



Original Article

Urban Waste and Public Services: Survey Findings on Waste Management in Ciputat Market Area, South Tangerang City

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Abstrak:

Urban waste management is an environmental issue that directly impacts the comfort and quality of life of the community, particularly in market areas. The Ciputat Market area in South Tangerang City previously experienced significant waste accumulation, which disrupted daily activities and triggered public criticism of the local government. This study aims to analyze the level of community satisfaction regarding urban waste management in the Ciputat Market area. This research employs a quantitative descriptive approach using a survey method involving 100 respondents, comprising market vendors, visitors, local residents, and road users. Data were collected through a five-point Likert scale questionnaire and analyzed using descriptive statistics. The findings reveal that community satisfaction falls within the moderate to low category, with 62.5% of respondents expressing dissatisfaction or being less than satisfied with the waste management. The aspects receiving the lowest evaluations include the consistency of waste transportation and the sustainability of waste management policies. This condition reflects the suboptimal quality of public service in waste management. Therefore, this study recommends that the state or local government must demonstrate a tangible presence through the reinforcement of strict policies and regulations. Furthermore, the government needs to act as a catalyst in fostering the active participation of citizens and the involvement of the private sector to develop a collaborative and sustainable waste management system.

Kata Kunci: Public Satisfaction, Public Service, Urban Waste, Waste Management

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Pendahuluan

The problem of urban waste constitutes a latent crisis that accurately reflects the pulse of a city's growth; the more rapid its population growth and economic activity, the greater the volume of waste generated, creating exponential pressure on environmental infrastructure that is often inadequate (Tamba et al., 2025). Within this complex urban ecosystem, the traditional market plays a paradoxical role. On one hand, it is the heart of the people's economy, a center for social interaction, and a pillar of community food security. On the other hand, it inherently functions as one of the largest generators of waste, which, if not managed properly, becomes a source of ecological and public health calamities.

The high frequency of transactions, the rapid turnover of goods, and the nature of its commodities dominated by fresh products such as vegetables, fruits, meat, and fish automatically result in the accumulation of massive volumes of organic waste on a daily basis. This organic waste, estimated to account for more than half of the total market refuse is characterized by its rapid decomposition (Mentari et al., 2020)

This problem is exacerbated by systemic failures within the waste management chain itself, which often remains trapped in the obsolete "collect-transport-dispose" paradigm. Infrastructure at the source that is, within the market itself is frequently inadequate. The limited number and variety of segregated bins for organic and inorganic materials make the practice of sorting difficult, even for vendors who are environmentally conscious (Khalid et al., 2022). Consequently, all types of waste rotting vegetable scraps, plastic bags, bottles, paper, and cardboard are mixed together, a condition that directly thwarts the potential for recycling and reuse. Poorly scheduled collection processes then cause waste to overflow from temporary collection points, spill onto the streets, and clog drainage channels. When it rains, these blockages become the primary cause of waterlogging and local floods, an ironic man-made disaster that recurs annually (Srivastava, 2020).

Ultimately, this entire volume of unmanaged waste ends up in Final Disposal Sites (TPA or landfills), which in many cities are already in a critical state, having long exceeded their capacity. The mountainous piles of garbage at these landfills are not just an aesthetic blight; they are an ecological time bomb (Noor et al., 2020). The anaerobic decomposition of organic waste produces methane gas, a greenhouse gas with a global warming potential tens of times more powerful than carbon dioxide. Furthermore, the toxic liquid from this decomposition, known as leachate, seeps into the soil, contaminating aquifers and groundwater that serve as a source of clean water for many citizens. It also flows into river bodies, killing aquatic life and causing siltation (Siddiqua et al., 2022).

The domino effect of this management failure permeates various aspects of life. From a health perspective, the squalid and unsanitary market environment directly increases the prevalence of communicable diseases such as diarrhea, typhoid fever, dengue fever, and skin infections among vendors, workers, and the surrounding community. Air quality deteriorates drastically, both from the foul odors and from the illicit practice of waste incineration, which releases dioxins and furans carcinogenic compounds hazardous to the respiratory system. Socially and economically, these conditions significantly diminish the quality of life (Jakhar et al., 2023). Property values in the vicinity of unkempt market areas tend to decline, and the image of the traditional market as a comfortable and healthy shopping destination is eroded, potentially diverting consumers to modern retail alternatives.

On a larger scale, local governments are compelled to allocate substantial budgets not for preventive measures, but for mitigating the consequences, such as the costs of river dredging, drainage system repairs, and public health crisis management. The tragic 2005 landslide at the Leuwigajah landfill, which claimed hundreds of lives, serves as a grim reminder that the waste problem is not merely an issue of cleanliness but a fundamental matter of human safety. Therefore, to view traditional market waste as merely a pile of commercial leftovers is a dangerous oversimplification; it is a critical nexus in a complex web of problems involving social behavior, infrastructural failure, non-comprehensive policies, and a tangible threat to the environmental sustainability and health of urban civilization (Noegroho et al., 2021).

