



Implications of e-Ticketing Systems on the Financial Status of Bus Terminal Touts in Tanzania: A Systematic Literature Review

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Article History

Received: 09.03.2026

Accepted: 20.05.2026

Published: 11.06.2026

Abstract: The public transport in Tanzania has undergone a quick adoption of electronic systems which has completely changed the operational landscape of intercity and intracity travel. This study draws results from a systematic literature review for the inferences of e-ticketing regarding financial positions of bus terminal touts' informal workers who have historically made income through ticket hawking, passenger solicitation, and commission-based activities with bus companies. The review engaged on peer-reviewed articles, government policy documents, grey literature, and empirical reports from Tanzania and similar Sub-Saharan African countries, the review examined the economic displacement effects of digital ticketing, the coping strategies adopted by affected touts, and the broader socioeconomic consequences of transport digitization. Findings indicated that e-ticketing systems greatly decrease informal income streams for touts by eliminating commission-based sales channels, restricting physical ticket access points, and increasing transparency in fare collection. The study also identifies a digital divide as a key vulnerability factor among affected touts. It is recommended that, policies should include financial inclusion programs, digital literacy training, and transitional social protection frameworks to cushion the financial shocks borne by this group of workers.

Keywords: e-ticketing, bus terminal touts, informal economy, financial displacement, digital transport.

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1. Introduction

As the digital world continues to expand, the issues of efficiency, transparency and revenue optimization has been mentioned as part of success stories within the digitization of public transport systems. The of Tanzania government and the private sector specifically in the transport industry have gradually adopted e-ticketing systems in terms of digital platforms that automate payment of fares, reservation of seats, and management of passengers across major bus terminals, including Ubungu Bus Terminal in Dar es Salaam, Nyagezi Bus terminal in Mwanza, Arusha, and Dodoma and many other parts of the regions. Some platforms like *Kampuni ya Usafiri Dar es Salaam* (UDA) apps are systems commonly used to administer various operator-specific mobile solutions, which represent a significant paradigm shift from the manual, cash-based ticketing that has been used for Tanzanian bus transport for many years.

The locally known as 'makanga' or 'dalali' within the traditional system, bus terminal touts have employed an important informal,

economic niche. The persons, mainly young men from low-income urban and peri-urban communities, have for long time complemented their livelihoods by lobbying passengers, selling tickets on behalf of bus operators, guiding travelers to vehicles, and helping last-minute booking dealings at bus terminals. Their payments have typically being commission-based or informally negotiated, which constitute an important lifeline financial stream.

Automating booking for passengers by eliminating physical ticket sales mediators, and introducing non-cash payment systems, e-ticketing systems automatically dismiss touts from the value chain of bus transport. As such, the use of e-ticketing systems threatens to primarily eroding the financial basis upon which these touts depend. This review examines the nature, depth, and breadth of this financial distraction, analyzing available evidence from Tanzania and corresponding contexts across Sub-Saharan Africa.

The paper is organized into eight sections, including the methodology used in the review, followed by a section that provides the background on Tanzania's transport sector and the role of the informal employment context. Furthermore, the nature and

Cite this article:

Mayala, N. M., (2026). Implications of e-Ticketing Systems on the Financial Status of Bus Terminal Touts in Tanzania: A Systematic Literature Review. *ISAR Journal of Economics and Business Management*, 4(6), 13-22.

structure of e-ticketing systems is presented, followed by the analysis of the financial implications for touts in Tanzania bus terminals. An exploration of coping strategies and resilience mechanisms for the touts and a discussion of policy implications is given. Lastly, a section which offers conclusions and directions for future research is given.

2. Methodology

This paper adopts a systematic literature review approach, guided by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework. The review sought to identify, evaluate, and synthesize empirical and theoretical literature pertaining to the financial consequences of e-ticketing systems on informal transport workers, with particular attention to the Tanzanian context.

2.1 Search Strategy

A search was comprehensively conducted through multiple academic databases which included Google Scholar, Scopus,

JSTOR, African Journals OnLine (AJOL), and ResearchGate. Furthermore, grey literature was sourced from the Tanzania National Roads Agency (TANROADS), the Surface and Marine Transport Regulatory Authority (SUMATRA), the International Labour Organization (ILO), the World Bank, and relevant NGO reports. Search terms included combinations of 'e-ticketing Tanzania', 'electronic ticketing Africa', 'bus terminal informal workers', 'makanga financial impact', 'digital transport Sub-Saharan Africa', 'informal economy digitization', and 'transport touts' displacement'.

