Journal of Industrial Engineering & Management Research

http://www.jiemar.org e-ISSN : 2722-8878

Vol. 6 No. 6 – December 2025

The Impact of Standard Gauge Railway Transport Service Quality on Customer Satisfaction: A Case of Dar Es Salaam to Dodoma route, Tanzania

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Abstract *- This study investigated how different service quality dimensions affect customer satisfaction with Tanzania's Standard Gauge Railway (SGR) services. Motivated by growing demand for efficient and customer-focused rail transport, the research employed a quantitative design, surveying 168 passengers using structured questionnaires. The objective was to understand how elements like assurance, reliability, tangibility, responsiveness, and empathy influence passenger satisfaction and to provide actionable insights for improving SGR operations. Descriptive statistics summarized passenger perceptions, while multiple regression analyzed the strength and significance of each service quality dimension's impact. Results showed that assurance, reliability, and tangibility positively and significantly influenced customer satisfaction, highlighting passengers' appreciation for skilled staff, dependable services, and a clean, modern railway environment. In contrast, responsiveness had a weak, insignificant effect, and empathy unexpectedly had a significant negative impact, indicating possible issues in how staff address individual passenger needs. Assurance and reliability emerged as the strongest predictors of satisfaction, followed by tangibility. The study recommends that management investigate the negative perception of empathy, potentially through staff training on inclusive and personalized care, and enhance responsiveness by improving complaint handling. Continuous investment in infrastructure and cleanliness is also advised to maintain and increase passenger satisfaction.*

Keywords - ***Standard Gauge Railway, Assurance, Reliability, Responsiveness, Tangibility, Empath and SERVQUAL model.***

I.INTRODUCTION

The transportation sector in Tanzania has experienced significant reforms in recent years, marked by major investments in infrastructure aimed at improving service delivery and efficiency in both freight and passenger transport. Among these developments, the SGR stands out as a transformative project designed to provide fast, reliable, and comfortable rail transport services. Spanning regions such as Dar es Salaam to Dodoma, the SGR was developed to meet the growing need for modern transportation and improve customer satisfaction in public transit (Wu et al., 2011)

Globally, the quality of rail transport services has been recognized as a key factor influencing customer satisfaction, with developed nations offering case studies on the role of service quality in shaping passenger experiences. In China, the High-Speed Rail (HSR) network has been widely praised for its punctuality, cleanliness, and speed, leading to consistently high levels of customer satisfaction and fostering regional economic integration (Bin Adenan, 2018). In the United States, Amtrak's focus on passenger comfort, customer

service, and on-time performance in the northeast corridor has positioned it as a viable alternative to air and road transport (Geetika & Nandan, 2018). Similarly,

In Africa, where rail modernization has been slower, several countries have begun investing in service-oriented railway systems. Kenya's SGR from Mombasa to Nairobi, for example, has achieved commendable customer satisfaction due to improved travel time, affordability, and safety (Githaiga, 2021). However, some criticisms remain regarding service delays and limited frequency of trips (Elphas, 2019). Nigeria's Abuja–Kaduna railway has emphasized safety and comfort in its operations, helping to shift public perception toward rail as a convenient and secure mode of transport (Muhammad & Gwarzo 2023).

In Tanzania, the introduction of the SGR has brought renewed interest in rail transport, with many passengers shifting from bus services to the more modern railway alternative. Compared to traditional rail and bus transport, the SGR offers enhanced seating comfort, onboard services, cleanliness, punctuality, and digital ticketing, all of which contribute to customer satisfaction (Stanley, 2021). These improvements align with global standards and mark a significant departure from the unreliable services often associated with older rail infrastructure (Lwesya & Jaffu, 2017).

Understanding the extent to which service quality attributes of the SGR influence customer satisfaction is crucial for ensuring the sustainability of the rail sector and for informing policy improvements. While infrastructure investment is important, the quality-of-service delivery such as responsiveness, reliability, empathy, and assurance ultimately determine passenger loyalty and public trust in the system (Yilmaz & Ari, 2017). Therefore, this study seeks to assess the impact of SGR transport service quality on customer satisfaction, with a focus on passenger experiences along the Dar es Salaam to Dodoma corridor, as a basis for enhancing operational effectiveness and service excellence in Tanzania's railway sector.