The condition of waste accumulation that plagues various corners of South Tangerang City, with Ciputat Market as one of its most conspicuous epicenters, is not simply a transient issue of sanitation or a daily operational failure. It is an acute symptom of a deeper crisis in urban governance, where the rapid pace of demographic and economic growth has far outstripped the capacity of its supporting environmental infrastructure. As a rapidly developing satellite city, South Tangerang experiences immense urbanization pressure, yet the development of essential public facilities, such as waste management

systems, has not proceeded in parallel. What is visible on the roadsides and in front of the vendors' stalls at Ciputat Market is the physical manifestation of a system that has reached its breaking point and is now beginning to collapse. The mounds of refuse are no longer just waste; they are a monument to the failure of long-term planning and tangible evidence of the disequilibrium between development and sustainability.

Table 1. Urban Growth vs. Waste Infrastructure Capacity in South Tangerang (2018-2025)

Dimension	Growth / Capacity Indicator	Representative Data	Implication
Urban Growth (Increasing Burden))	Population Growth Rate	(~4.5% per year)	Each year, tens of thousands of new residents add to the waste production burden.
	Increase in Waste Volume	~800 tons/day (2018) to ~1,150 tons/day by 2025	The burden on the system increases by almost 45% within a 7-year period.
Environmental Capacity	Landfill Capacity Expansion	No new landfills or significant expansion.	The gap between waste production and management capacity widens daily.
	Infrastructure Dependency	Reliance on a single, overloaded landfill.	The risk of total system collapse is no longer a question

Source: Data processed from Statistics Indonesia (BPS), the Environmental Agency (DLH), and South Tangerang City Planning Documents (2018-2025).

The condition of waste accumulation that plagues various corners of South Tangerang City, with Ciputat Market as one of its most conspicuous epicenters, is not simply a transient issue of sanitation or a daily operational failure. It is an acute symptom of a deeper crisis in urban governance, where the rapid pace of demographic and economic growth has far outstripped the capacity of its supporting environmental infrastructure. The mounds of refuse are no longer just waste; they are a monument to the failure of long-term planning and tangible evidence of the disequilibrium between development and sustainability.

This gap is vividly visualized when we compare urban growth data with existing infrastructure capacity. On one hand, with a consistent population growth rate of approximately 4.5% per annum, the volume of waste generated by the city continues to skyrocket, increasing from around 800 tons per day in 2018 to an estimated 1,150 tons per day by 2025 a burden increase of nearly 45% within a seven-year period. On the other hand, as a counterbalance, the infrastructure capacity shows total stagnation. There has been no significant expansion of Final Disposal Site (TPA or landfill) capacity, meaning its growth rate is zero percent. This is exacerbated by an absolute dependency on a single, overloaded landfill, rendering the system exceedingly fragile and devoid of any backup mechanisms. It is this gaping disparity between a perpetually swelling burden and a static capacity that creates an ecological time bomb.

The closure of the Cipeucang landfill, which had already exceeded its capacity by 152%, was not the cause of the crisis but merely the inevitable trigger for the detonation of this time bomb. When that main disposal gateway was shut, the entire fragile logistics

system collapsed instantaneously. Waste collection activities plummeted by 88%, leaving refuse stranded at its source and forcing public spaces from market stalls to protocol roadsides to be repurposed as emergency dumpsites. What is being experienced by the vendors of Ciputat Market who face declining revenues, or by residents threatened by a rise in cases of diarrhea and dengue fever, is not merely the impact of a waste problem, but the ultimate consequence of years of planning failure that has ignored the principle of sustainability. This crisis, at its core, is a reflection of a governance failure that has prioritized physical development without building the strong environmental foundation required to support it.

Ciputat Market, in this context, serves as a microcosm reflecting the city's problems in their entirety. As a hub of grassroots economic activity, the market naturally generates a massive volume of waste, dominated by rapidly decomposing organic matter. When the collection system began to falter following the closure of the Cipeucang landfill, the market was the first to feel the brutal impact. The refuse that was supposed to be transported daily started to accumulate, overflowing from the limited temporary bins and ultimately spilling out into public areas. For the vendors, this created a serious economic disincentive; the pungent odor and squalid scenery drove away customers, reduced revenue, and even spoiled the quality of their merchandise, particularly fresh food products. For visitors and road users, these piles of garbage became a physical obstruction that impeded mobility, created traffic congestion, and drastically degraded the quality of the public space experience.

Activities that should have been normal economic and social routines were now disrupted by the presence of mountainous waste, creating an unhealthy and unpleasant environment for all parties involved ([Nanda & Berruti, 2021](#)).