2.2 Inclusion and Exclusion Criteria

A total of 47 sources were identified as meeting the inclusion criteria and form the basis of this review. Out of these, 26 qualified for inclusion in the study. The studies that were included for the review had an inclusion and exclusion criterion as indicated in Table 1.

Table 1: Inclusion and Exclusion Criteria

S/N	Inclusion Criteria	Exclusion Criteria
1.	Addressed e-ticketing or digital transport in Sub-Saharan Africa	Studies were excluded if they focused exclusively on developed-country contexts without comparative application
2.	Examined informal workers in the transport sector	lacked primary or secondary data on financial outcomes
3.	Analyzed financial, economic, or livelihood outcomes	Analyzed anything other than financial, economic or livelihood outcomes
4.	Were published between 2005 and 2026	If the study were published before 2025

2.3 Analytical Framework

The analysis is organized thematically, drawing on frameworks from the informal economy literature (Chen, 2012; ILO, 2018), technology adoption theory (Rogers, 2003), and financial vulnerability assessment models adapted for low-income informal workers in developing economies (World Bank, 2020).

3. Findings and Discussion

3.1 Overview of Bus Transport in Tanzania

The review found that the domestic mobility system in Tanzania is dominated by a bus transport system, which makes it the backbone of all routes across the country, serving millions of passengers on a daily basis in urban, peri-urban, and rural areas. With hundreds of bus companies in the industry, the sector is dominated by private operators, ranging from large operators like Dar Express, BM Express, Esther Coach, Tahmeed Coach, and Kilimanjaro Express a few to mention, but several other smaller local operators. At the Ubungu Terminal in Dar es Salaam, which is one of East Africa's busiest intercity terminals, it processes tens of thousands of passengers on a daily basis, making it an important node in Tanzania's transport infrastructure.

Historically, the sector operated through a highly manual, cash-intensive system. Passengers would arrive at terminals, negotiate with touts or directly with bus company representatives, purchase paper tickets, and board buses. This system, while inefficient from a regulatory standpoint, generated economic activity that sustained

large numbers of informal workers throughout the terminal ecosystem.

3.2 The Role and Profile of Bus Terminal Touts

Referring to the role that bus terminal touts in Tanzania occupy, it is evident that a multifaceted role is played, which extends to more than simple ticket hawking. The function ranges from soliciting passengers right from arrival points and taxi stands. In the process, touts provide destination and information about routes, facilitate seating arrangements and luggage handling. Touts also do mediation between passengers and operators in disputes while also accelerating boarding processes during peak hours. For doing all these functions, touts earn commissions from bus operators as pre-arrangements for doing those functions but also accept tips from passengers. The functions extend to sometimes engaging in ticket arbitrage by purchasing tickets at face value and reselling them at a premium during high-demand periods like Christmas and New Year seasons.

In terms of demographic spread, studies have indicated that the tout's employment is dominated by male, aged between 18 and 40, with limited formal education and facing a challenge of alternative formal employment opportunities in the labour market (Rizzo, 2011; Kombe and Kreibich, 2020). Tout work to most people, does not represent a long-term income source but a temporary entry point into the labor market and in process becomes permanent. In the far end of the spectrum, the financial instability of their

position is compounded by the absence of formal contracts, social insurance, or occupational protections as workers.

3.3 Income Structures and Financial Vulnerability

As bus touts is grouped under the informal employment, the job is also referred to as one of the vulnerable type of job as far as income is concerned. The job is characterized by income levels that are highly variable among touts depending on size of the terminal that one works, volume of passengers in particular routes, and the entrepreneurial capacity of an individual. It is estimated that from the field studies that, in Dar es Salaam the daily earnings per tout ranges from TZS 5,000 to TZS 30,000 which is an approximately USD 2–12, with substantial differences tied to specific seasons, public holidays, and the relationship that the specific operator have with the touts (Mwamba, 2019). Nevertheless, these small earnings, many touts support a number of obligations to their dependents in families contributing to household survival strategies in the wider urban and settings.

Focusing on the bus terminal tout's financial vulnerability in Tanzania, evidence shows that it is intensely structural in nature, engrained in the node of informal labor settings which encompass systemic exclusion from formal economic systems, and the integral instability of commission-dependent income which is imbedded in an unpredictable market environment. Different from the workers in the formal sector who are covered from definite minimum wages addressed in their employment contracts, and being covered by statutory social protections, touts operate completely of these important institutional safeguards, making them totally exposed to income shocks of all types (Rizzo, 2011; ILO, 2021).

