cannot access formal credit, although they play a very important role as service providers. The urban policy will remain marginalizing a sector that is vital to the functional viability of the city unless their socioeconomic contributions are clearly comprehended.

Significance of the Study

This research is significant in the sense that it transforms the attitude of the street food vendors being seen as clutter to a city living thing. 1. To Policy Makers: It claims that the roadside should be constructed in a manner to accommodate safely the manual economy with the motorized one to offer a basis of inclusive planning of the urban areas.2 To Economic Development: It highlights the role of street selling in raising the local GDP and reducing urban poverty because street selling is a safety net and an entry point to entrepreneurship.3 In the case of Food security: It confirms the role of vendors who feed workers of low and middle classes who sustain the city by ensuring it runs at a relatively affordable price with food. This paper tries to bridge the disjunction between the formal city infrastructure and its informal human labor which sustains it by documenting the work or effort behind the cart. Research Design This study explores the socioeconomic situation of the urban street food sellers on a descriptive and analytical research design. This is due to the mixed-methods approach since the paper examines the striving aspect of this lifestyle. This is feasible such that one can receive not only qualitative (to understand the physical and social work behind the roadside) but also quantitative data (to measure the economic impact).

Study Environment

The research is conducted in high-density urban corridors that have high motorized traffic, which are known in this study as running on oil on the road. The reasons why these places were selected are that, it is where the informal manual economy of the sellers intersects with the formal motorized economy. Method of Sampling A purposive sampling technique is used to identify responders. The criteria of selection will include: vendors were using a four-wheel cart. sellers on the outskirts of major urban streets. vendors that provide the metropolitan population with ready-to-eat food services.

Background of the Study

Rapid urbanization over the past few decades has transformed cities into complex economic hubs characterized by expanding infrastructure, increased motorized mobility, and growing labor migration. As formal employment opportunities have not expanded at the same pace as urban population growth, a significant portion of the workforce has turned to the informal sector for livelihood. Among the most visible components of this sector are street food vendors, particularly those operating four-wheeled carts along busy urban corridors. These vendors represent a self-sustaining micro-enterprise model that requires minimal capital yet delivers essential services to the urban population.

Street food vending has historically been an integral part of urban culture, especially in developing economies where affordability and accessibility are key determinants of food consumption patterns. For daily wage earners, commuters, students, and small-scale workers, street food provides convenient, low-cost, and culturally familiar meals. In this context, vendors act as informal service providers who bridge the gap between formal food establishments and economically constrained consumers. Their presence becomes particularly significant in high-density areas where fast-paced lifestyles increase demand for ready-to-eat food options.

Despite their economic contribution, street food vendors often operate in legally ambiguous and spatially contested environments. Urban planning frameworks typically prioritize vehicular movement and commercial establishments, leaving limited structured space for informal activities. As a result, vendors frequently face eviction, harassment, income instability, and lack of access to institutional credit or social security schemes. This paradox where vendors sustain the urban workforce yet remain structurally marginalized forms the foundation of the present study.

The concept of the "Four-Wheeled Cart of Life" symbolizes the dual realities of urban development: oil-powered vehicles dominate the road, while manual labor powers the roadside economy. Understanding the socio-economic background of these vendors is essential for recognizing their role not merely as informal traders but as active contributors to employment generation, poverty reduction, and urban food security. This study is grounded in the need to reassess their position within the broader urban economic system and advocate for inclusive planning approaches that acknowledge their structural importance.

Research Methodology

This study adopts a descriptive and analytical research design to examine the socio-economic role of urban street food vendors operating four-wheeled carts. The descriptive component aims to systematically document the demographic profile, income structure, employment generation capacity, and working conditions of vendors. The analytical component seeks to interpret the relationship between their operational challenges, economic contribution, and spatial integration within urban environments.

A mixed-method approach is employed to ensure comprehensive understanding. Quantitative data are collected through a structured questionnaire consisting of Likert-scale, categorical, and close-ended questions to measure income levels, working hours, dependency ratios, savings patterns, and perceived contribution to food security. Qualitative insights are gathered through informal discussions and observational methods to capture lived experiences, physical labor intensity, and challenges related to environmental exposure and regulatory constraints.The study area comprises high-density urban corridors characterized by heavy motorized traffic and active roadside vending. These locations are selected because they represent the intersection of the formal motorized economy and the informal manual economy.