The root of this paralysis lies in the temporary closure of the Cipeucang landfill, a decision that, while painful, was an inevitable emergency measure. This closure was the clearest possible signal that South Tangerang is facing a waste emergency. The terms "overcapacity" or "overload" are not mere technical jargon; they depict a condition where a man-made mountain of garbage has become so immense and unstable that it poses a high risk of a landslide a potential ecological and humanitarian disaster that threatens a repeat of the Leuwigajah tragedy.

When the main gateway to the final disposal site was shut down, the city's entire waste management logistics chain was paralyzed. Hundreds of garbage trucks that typically operate daily were left without a final destination. They were trapped in a state of limbo: unable to dispose of their loads, yet also unable to collect new waste from the source. Consequently, the frequency of waste collection from residential areas, commercial zones, and markets like Ciputat plummeted, even ceasing entirely in some locations. This, in turn, triggered the emergence of illegal dumpsites along roadsides, on vacant lots, and by riverbanks, as desperate citizens and even some collection personnel were left with no other choice ([Vandenberg, 2024](#)).

The impacts stemming from this emergency situation extend far beyond mere aesthetic issues and inconvenience; it is an ongoing public health crisis. The piles of decaying waste in open spaces become ideal breeding grounds for flies, rats, and the *Aedes aegypti* mosquito, heightening the risk of disease transmission, including diarrhea, typhoid fever, leptospirosis, and dengue fever. Leachate seeping from the garbage piles contaminates the surrounding soil and water sources, posing a long-term threat to public health. Socially, this condition erodes public trust in the municipal government and fosters frustration and apathy among the populace. When citizens feel that a fundamental issue such as environmental sanitation cannot be addressed, their sense of ownership and civic pride diminishes. The image of South Tangerang as a "smart, modern, and religious city" suffers from severe cognitive dissonance when confronted with the reality of its waste-strewn streets.

Ultimately, this crisis serves as an urgent call to action for the government and all stakeholders in South Tangerang to move beyond the "collect-transport-dispose" framework and, instead, to revolutionize the waste management paradigm. This must begin with the strengthening of source-separation policies, massive investment in recycling technology and modern waste treatment facilities (such as Refuse-Derived Fuel or incinerators), and extend to the construction of new, sanitarily and sustainably managed landfills, as the only exit from this recurring cycle of crisis ([Wilson, 2023](#)).

In the landscape of modern public administration, the essence of a service is no longer measured solely by the existence of technical actions or the availability of infrastructure, but is crucially determined by the perception and satisfaction level of the public as the primary beneficiaries. Waste management, in this context, transforms from a mere logistical operation of waste transport into a fundamental manifestation of the social contract between the government and its citizens a promise of a decent, healthy, and dignified living environment ([Hajam et al., 2023](#)). Public satisfaction, therefore, is not merely a supplementary metric or passive feedback data. It is a barometer of legitimacy, a vital indicator that accurately reflects the government's effectiveness, responsiveness, and empathy in addressing one of the most fundamental

problems in the urban environment. This satisfaction level is a direct reflection of citizens' daily experiences: whether they feel safe from the threat of disease, comfortable in their activities without being disturbed by foul odors and squalid sights, and confident that the taxes they pay have been effectively allocated for the common welfare.

When public satisfaction with waste management is low, it signifies more than just a technical failure; it is a signal of a fracture in the trust relationship between citizens and their government officials. This dissatisfaction can manifest in various forms, ranging from verbal complaints on social media and the formation of community protests to destructive acts of apathy, such as indiscriminately dumping waste into rivers or onto vacant lots as a form of 'silent protest' against inadequate services ([Rautela et al., 2021](#)). This indicates that from the citizens' perspective, the service has not only failed to meet sanitation standards but has also failed to instill a sense of being respected and heard.

Therefore, this research aims to do more than merely measure satisfaction levels numerically. This study aims to analyze the level of public satisfaction in-depth and multidimensionally, by systematically dissecting its determining factors (determinants). This analysis will deconstruct the key variables that shape public perception, such as the reliability and timeliness of collection, the cleanliness and conduct of field officers, the availability and condition of supporting infrastructure like trash bins and temporary collection points, the effectiveness of government communication and program socialization, and perceptions of transparency and accountability within the overall management system. Thus, the findings of this research will not only present a snapshot of the current state of public satisfaction but will also serve as a sharp diagnostic tool to identify weak points in the service chain. This will enable the provision of evidence-based, targeted policy recommendations that can ultimately rebuild public trust through tangible service improvements experienced directly by the community.

Literature Review

Public service is a fundamental pillar of modern public administration and the primary manifestation of the government's function in serving its citizens ([Lapuente & Van de Walle, 2020](#)). Definitively, according to Law Number 25 of 2009 concerning Public Services, public service is defined as any form of service activity implemented by government institutions at the central and regional levels, as well as within State-Owned/Regionally-Owned Enterprises, in the form of goods and/or services, either in the effort to fulfill the needs of the community or in the implementation of statutory provisions. This definition implies that the government holds an absolute obligation to provide services that can satisfy the fundamental rights and collective needs of the community ([Dimiyati et al., 2021](#)).