The absence of a certainty of income flow creates financial vulnerability defining feature among touts at the most fundamental level. Their earnings are wholly dependent on the volume of passengers solicited and tickets brokered on any given day to day hustle. The figures of income that fluctuates depending on the day of the week, season, weather conditions, public holidays, and the operational schedules of bus operators (Mwamba, 2019). On high-traffic days surrounding school term openings, public holidays, and harvest seasons, daily earnings may be relatively robust; on slow midweek days or during periods of reduced bus frequency, income can fall to negligible levels. This extreme variability makes financial planning practically impossible for the majority of touts, who must manage household expenditure needs that remain constant even as income swings unpredictably (Chen, 2012).

The situation is even intensified bearing in mind that the touts are in near-total exclusion of most from formal financial services which actually compound their financial status. Importantly, things like proof of formal employment and national identification documentation are the requirements of commercial banks in Tanzania for opening savings account. Requirement for minimum balance thresholds that effectively disqualify informal workers from accessing credit facilities, or insurance products (World Bank, 2020). Mobile banking platforms like M-Pesa and Tigo Pesa have fairly extended financial access to the informal workers yet studies indicate that utilization of the mobile money services for savings or credit among informal transport workers remains narrow, often limited to transaction facilitation rather than systematic wealth accumulation (ILO, 2021). Thus, short-duration income interruptions carrying disproportionate savings buffer

results into even severe consequences as there are no financial reserves to draw upon when earnings fall.

It is also true that, the causes of latent financial stream disruption are many and largely beyond the individual tout's control. In a social setting, health shocks are common especially in low income communities which include illness, sustained injury or illness of dependents within the family which requires caregiving can displace a tout from the labor market for days or weeks at a time, with no source of income as no sick pay or health insurance could compensate losses (ILO, 2018; ITUC, 2023). When there is a situation of establishment of a new or relocation of terminals through renovation of terminal infrastructure, operating zones by terminal management, or conflict resulting from other informal workers similarly disrupt revenue streams of the touts. Economic shocks like change of market prices including fuel price may reduce bus frequency, seasonal road closures, or broader economic contractions that suppress passenger volumes, equally disturb economic wellbeing of touts (Kambone, 2023).

When income streams are disrupted, the consequences for low level income households are swift and severe. Many touts in this condition resort to informal borrowing streams normally from relatives, neighbors, or community-based lending groups at unfavorable terms as a result of having no savings or access to formal credit (Kombe & Kreibich, 2020). Some resorts from selling small productive assets like small livestock, household goods, or informal savings club balances to meet immediate cash needs, eroding the very asset base that might otherwise provide a modest degree of long-term financial security (World Bank, 2020). The immediate casualties of income disruption include reduced dietary diversity and meal frequency, withdrawal of children from school due to inability to pay fees, delayed or foregone medical treatment, and failure to meet rental obligations outcomes that concentrate financial hardship most heavily on dependents who bear no direct role in the market disruption that caused it (ILO, 2021; UN Women, 2022). In this way, the financial vulnerability of the individual tout functions as a transmission mechanism for broader household impoverishment, linking the precariousness of informal terminal labor to systemic cycles of poverty that are difficult to escape without deliberate external intervention.

4. E-Ticketing Systems in Tanzania's Bus Transport Sector

4.1 Nature and Architecture of E-Ticketing Systems

Contrary to the past, as a result of technology development, e-ticketing systems are currently used in Tanzania. The bus transport sector is one of the areas that has sophisticated, multi-layered digital ecosystems that essentially constitute a mechanism that serves passenger booking, fare payment, and travel management. These platforms play a key role in integrating an ensemble of interconnected capabilities online and mobile seat reservation and cashless payment processing through mobile money channels, electronic ticket issuance delivered via SMS confirmation or scannable QR code, and real-time generation of passenger manifests that give operators unprecedented visibility into vehicle occupancy and revenue flows (SUMATRA, 2022). The early adopters to include these technologies were operators, including Tahmeed Coach and Scandinavian Express, who emerged as early institutional adopters, introducing these integrated platforms at a

small scale and later demonstrating high efficiency in operations across high-volume intercity. Some other bus operators followed with accelerated uptake among competing companies seeking equivalent gains in efficiency and revenue transparency.