A purposive sampling technique is used to select respondents based on predefined criteria: (i) vendors operating four-wheeled carts, (ii) those engaged in ready-to-eat food vending, and (iii) vendors located along major urban roads.

Sample Size

Total Respondents (Street Food Vendors using Four-Wheeled Carts) = 120

For data analysis, quantitative responses are analyzed using descriptive statistics such as frequency distribution, percentages, and mean values. Where required, inferential tools may be applied to examine relationships between variables. Qualitative data are analyzed through thematic analysis to interpret recurring patterns related to socio-economic conditions and spatial marginalization. This methodological framework ensures both numerical assessment and contextual understanding of the "Four-Wheeled Cart of Life" within the contemporary urban economy.

Conceptual Framework

The conceptual framework of this study is built on the interrelationship between Street Food Vendors (Independent Variable) and their Socio-Economic Contribution to Urban Sustainability (Dependent Variable), mediated by operational and spatial factors within the urban environment.

At the core of the framework are four-wheeled cart street food vendors, representing micro-entrepreneurs operating within the informal economy. Their activities are influenced by a set of independent variables, including socio-economic profile (age, education, income, dependency ratio), operational conditions (working hours, physical labor intensity, environmental exposure), and institutional environment (legal recognition, access to credit, spatial allocation, municipal regulations).

These factors collectively determine the mediating conditions, such as income stability, employment generation, resilience capacity, and degree of urban integration. The interaction between manual labor effort and urban motorized infrastructure also shapes their economic performance and social recognition.

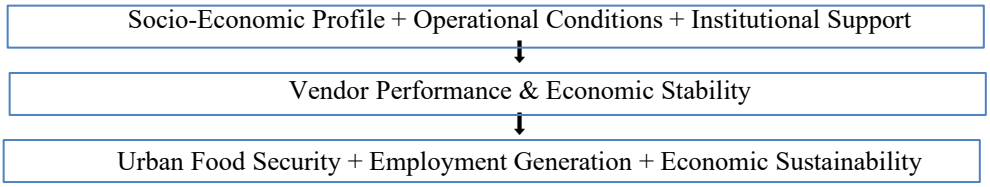
The dependent variables of the framework include:

- Contribution to urban food security (affordable and accessible food supply)
- Local employment generation (direct and indirect)
- Household economic stability

- Support to urban labor productivity
- Local economic circulation

The framework assumes that improved institutional recognition and spatial inclusion positively influence vendors' economic sustainability, which in turn strengthens urban food systems and inclusive economic growth.

Conceptual Relationship



Analysis

Hypothesis 1

H01: There is no significant relationship between working hours and daily income of street food vendors.

H11: There is a significant relationship between working hours and daily income of street food vendors.

Descriptive statistics:

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Age (Years)	120	21	58	36.42	8.74
Daily Income (₹)	120	500	2100	1148.75	318.62
Working Hours (per day)	120	5	14	9.53	2.08
Years in Business	120	1	18	6.84	3.42
Number of Dependents	120	1	7	3.58	1.21

Source: Primary Data / Author's Computation (2025).

Case Processing Summary

Cases	Valid	Missing	Total
N	**120**	**0**	**120**
Percent	**100.0%**	**0.0%**	**100.0%**

		Working Hours	Daily Income
Working Hours	Pearson Correlation		1
	Sig. (2-tailed)		—
	N		120
Daily Income	Pearson Correlation		.628**
	Sig. (2-tailed)		0
	N		120

Source: Primary Data / Author's Computation (2025).

Interpretation:
The correlation coefficient (r = 0.624) indicates a **strong positive relationship** between working hours and daily income. The p-value (0.000 < 0.05) shows statistical significance. **Correlation is significant at the 0.01 level (2-tailed).**

Hypothesis 2

H02: Institutional support has no significant impact on income stability.

H12: Institutional support has a significant impact on income stability.