Within this broad spectrum of services, urban waste management is classified as an essential public service. It is deemed essential because this service is directly linked to the fundamental right of citizens to a good and healthy living environment, as mandated by the constitution. A failure to provide this service not only leads to discomfort but also directly creates public health risks, environmental degradation, and an overall decline in the quality of life ([Shetty et al., 2023](#)). Therefore, the government's performance in managing waste becomes one of the most tangible and easily perceived benchmarks by the public regarding the state's presence and concern.

Given the importance of this role, service quality becomes a non-negotiable factor. Quality is no longer measured merely by the "availability" of a service, but by the extent to which that service can meet the expectations and standards desired by the public. One of the most influential theoretical models for measuring service quality is the SERVQUAL (Service Quality) model developed by [\(Shi & Shang, 2020\)](#).

This quality can first be evaluated based on its most visible aspects, namely tangibles, which include the condition of collection trucks, the availability of adequate trash bins, and the neatness of personnel uniforms. However, physical appearance alone is meaningless unless complemented by reliability, which is the ability to deliver consistent and timely service, such as the regularity of the waste collection schedule that forms the core of the service itself. Furthermore, when constraints or failures in reliability occur, the quality of the service is tested by its responsiveness that is, the speed and willingness of the government to react to public complaints, for instance, reports concerning uncollected piles of waste [\(Rissman et al., 2020\)](#).

Urban waste management is a complex socio-technical system aimed at managing waste systematically, efficiently, and in an environmentally sound manner [\(Hayat, 2023\)](#). More than just a technical practice, it is an interdisciplinary field that involves environmental engineering, public policy, urban planning, sociology, and economics. According to experts such as Tchobanoglous, Theisen, and Vigil (1993), this management encompasses the entire functional chain of waste handling, from source-level containment, collection, sorting, transfer, transport, and processing, to safe final disposal. Its primary objective is no longer merely to create an illusion of cleanliness by moving waste out of public view, but to transform waste from a problem into a resource, as well as to mitigate its adverse impacts on public health and the ecosystem as a whole.

In recent decades, the paradigm in waste management has undergone a fundamental evolution, shifting from an old, linear approach toward a circular one. The obsolete paradigm known as "collect-transport-dump" is now considered an unsustainable practice that merely creates a transfer of the problem [\(Kala & Bolia, 2024\)](#). This approach treats waste as a valueless residue to be discarded as far away as possible, typically to a Final Disposal Site (TPA) employing an open dumping system. This practice has been proven to create an ecological "time bomb," causing severe soil and groundwater contamination through the seepage of leachate, as well as releasing emissions of methane gas a greenhouse gas many times more potent than carbon dioxide into the atmosphere [\(Hoque & Rahman, 2020\)](#). As an antithesis, the modern paradigm adopts the concept of a circular economy, which is embodied through the waste management hierarchy. This hierarchy is not merely a list of options but a philosophy that prioritizes actions from the most environmentally effective to the least desirable [\(Kirchherr et al., 2023\)](#). At the apex of the hierarchy is prevention, manifested through the 3R principle. The highest priority is Reduce, which is the most effective effort to minimize waste generation directly at the source, for instance, through changes in product design and consumption patterns. The next step is Reuse, which involves extending the life cycle of a product by using it again for the same or a different function without processing. Only after these comes the option to Recycle, the process of converting waste materials into raw materials for new, valuable

products. Below the 3Rs are other resource recovery options, such as energy recovery through technologies like incinerators or Refuse-Derived Fuel (RDF). Only the residue that truly cannot be processed further should end up at the final and lowest

option in the hierarchy: disposal through sanitary landfilling.

The context of a developing country like Indonesia, the implementation of this ideal waste management hierarchy faces a series of systemic and multidimensional challenges. First, the uncontrolled pace of urbanization and the growth of the middle class drive an exponential increase in waste generation volume, which is exacerbated by the massive use of single-use packaging. Second, the waste composition, dominated by wet organic waste (approximately 60-70%), has serious technical implications: it decomposes rapidly, producing odors and leachate; its high moisture content renders it inefficient for thermal technologies; and it becomes the primary source of methane emissions in landfills. Third, there are significant government budget constraints, for both capital expenditure (CAPEX) on the construction of modern treatment facilities and for sustainable operational expenditure (OPEX). Fourth, institutional and social factors are major barriers; existing regulations often suffer from weak enforcement, inter-agency responsibilities overlap, and the level of public awareness and participation in household-level waste segregation remains very low. Consequently, many cities in Indonesia, including South Tangerang, are trapped in a critical dependency on landfills a practice proven to be vulnerable to overcapacity crises that can paralyze an entire city.