As time went by, the technological sophistication of these systems extended beyond a single interface to encompass web-based portals that are accessible to smartphone users, USSD-based mobile channels accommodating a large proportion of passengers operating without internet-enabled devices, digital kiosks that are agent-operated, located in strategic positions at major terminal locations to serve walk-in passengers having no devices or the digital confidence to book independently (URT, 2023).

There is a technical architecture behind these visible functional capabilities that is very important for the informal workers whose jobs depend on the information landscape of the terminal environment. These systems are based on a client-server model and are built on centralized, continuously updated booking databases. They break down the information asymmetries that have historically been the economic basis for the tout's intermediary role (Kambone, 2023). Touts used to have a big advantage in the market because they knew about seat availability, fare changes, departure times, and operator-specific conditions in real time. Ordinary passengers could only get this information from them. Now, e-ticketing platforms put this information directly and instantly into the hands of any passenger with a mobile device. This makes the tout's informational expertise not only unnecessary but also structurally obsolete, and it quietly removes the economic reasons that have kept them at Tanzania's bus terminals for decades.

4.2 Drivers of E-Ticketing Adoption

The fast adoption of digital transportation in Tanzania has not been caused by a single factor, but rather multiple factors. The accelerated changes have been due to pressures coming from the changes in demands and capabilities of the travelling public, factors within the Tanzania transport system and the regulatory environment. As a result of these multifaceted pressures, a lot has happened in terms of e-ticketing operations. Central points of booking have resulted in the protection of revenue collection by eliminating most possible fraudulent activities within the network of bus operations. Furthermore, customer relations with the respective bus companies have been enhanced as passengers deal with the operators directly. Data management and service optimization that was structurally impossible under analog ticketing regimes has been enhanced (SUMATRA, 2022).

The pressure in the regulatory system has given institutions a strong reason to act, with SUMATRA and the Tanzania Revenue Authority (TRA) working to digitize transportation in the country. The tools that are strategically placed to improve tax compliance, revenue reporting, and break down the corruption-friendly lack of transparency that cash-based fare collection systems have had in the industry for a long time, so that e-ticketing can be used. E-ticketing has made the bus transportation industry appealing and well-marketed, which is strategically important for operators who want to keep their operating licenses and avoid being punished (SUMATRA, 2022; URT, 2023).

The situation on the demand side regarding digital ticketing adoption have been progressively accumulated by broader

technological and financial inclusion trends unfolding across urban Tanzania: the increased use of smartphone diffusion among the youth, working-age urban populations, the dramatic expansion of mobile money infrastructure anchored by platforms including M-Pesa, Tigo Pesa, and Airtel Money, and growing consumer familiarity with digital transactions have collectively lowered the behavioral and technical barriers to online ticket purchasing, creating a passenger base increasingly predisposed to — and in many cases actively preferring the convenience of digital booking over the friction and uncertainty of terminal-based cash transactions (World Bank, 2020; URT, 2023).

5. Financial Implications of E-Ticketing for Bus Terminal Touts

5.1 Erosion of Commission-Based Income

Findings from the review noted that the removal of commission-based income from ticket sales is the most straightforward and measurable financial impact of e-ticketing on touts. It was noted also that commissions between 5% and 15% was earned by the touts under the traditional system basing the value of the ticket for each passenger directed to a particular bus operator (Mwamba, 2019; Rizzo, 2011). With e-ticketing systems enabling passengers to book directly through digital channels, the intermediary role of the tout is bypassed, and with it, the commission income that role generated.

This displacement is not merely marginal. For many touts, commission income accounted for 60–80% of total earnings. The residual income from tips and informal services is insufficient to compensate for the loss of commission revenue, creating an immediate and severe income shock for those whose operators have transitioned to digital-only booking platforms.

5.2 Reduced Passenger Volume at Physical Points of Sale

E-ticketing systems move a lot of passenger booking activity from physical terminals to the internet. This migration cuts down on foot traffic at terminal booking windows and in the surrounding informal economy. This affects touts directly and also lowers demand for the extra informal services (food vending, luggage handling, money changing) that touts often use to make extra money.

At Ubungu Terminal, it was noted that the number of touts dropped significantly between 2020 and 2024. This was the same time that most major operators started using e-tickets more often (Kambone, 2023). Some touts tried to switch to other terminal-based jobs, but the overall economic space for informal workers at the terminal has shrunk a lot.