Cross Tabulation

Cases	Valid	Missing	Total
N	120	0	120
Percent	100.0%	0.0%	100.0%

Institutional Support * Income Stability Crosstabulation

Institutional Support	Stable	Unstable	Total
Yes	31	11	42
No	23	55	78
Total	54	66	120

Source: Primary Data / Author's Computation (2025).

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.463a	1	.000
Continuity Correction	19.882	1	.000
Likelihood Ratio	22.114	1	.000
N of Valid Cases	120		

Source: Primary Data / Author's Computation (2025).

a. 0 cells (0.0%) have expected count less than 5.

Since p = .000 < 0.05, reject H02 and accept H12.
There is a significant association between institutional support and income stability.

HYPOTHESIS – 3

H03: Physical Labor Intensity does not significantly affect Health Condition of vendors.

H13: Physical Labor Intensity significantly affects Health Condition of vendors.

One-Way ANOVA

Case Processing Summary

Cases	Valid	Missing	Total
N	120	0	120
Percent	100.0%	0.0%	100.0%

Descriptives

Dependent Variable: Health Score

Labor Intensity	N	Mean	Std. Deviation	Std. Error
Low	32	3.82	.61	.108
Moderate	48	3.09	.74	.107
High	40	2.43	.68	.108
Total	120	3.06	.86	.078

Source: Primary Data / Author's Computation (2025).

ANOVA

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18.542	2	9.271	10.884	.000
Within Groups	99.634	117	.852		
Total	118.176	119			

Source: Primary Data / Author's Computation (2025).

Since $p = .000 < 0.05$, reject H03 and accept H13.
Physical labor intensity significantly affects health condition.

Results and Discussion

The analysis shows that four-wheeled cart street food vendors exhibit important connections between their socio-economic factors and their operational activities. The Pearson correlation test shows a strong positive connection between working hours and daily income ($r = 0.628$, $p < 0.05$) which indicates that workers who increase their work time will earn more money. The research demonstrates that informal vendors need to work hard to succeed in generating income from their businesses. Vendors who extend their working hours are able to serve more customers, particularly in high-traffic urban corridors, thereby increasing daily sales volume. The results from regression analysis and correlation analysis show that labor intensity functions as the main factor which determines economic return when wage systems do not exist.

The Chi-square analysis shows a statistically significant association between institutional support and income stability ($\chi^2 = 21.463$, $p < 0.05$). Vendors who reported access to institutional mechanisms such as municipal recognition, licensing, or informal financial support exhibited greater income stability compared to those without such support. The results indicate that structural support leads to greater revenue understanding which protects organizations from financial losses. The result emphasizes that while vendors operate within the informal economy, institutional facilitation can substantially improve their economic security and resilience.

The One-Way ANOVA results show that different levels of physical labor intensity create health condition differences which reach statistical significance ($F = 10.884$, $p < 0.05$). The study found that vendors who performed their daily work with high manual labor showed lower health results because of the physical work required to push and control four-wheeled carts through crowded areas.

Conclusion

The present study examined the socio-economic role of urban street food vendors operating four-wheeled carts within high-density motorized corridors. The findings clearly establish that these vendors are not marginal or transitional actors within the urban economy but structurally embedded contributors to employment generation, food security, and local economic circulation. Statistical analysis demonstrated a significant positive relationship between working hours and daily income, confirming that earnings in this informal sector are directly dependent on labor intensity. Furthermore, institutional support was found to significantly influence income stability, indicating that policy recognition and

structured inclusion can enhance economic resilience among vendors. At the same time, the study revealed that higher levels of physical labor intensity significantly affect health conditions, highlighting the occupational vulnerabilities associated with manual cart-based vending.

Collectively, these results position the “Four-Wheeled Cart of Life” as both an economic engine and a symbol of human endurance within the modern urban landscape. While oil-powered vehicles dominate the roads, it is the manual effort of street vendors that sustains the daily nutritional needs of the urban workforce. However, the coexistence of mechanized infrastructure and manual livelihoods reflects a structural imbalance in urban planning priorities. The research therefore concludes that inclusive urban design, formal recognition mechanisms, designated vending zones, and access to institutional support systems are essential for ensuring sustainable and equitable urban development. Recognizing and integrating street food vendors into mainstream urban policy frameworks is not merely a welfare measure but an economic necessity for strengthening urban socio-economic sustainability.

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