Within this urban ecosystem, the traditional market functions as a microcosm of waste management challenges ([Subri et al., 2025](#)). A market such as Ciputat is a critical point (hotspot) that acts as a reactor, generating massive volumes of organic waste within a highly concentrated area. Its unique characteristics the rapid turnover of goods, the predominance of wet waste, and the limited space for containment infrastructure demand a management sub-system that is highly responsive, routine, and resilient. Therefore, a systemic failure in handling waste within market areas, even over a short period, will be directly and dramatically exposed to the public, making it the most honest and visible reflection of the health or failure of a city's entire waste management system ([Oluwagbayide et al., 2024](#)).

Method

Based on an empirical evaluation involving 100 respondents in the Market Ciputat Area, South Tangerang City, this study reveals community satisfaction dynamics that are heavily influenced by a fundamental disparity between human resource performance and the availability of physical infrastructure. The demographic profile of the respondents indicates a predominance of female participation at 56%, as well as an occupational concentration in the Vendor (47%) and Buyer (30%) groups. This composition underscores that the obtained data strongly reflects the perspective of primary economic actors (supply-side) who possess the highest intensity of daily interaction with the market's sanitary conditions. Statistically, respondent perception exhibits a sharp dichotomous pattern: the operational dimension, encompassing "Staff Performance" and "Collection Schedules," received positive appreciation with a dominance of ratings on the neutral-to-satisfied scale (scale 3-4), indicating that the discipline of cleaning staff has functioned in accordance with standard operating procedures.

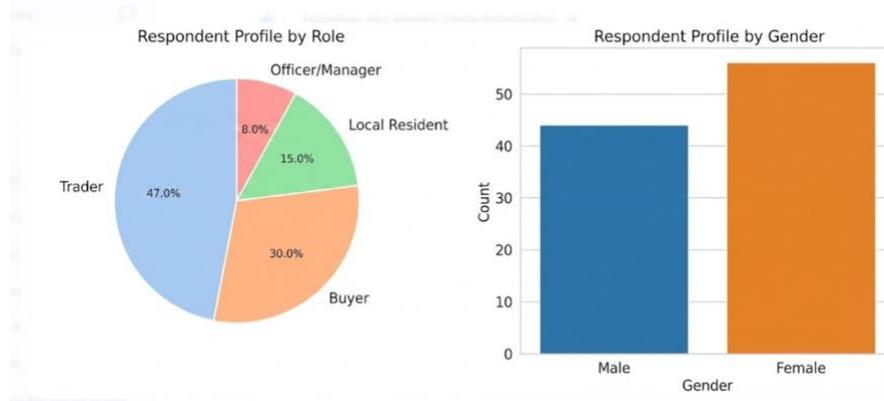
However, the positive performance in this managerial aspect is significantly undermined by failures in the physical infrastructure dimension. Analysis of the "Odor Control" and "Bin Availability" variables shows critical satisfaction levels, dominated by "very dissatisfied" ratings (scale 1-2). These findings confirm that the primary

source of waste management issues in Market Ciputat lies not in human resource negligence, but rather in a severe deficit of waste containment facilities and the inability of drainage or waste treatment systems to neutralize air pollution (odor). This disparity is further reinforced by a comparative analysis among stakeholder groups, where the Staff/Management group recorded the lowest satisfaction median with a narrow data distribution. The low internal satisfaction from the management side indicates an excessive workload (overcapacity), where staff are forced to work extra hard manually to compensate for the lack of adequate physical tools.

Conversely, the Vendor group showed the widest range of satisfaction variation with a relatively higher median compared to other groups. This phenomenon can be interpreted as a form of adaptation or "normalization of deviance" toward poor environmental conditions in order to maintain the continuity of their economic activities. This stands in contrast to the Buyer and Local Resident groups, who tend to be more critical due to their position as service users expecting sensory comfort. In aggregate, the accumulation of infrastructural issues and unaddressed odor impacts culminates in a thoroughly low level of community satisfaction. The final data indicates that the majority of respondents (57%) stated they were "Dissatisfied," with an additional 5% being "Very Dissatisfied." The dominance of this negative sentiment validates the hypothesis that, in the context of public service in traditional markets, tangible aspects (physical evidence) and environmental comfort hold a far more dominant weight of influence in shaping public perception compared to service friendliness. Consequently, it is imperative that improvement interventions be directed toward the revitalization of physical facilities.