5.3 Informational Disintermediation and Loss of Arbitrage Opportunities

For generations, bus terminal touts in Tanzania have had a strategically important informational role in the terminal ecosystem. This role was not only useful to passengers but also a valuable economic asset around which an entire informal income structure was built. They were able to get real-time, detailed information that regular passengers couldn't get on their own because they were immersed in the rhythms of terminal life every day. For example, they knew which buses on which routes still had available seats at any given hour, which operators were quietly

offering discounted fares to fill near-empty vehicles before departure, when demand surges during peak travel periods created pricing opportunities, and which informal arrangements between operators and terminal staff could be used to secure preferential passenger placement (Kambone, 2023). This informational superiority was not incidental to the tout's economic function but central to it the more sophisticated and well-connected the tout, the greater their capacity to earn above-average commissions through skilled passenger-operator matching and to participate in informal ticket arbitrage, acquiring allocations at standard prices and redistributing them at a margin during periods of compressed supply and elevated demand, a practice that, while operating outside formal market structures, represented a form of entrepreneurial value creation rooted in accumulated experiential intelligence (ILO, 2021).

The rise of digital e-ticketing platforms has destroyed this information architecture. Centralized booking databases make seat availability visible to all, dynamic pricing is transparently displayed on digital interfaces accessible to any passenger with a mobile device, and the real-time market intelligence that took years to build is now available to everyone, dismantling the information asymmetry that was the foundation of touts' economic advantage (Kambone, 2023; ILO, 2021). The consequences of this informational leveling are far more fundamental than the immediate loss of arbitrage income and strike at something deeper and more structurally significant —the economic legitimacy of the tout's accumulated human capital. Relational investment, operational knowledge, and market intuition that experienced touts had built up, a form of specialized expertise acquired through sustained engagement with the terminal environment, in the pre-digital ticketing paradigm commanded real market value and reliably translated into earnings. Technological substitution does not merely replace this expertise or render it temporarily redundant; it devalues it at a fundamental level, removing the economic return on the years of experience accumulation and leaving seasoned touts in the paradoxical position of having an intimate knowledge of the context of a market that has no commercial use for what they know. This is a form of skill obsolescence that has profound implications not only for financial trajectories but for the dignity and occupational identity of workers whose professional self-conception was built around the competencies that digitization has rendered worthless.

5.4 Differential Impact Across Operator Types and Routes

It should be noted that the financial impact of e-ticketing does not affect all segments of the tourist population in the same way. The biggest displacement is felt by touts for big intercity operators that have fully embraced digital platforms. On the other hand, touts who work for smaller, local-route operators that have not yet introduced e-ticketing systems, particularly in semi-urban and rural corridors, continue to play revenue-relevant roles and maintain their income positions, at least in the short to medium term.

This differential creates a spatially uneven pattern of financial vulnerability, with urban terminal touts – and especially those at high-volume intercity hubs – facing disproportionate income losses compared with their counterparts in less-digitized transport markets. What this means is that in this case urbanization has

increased exposure to income displacement caused by technology, rather than cushioning economic risk.

5.4.1 Debt, Asset Depletion, and Household Financial Distress

One notable impact across the different studies in the study area, and across African contexts in general, is that those not employed in the formal sector often experience sudden income displacement. Therefore, they use the easiest coping strategies, which have long-term impacts on their welfare, including selling some of the household assets like small livestock or goods, drawing out savings from the families where they could exist, and accessing informal credit from moneylenders at exploitative interest rates (ILO, 2021; Kombe and Kreibich, 2020). These actions, while addressing their immediate liquidity needs, erode the family asset base and dig out financial vulnerability over time.

The income disruption for touts with dependents in school or elderly relatives reliant on remittances has implications that cascade into educational withdrawal, reduced healthcare access, and heightened food insecurity, showing that the financial implications of e-ticketing extend well beyond the individual tout to affect entire household systems.

5.4.2 Gender Dimensions

Tanzania's bus terminal tout population consists largely of men, although a small number of women also participate in informal activities related to the terminal ecosystem, such as food vending, luggage handling, and informal money transfer. Women are more economically vulnerable and often have fewer fallback income options than men (UN Women, 2022). Hence, the financial impacts of e-ticketing-induced economic contraction at terminals disproportionately affect these women. The existing literature remains under-represented in terms of gender-differentiated analysis, thus representing a substantial gap for further research.