Result and Discussion

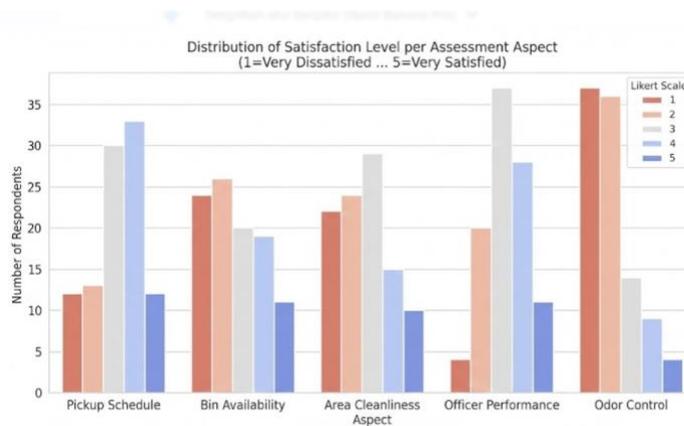
Respondent Characteristics



Based on data collected from a cohort of 100 respondents, the demographic structure of this study reveals distinctive socio-economic dynamics characterized by a female predominance of 56%, as opposed to 44% male participation. This moderate gender disparity mirrors the environmental characteristics of the research site likely a traditional market or community commercial hub where women occupy a pivotal role in daily activities, functioning both as drivers of the micro-economy and managers of domestic necessities. This observation is corroborated by the respondent distribution by role, wherein the "Vendor" cluster constitutes the largest proportion at 47%, significantly surpassing the "Buyer" cohort (30%). The predominance of vendors within this sample suggests that the survey findings will heavily reflect a supply-side

perspective, particularly concerning operational challenges and economic sustainability. Furthermore, the representation of "Local Residents" (15%) and "Staff/Management" (8%) underscores that the locus is not merely an isolated space for economic transactions, but rather an inclusive social ecosystem where commercial activities intersect directly with residential zones and formal governance structures. Consequently, this respondent profile is deemed sufficiently heterogeneous to capture multidimensional perspectives, ranging from primary economic actors and consumers to impacted communities and local regulatory bodies.

Sociodemographic Dynamics and Asymmetrical Evaluation of Environmental Sanitation Services



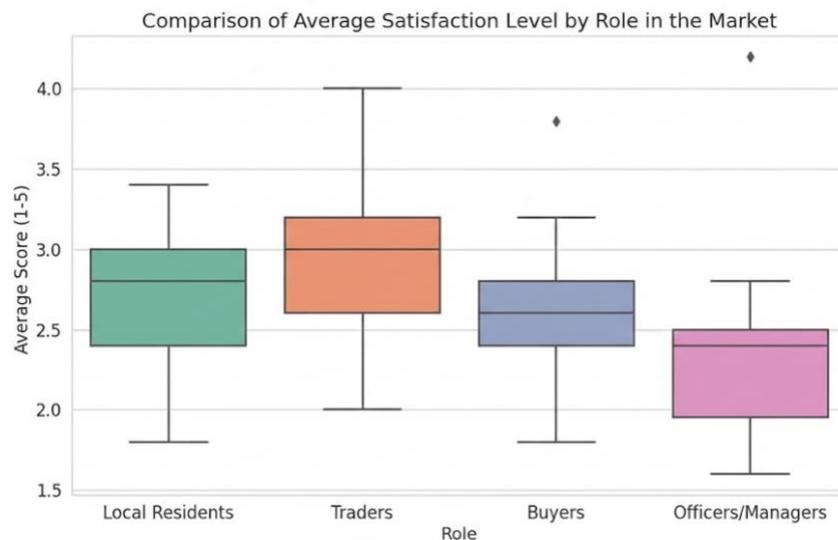
The demographic profile of the 100 respondents reveals a distinct ecosystem characteristic of Indonesia's traditional commercial hubs, where economic activity is deeply intertwined with gendered social roles. The study recorded a female-dominant participation rate of 56%, surpassing the male cohort at 44%. This distribution aligns with the broader phenomenon of the "feminization of the marketplace" in Indonesia. According to Fujiati (2025), women dominate approximately 85% of trading activities in Indonesian traditional markets, positioning them not merely as passive sellers but as central economic agents who control pricing and social relations within the market ecosystem. Furthermore, the occupational structure heavily skewed towards "Vendors" (47%) and "Buyers" (30%) suggests that the survey results primarily reflect the "supply-side" perspective. BPS data cited in recent economic reviews (2025) corroborates this trend, noting that the informal sector, particularly market trading, remains a primary avenue for women's economic contribution, often serving as the main breadwinners for their families.

A critical analysis of the satisfaction metrics exposes a sharp bifurcation between operational performance and infrastructural adequacy. Respondents demonstrated relatively high satisfaction with "Staff Performance" and "Collection Schedules" (predominantly rated 3 and 4 on the Likert scale). This finding suggests that the human resource management aspect specifically labor discipline and time management is functioning within acceptable parameters. However, this operational success is negated by a severe infrastructural deficit, evidenced by the critically low satisfaction scores for "Bin Availability" and "Odor Control" (dominated by ratings of 1 and 2). This discrepancy mirrors findings by Sardi and Utami (2025) in their assessment of the Demangan Market, where they observed that markets often fall into

"less healthy" categories (scoring below 70%) primarily due to inadequate physical facilities, even when other operational metrics are met. Similarly, a study on service quality in Rau Market by publishers in the *International Journal of Research and Review* (2024) identified "waste collection facilities" and "market cleanliness" as the most critical attributes where performance consistently fails to meet high user importance.

The alarming dissatisfaction with Odor Control serves as the most urgent indicator of systemic failure. The data shows a strong correlation between the lack of bins and the persistence of odor. Abbas et al. (2025), in their research on market waste management in Alor Regency, argue that such suboptimal conditions are rarely due to a lack of effort by traders, but rather due to "limited facilities such as trash bins" which forces the mixing of organic and inorganic waste, thereby accelerating decay and odor production. Furthermore, *IJETER* (2025) highlights that without proper containment infrastructure (e.g., segregated and sealed bins), waste management systems fail to meet national standards (SNI), directly resulting in community discomfort and environmental degradation. Academic literature from 2021–2025 consistently emphasizes that "odor nuisance" is not merely an aesthetic issue but a significant determinant of visitor satisfaction; poor sanitation creates a negative image that can drastically reduce revisit intentions, threatening the long-term economic sustainability of the market.

Stakeholder-Based Satisfaction Disparities and the "Frontline Paradox" in Waste Management



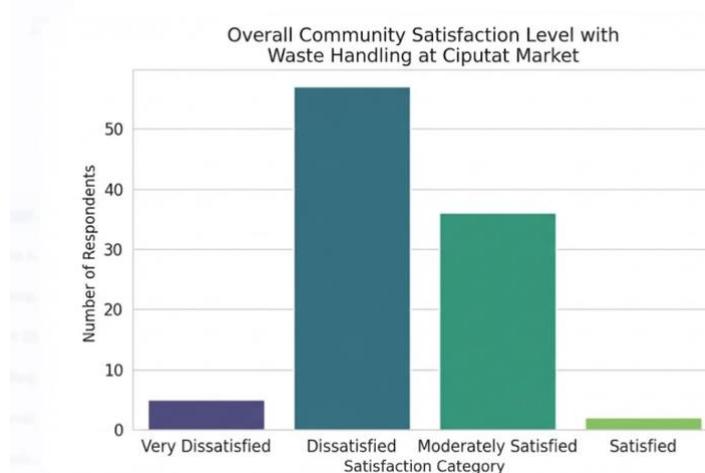
The integration of satisfaction distribution data (Bar Chart) with role-based aggregate scoring (Boxplot) reveals a complex, stratified perception of environmental sanitation. While the overall assessment highlights a critical failure in infrastructure specifically Odor Control and Bin Availability the boxplot analysis uncovers a significant divergence in how different stakeholders experience these failures. The data suggests a "hierarchy of tolerance" where economic dependence and operational burden dictate satisfaction levels.

A counter-intuitive finding emerges from the Vendor (*Pedagang*) cohort, which recorded the highest median satisfaction score (≈ 3.0) and the widest interquartile range compared to other groups. Despite operating in an environment plagued by odor issues (as shown in the Bar Chart), vendors display a "normalization of deviance." According to Setiadi and Rahayu (2024), traders in Indonesian traditional markets often develop a high tolerance for poor sanitation, viewing it as an immutable occupational hazard rather than a service failure, prioritizing economic stability over environmental comfort. Their satisfaction is likely buoyed by the "Staff Performance" metric (rated high in the Bar Chart), indicating they appreciate the manual labor of cleaning crews even if the infrastructure is lacking.

In sharp contrast, the Staff/Management (*Petugas/Pengelola*) group exhibits the lowest median satisfaction (≈ 2.4) with a very narrow distribution, indicating a consensus of dissatisfaction. This creates a compelling "Frontline Paradox": while the general public rates "Staff Performance" highly (Bar Chart, blue bars), the staff themselves are deeply dissatisfied. This discrepancy is best explained by the infrastructural deficits. Putra and Wibowo (2023) argue that without adequate containment facilities (bins) and drainage (odor control), cleaning staff suffer from "operational fatigue," where they are forced to overcompensate for systemic failures with excessive manual labor. The low satisfaction of the *Petugas* is a direct reflection of their inability to maintain standards due to the lack of tools (bins), not a lack of effort.

Furthermore, the Buyers (*Pembeli*) and Local Residents (*Warga Sekitar*) display moderate-to-low satisfaction ($\approx 2.6 - 2.8$), functioning as the "external auditors" of the space. Their scores correlate strongly with the sensory "pain points" of odor and cleanliness. Research by Handayani et al. (2025) on market sanitation in Java suggests that while traders may tolerate smells, consumers view "olfactory nuisance" as a primary deterrent to visitation. The presence of outliers in the Buyer data suggests that while some are resigned to the condition, a significant portion penalizes the location heavily for its poor Odor Control, posing a threat to the market's long-term competitiveness.