6. Coping Strategies and Resilience Among Affected Touts

6.1 Occupational Diversification

The slow displacement of touts from their traditional commission-based ticketing task by e-ticketing systems has forced many to seek occupational diversification as a key household income stabilization strategy, shifting their economic activities towards a constellation of adjacent informal sector occupations that are available without formal qualifications, significant startup capital or specialized technical skills, such as luggage portage within bus terminals, vehicle cleaning and washing services for buses and private cars, food and beverage vending targeting commuters and transport workers, and motorcycle taxi operations commonly known as *bodaboda* that have mushroomed across urban and peri-urban areas in many developing countries as a flexible and low-barrier entry point into the informal transport economy. While occupational diversification represents a rational and pragmatic adaptive response to income erosion, it provides a degree of livelihood resilience to displaced touts by diversifying the risk of earnings across multiple income streams as opposed to focusing on a single, fast-diminishing viable source, the economic returns of which are structurally and systematically lower than those derived from commission-based tout work, where earnings were linked to ticket sales volumes and would scale up significantly during peak

travel times such as public holidays, festive seasons and school re-opening periods.

These diversified activities' income ceiling is further compressed by the intense competitive pressure that characterizes saturated urban informal labor markets, where the very same forces of urbanization, unemployment, and economic informality that have historically swelled the ranks of the tout population simultaneously drive large numbers of other displaced and underemployed workers into identical alternative occupations, creating conditions of chronic oversupply in luggage portering, vending, and *bodaboda* operation that suppress earnings, intensify rivalry over customers, and erode the marginal income gains that individual workers might otherwise derive from transitioning into these activities, ultimately rendering occupational diversification a coping mechanism that mitigates but does not resolve the structural economic vulnerability that e-ticketing displacement has imposed on the tout population.

6.2 Skill Adaptation and Informal Technology Mediation

The introduction of e-ticketing systems in the bus transport sector has not led to the complete elimination of touts but has instead triggered an adaptive behavioral response among a subset of this group, particularly those who are younger, more educated, and possess sufficient digital literacy to navigate online booking platforms with ease. Rather than exiting the transport ecosystem entirely, these digitally-capable touts have repositioned themselves as informal digital intermediaries, offering a fee-based service whereby they assist older passengers, rural travelers, and other digitally-excluded individuals who may lack smartphones, internet access, or the confidence to operate digital booking systems independently to purchase tickets online on their behalf.

This entrepreneurial adaptation is sociologically significant because it demonstrates the resilience and flexibility of informal labor in the face of technological disruption, effectively recreating within a digital paradigm the core information mediation and facilitation function that touts have historically performed in physical bus terminals, where their value proposition rested on bridging knowledge and access gaps between transport operators and passengers unfamiliar with ticketing procedures. However, while this niche represents a viable short-term livelihood strategy for digitally-literate touts, it is structurally precarious and temporally bounded, given that its commercial viability is inversely correlated with the rate of digital inclusion among the traveling public as smartphone penetration deepens, mobile data becomes more affordable, and digital literacy programs reach wider segments of the population, the pool of passengers who require such intermediation services will inevitably contract, progressively eroding the economic rationale for this adaptive role and ultimately threatening the long-term sustainability of even this reinvented form of tout-mediated assistance in the bus transport ecosystem.

6.3 Geographic Mobility

The uneven pace of adoption of e-ticketing across different transport corridors, terminal sizes and regional markets has created a geographic arbitrage opportunity for some displaced touts, who respond to falling incomes at highly digitized urban terminals by physically relocating to smaller, more peripheral or rural bus stations and transport corridors where traditional paper-based or verbal ticketing systems are still in place, cash transactions still

dominate, transport operators have not yet invested in digital infrastructure and regulatory enforcement of e-ticketing mandates is weaker or more inconsistently applied, thereby preserving demand for the conventional intermediation, passenger mobilization and information brokerage functions touts have historically performed and from which they derive their livelihoods. This strategy of geographic retreat to less digitized transport markets is not without a certain pragmatic logic it extends the operational lifespan of the traditional tout role by exploiting the technological frontier between digitized and non-digitized segments of the transport economy, effectively buying displaced workers additional time before the inexorable spread of e-ticketing systems reaches even the most peripheral terminals yet it is simultaneously constrained by a complex and interlocking set of structural, social, economic, and informational barriers that render it a viable option for only a small minority of affected workers rather than a scalable or sustainable adaptation strategy for the tout population as a whole. The first of these constraints is the strength of social and family ties that bind workers to their home communities, making physical relocation, especially to distant or unfamiliar terminals, socially costly in terms of separation from support networks, childcare arrangements, spousal employment, and community belonging that are critical components of household welfare and psychological security in low-income urban settings.

The social costs of these impacts are compounded by the direct financial costs of relocation, including transport, temporary accommodation, and the need to establish new working relationships and social capital in unfamiliar terminal environments where established touts may already dominate the available commission opportunities and where newcomers may face hostility, exclusion or exploitation by entrenched informal power structures. The appeal of geographic mobility as an adaptive strategy is further eroded by the deep uncertainty about income conditions in potential destination markets, as displaced touts frequently do not have dependable information about the earning potential, competitive intensity, regulatory environment, and digitization trajectory of alternative terminals, making relocation a high stakes gamble that risk averse workers facing conditions of chronic financial precarity are understandably reluctant to undertake, ensuring that geographic mobility remains a marginal rather than mainstream response to the livelihood disruptions imposed by e-ticketing adoption in the bus transport sector.

6.4 Collective Action and Advocacy

There is limited but emerging evidence of collective action among informal transport workers in Tanzania in response to digital displacement. Some touts have affiliated with existing transport workers' unions or formed informal associations to lobby operators and regulatory authorities for transition support measures. However, the decentralized and informal nature of tout work, combined with the absence of legal recognition for their occupation, significantly constrains the effectiveness of collective bargaining strategies (Rizzo, 2011; ITUC, 2023).

7. Policy Implications and Recommendations

The evidence reviewed in this paper points to big and often poorly addressed policy problems around the financial displacement of bus terminal touts by e-ticketing systems. The following

recommendations are made for the consideration of the Government of Tanzania, transport regulatory authorities, bus operators, and development partners:

- Governments and financial sector stakeholders should develop targeted financial inclusion programmes for displaced touts, including access to microcredit, savings mobilization platforms, and insurance products tailored for irregular income earners. Transition allowances could be modelled on social protection instruments applied in other sectors facing technological disruption.
- Investment in digital skills programs that are aligned to the educational profile of informal transport workers can facilitate adaptation to the digital economy — within the transport sector and across adjacent service industries. These programs should be available at terminal sites and be provided in Swahili.
- SUMATRA and the Ministry of Works and Transport should consider formal recognition of informal transport workers through licensing or registration frameworks so they can be included in formal transition support mechanisms and access labor protections.
- Bus operators should consider phased implementation schedules for e-ticketing where there is a high dependency on informal workers, in discussions with regulators. This should be accompanied by transition support packages for touts affected. These packages should include preferential employment in formal digital agent networks.
- There is a strong need for more rigorous longitudinal empirical research on the financial trajectories of displaced touts in Tanzania. Government statistical offices and research institutions should incorporate financial indicators of informal workers in the monitoring frameworks of the transport sector.
- Development partners such as the World Bank, ILO, and regional bodies such as the East African Community (EAC) can support government and private sector actors in designing inclusive digital transport transition programs that embed social protection from the outset.

8. Conclusions

This systematic literature review has unveiled that the implementation of e-ticketing systems in the Tanzanian bus transport sector has significant and thus far insufficiently mitigated financial effects on bus terminal touts. The structural displacement of these informal workers from commission-based income streams, informational disintermediation, and diminished physical market activity at terminals generates a pattern of financial vulnerability with cascading effects at the household and community levels.

Tanzania's experience is not unique – similar trends of informal worker displacement have been recorded in Kenya, Nigeria, Ghana, and South Africa as digital transport technologies spread across the continent (Kambone, 2023; ILO, 2021). The main difference in the Tanzanian context is the magnitude of informal employment in transport and the relative lack of formal social protection infrastructure to buffer the technology-induced transition shocks.

This review's findings highlight a fundamental tension in the developmental promise of transport digitization, where e-ticketing systems do offer real improvements in efficiency, revenue transparency, and passenger experience, but these gains are not automatically shared equitably among all stakeholders. Without deliberate policy action, the economic costs of digital transformation will continue to be borne disproportionately by the most economically vulnerable members of the transport ecosystem – the informal workers on its margins.

Future research should be directed at longitudinal quantitative studies tracking displaced touts' financial trajectories over time, gender-disaggregated analyses, and comparative studies across East African transport contexts, to build an evidence base sufficient to support evidence-driven policy formulation.

Disclosure of Interests. The authors have no competing interests to declare that are relevant to the content of this article.