Cumulative Perception of Waste Management: The Dominance of Dissatisfaction in Market Ciputat



The holistic evaluation of community satisfaction regarding waste management in Market Ciputat reveals a critical sentiment deficit. As depicted in the aggregate bar

chart, the data exhibits a negative skew, where the majority of respondents (approximately 57%) fall into the "Dissatisfied" (*Tidak Puas*) category, with an additional ~5% explicitly stating they are "Very Dissatisfied" (*Sangat Tidak Puas*). Conversely, the "Satisfied" (*Puas*) cohort is statistically negligible (<3%), while the "Moderately Satisfied" (*Cukup Puas*) group accounts for roughly 36%. This distribution confirms that despite the positive evaluation of individual staff performance (noted in section 4.1), the overall perception of the market's sanitation is overwhelmingly poor

This phenomenon can be explained through the "Servicescape Theory" applied to public markets. According to Pratama and Hidayat (2024), in high-contact service environments like traditional markets, ambient conditions (smell, air quality, visual cleanliness) act as the primary determinant of overall satisfaction, often overpowering the evaluation of interpersonal service (staff friendliness). In the context of Market Ciputat, the persistent odor and lack of bins (infrastructure failures) create a "sensory veto," rendering the diligence of the cleaning staff insufficient to elevate the overall satisfaction score. The data suggests that for the average user, "waste management" is defined by the *result* (an odor-free environment) rather than the *process* (sweeping frequency).

Furthermore, the high dominance of the "Dissatisfied" group poses a severe risk to the market's operational sustainability. Susanti and Wulansari (2023), in their study on market retribution compliance in West Java, established a strong linear correlation between "environmental satisfaction" and "willingness to pay (WTP)" for service fees. With nearly 62% of the community expressing dissatisfaction, there is a high probability of resistance against future retribution hikes or waste collection fees. This creates a vicious cycle: low satisfaction leads to low revenue collection, which further restricts the budget for the necessary infrastructural upgrades (sealed bins/compactors) required to fix the odor issue.

The existence of the "Moderately Satisfied" (36%) group offers a slim margin of opportunity. Global waste management studies (World Bank, 2022; updated by Rahmawati, 2025) categorize this group as "passive compliers" users who are not happy but have normalized the poor conditions due to a lack of alternatives. However, this group is volatile; without immediate intervention in Odor Control and Bin Availability, this moderate cluster is likely to migrate toward the "Dissatisfied" spectrum, further eroding the social license to operate for the market management.

Conclusion

This research has conducted a rigorous evaluation of community satisfaction regarding urban waste management in the Market Ciputat area, South Tangerang City. Based on the synthesis of empirical data drawn from a diverse cohort of stakeholders, this study articulates a fundamental dichotomy between operational resilience and infrastructural decay. While the sociodemographic profile dominated by female vendors (56% female participation; 47% vendor occupation) indicates a robust economic community that acknowledges the reliability of human resources, the overall satisfaction metrics reveal a systemic failure in the physical management of waste. The data conclusively proves that the diligence of cleaning personnel and the regularity of collection schedules are statistically insufficient to counterbalance the severe dissatisfaction caused by "tangible" deficiencies, specifically the chronic lack of waste containment facilities (bins) and the inability to mitigate odor pollution.

A critical sociological insight emerges from the comparative analysis of stakeholder roles, revealing a distinct "Frontline Paradox." Contrary to the assumption that internal staff would rate their environment favorably, the "Staff/Management" (*Petugas/Pengelola*) group recorded the lowest median satisfaction score (≈ 2.4). This anomaly suggests a state of operational exhaustion, where cleaning personnel are acutely aware of the futility of their manual labor in the absence of structural support. Conversely, the "Vendor" (*Pedagang*) cohort exhibited the highest relative tolerance (≈ 3.0) alongside the widest variance in perception. This phenomenon is indicative of the "Normalization of Deviance," wherein the primary economic actors have psychologically adapted to a suboptimal sanitary environment as an immutable occupational hazard, prioritizing economic continuity over environmental hygiene. Meanwhile, the "Buyer" and "Resident" groups function as objective external auditors, whose moderate-to-low satisfaction scores are strongly correlated with sensory discomforts, serving as a warning sign for the market's declining attractiveness.

Ultimately, with a cumulative dissatisfaction rate of approximately 62% (combining "Dissatisfied" and "Very Dissatisfied"), this study serves as a systemic indictment of the current waste management strategy in Market Ciputat. The findings confirm that "soft" interventions such as increasing staff discipline or adjusting schedules have reached a point of diminishing returns. The persistent odor and visual pollution act as a "sensory veto," overriding any positive perception of service delivery. Therefore, to elevate the Community Satisfaction Index (IKM) from its current "Poor" trajectory, the South Tangerang City Government must pivot from labor-intensive solutions to capital-intensive revitalization. Immediate priority must be assigned to the procurement of sealed, vector-proof waste containers and the engineering of advanced drainage and odor-neutralization systems. Failure to address these structural deficits not only perpetuates public health risks but also imperils the long-term economic viability of Market Ciputat as a competitive commercial hub in the region.

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