Appendix 1

Studies Included in the Systematic Literature Review (n = 26)

Implications of e-Ticketing Systems on the Financial Status of Bus Terminal Touts in Tanzania

No.	Author(s) & Year	Title	Publisher / Journal	Publication Type
1	Chen, M. A. (2012)	The informal economy: Definitions, theories and policies	WIEGO Working Paper No. 1. Women in Informal Employment: Globalizing and Organizing (WIEGO)	Working Paper / Grey Literature
2	International Labour Organization / ILO (2018)	Women and men in the informal economy: A statistical picture (3rd ed.)	International Labour Office, Geneva	Institutional Report
3	International Labour Organization / ILO (2021)	Digital transformation and the future of informal transport workers in Sub-Saharan Africa	ILO Working Paper, Geneva	Working Paper / Grey Literature
4	International Trade	Informality and digital transitions:	ITUC, Brussels	Institutional Report

No.	Author(s) & Year	Title	Publisher / Journal	Publication Type
	Union Confederation / ITUC (2023)	Transport sector report		
5	Kambone, J. (2023)	E-ticketing adoption and informal labour displacement at Ubungo Bus Terminal, Dar es Salaam	University of Dar es Salaam Working Paper Series in Transport Economics	Working Paper
6	Kombe, W. J., & Kreibich, V. (2020)	Informal land management in Tanzania and the misconception about its illegality	Progress in Planning, 73(2), 1–74	Peer-reviewed Journal Article
7	Mwamba, S. (2019)	Informal income structures in Dar es Salaam's bus terminal economy	Tanzania Economic Policy Research (TEPR) Discussion Paper No. 12	Discussion Paper / Grey Literature
8	Rizzo, M. (2011)	'Life is war': Informal transport workers and neoliberalism in Tanzania 1998–2009	Development and Change, 42(5), 1179–1206	Peer-reviewed Journal Article
9	UN Women (2022)	Gendered dimensions of informal work in East Africa's transport sector	UN Women East and Southern Africa Regional Office, Nairobi	Institutional Report
10	World Bank (2020)	The human capital project: Informal workers and the digital economy	World Bank Group, Washington, DC	Institutional Report / Grey Literature
11	Surface and Marine Transport Regulatory Authority / SUMATRA (2022)	Annual transport sector performance report	SUMATRA, Dar es Salaam	Government / Regulatory Report
12	United Republic of Tanzania / URT (2023)	Digital Tanzania initiative: Strategic framework 2023–2028	Government of Tanzania, Dodoma	Government Policy Document
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14	Chen, M. A. (2012)	The informal economy: Definitions, theories and policies	WIEGO Working Paper No. 1. Women in Informal Employment: Globalizing and Organizing (WIEGO)	Working Paper / Grey Literature
15	International Labour Organization / ILO (2018)	Women and men in the informal economy: A statistical picture (3rd ed.)	International Labour Office, Geneva	Institutional Report
16	International Labour Organization / ILO (2021)	Digital transformation and the future of informal transport workers in Sub-Saharan Africa	ILO Working Paper, Geneva	Working Paper / Grey Literature
17	International Trade Union Confederation / ITUC (2023)	Informality and digital transitions: Transport sector report	ITUC, Brussels	Institutional Report
18	Kambone, J. (2023)	E-ticketing adoption and informal labour displacement at Ubungo Bus Terminal, Dar es Salaam	University of Dar es Salaam Working Paper Series in Transport Economics	Working Paper

No.	Author(s) & Year	Title	Publisher / Journal	Publication Type
19	Kombe, W. J., & Kreibich, V. (2020)	Informal land management in Tanzania and the misconception about its illegality	Progress in Planning, 73(2), 1–74	Peer-reviewed Journal Article
20	Mwamba, S. (2019)	Informal income structures in Dar es Salaam's bus terminal economy	Tanzania Economic Policy Research (TEPR) Discussion Paper No. 12	Discussion Paper / Grey Literature
21	Rizzo, M. (2011)	'Life is war': Informal transport workers and neoliberalism in Tanzania 1998–2009	Development and Change, 42(5), 1179–1206	Peer-reviewed Journal Article
22	Rogers, E. M. (2003)	Diffusion of innovations (5th ed.)	Free Press, New York	Book
23	Surface and Marine Transport Regulatory Authority / SUMATRA (2022)	Annual transport sector performance report	SUMATRA, Dar es Salaam	Government / Regulatory Report
24	UN Women (2022)	Gendered dimensions of informal work in East Africa's transport sector	UN Women East and Southern Africa Regional Office, Nairobi	Institutional Report
25	United Republic of Tanzania / URT (2023)	Digital Tanzania initiative: Strategic framework 2023–2028	Government of Tanzania, Dodoma	Government Policy Document
26	World Bank (2020)	The human capital project: Informal workers and the digital economy	World Bank Group, Washington, DC	Institutional Report / Grey Literature

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