Statement of the Problem

The launch of Tanzania's SGR from Dar es Salaam to Dodoma is a landmark achievement in the country's transport modernization agenda, promising fast, comfortable, and high-quality travel (Tanzania Railway Corporation, 2019). Despite this progress, questions remain about whether the actual service quality meets passenger expectations and results in lasting satisfaction (Mugendi, 2021). While significant investments have been made in infrastructure, modern coaches, and digital ticketing, limited empirical research exists on how specific service quality dimensions tangibility, reliability, responsiveness, assurance, and empathy influence customer satisfaction on the SGR (Dr. Mohit & Dr. Mayank, 2021).

Customer satisfaction is a vital indicator of public transport effectiveness, yet it has been underexplored in Tanzania's railway context, particularly considering the SGR's unique service standards. Globally, studies show that superior service quality is linked to customer retention and operational sustainability, whereas neglecting satisfaction risks underuse and financial losses (Dibiku, 2024). Moreover, the lack of structured feedback and service evaluations challenges efforts to maintain quality on the SGR. The absence of localized research limits Tanzania Railways Corporation's ability to implement targeted improvements (Githaiga, 2021). This study addresses these gaps by investigating how service quality dimensions affect customer satisfaction on the Dar es Salaam Dodoma SGR route, offering crucial insights for enhancing service delivery and ensuring the railway's long-term success.

Study Objectives

i. To determine the effects of tangibility of Standard Gauge Railway Service on passenger's satisfaction.
ii. To examine the effects of reliability of Standard Gauge Railway Service on passenger's satisfaction.
iii. To analyses the effects of responsiveness of Standard Gauge Railway Service on passenger's satisfaction.
iv. To assess the effects of empathy of Standard Gauge Railway Service on passenger's satisfaction.
v. To evaluate the effects of assurance of Standard Gauge Railway Service on passenger's satisfaction.

Literature Review

Theoretical Review : SERVQUAL Model (Service Quality Model)

The SERVQUAL Model, developed by Parasuraman, Zeithaml, and Berry in 1988, provides a framework for evaluating service quality based on the gap between customer expectations and their actual experiences. Originally designed for the service industry, this model has since been widely adopted in transportation, healthcare, banking, and tourism to assess service delivery effectiveness and its influence on customer satisfaction. The model identifies five core dimensions of service quality: tangibility, reliability, responsiveness, assurance, and empathy each of which reflects a critical aspect of the service experience from the customer's perspective (Chingang, 2016).

The theory operates on key assumptions: that customer satisfaction is a result of how well the perceived service matches or exceeds expectations, and that these five dimensions can be measured to determine areas of strength and weakness within a service system. For instance, in the context of the SGR, tangible elements such as modern trains and clean facilities contribute to visual impressions of quality, while reliability and responsiveness reflect the consistency and promptness of service. Assurance and empathy relate to the knowledge, courtesy, and personalized care provided by the staff, which significantly shape passengers' satisfaction levels.

The strength of the SERVQUAL Model lies in its structured, customer-centered approach to evaluating service performance and identifying areas for improvement. It allows organizations such as the SGR to benchmark service quality and align operations with passenger expectations. However, a limitation of the model is its subjectivity it depends heavily on individual perceptions, which can be influenced by cultural, psychological, or situational factors. Despite this, the SERVQUAL Model remains a powerful analytical tool in service quality research, particularly for public transport systems aiming to enhance customer satisfaction and operational efficiency.

Empirical Literature Review: Tangibility in SGR Services

Tangibility, as one of the key dimensions of service quality in the SERVQUAL model, refers to the physical facilities, equipment, personnel appearance, and communication materials associated with a service (Lesutis, 2022). In the context of SGR services, tangibility includes the quality and cleanliness of passenger cabins, seating arrangements, ticketing facilities, signage, and the visual appeal of stations and trains.

Several empirical studies have highlighted the importance of tangibility in shaping passenger satisfaction and perceived service quality. For instance, a study by Lape et al., (2023) on Kenya's SGR revealed that modern

station infrastructure, onboard cleanliness, and the visual appeal of the trains significantly influenced passengers' comfort and satisfaction. These tangible elements were found to be critical in attracting and retaining customers, especially when compared to the typically overcrowded and poorly maintained road transport options.

In Tanzania, Lwesya & Jaffu (2017) conducted a study assessing passengers' perceptions of the newly introduced SGR services between Dar es Salaam and Morogoro. Their findings indicated that passengers rated tangibility particularly the modern seating designs, digital displays, air conditioning, and station aesthetics as one of the most satisfactory aspects of the service. This was echoed by Geetika & Nandan (2018), who noted that visible investment in physical infrastructure positively influenced public perception of the rail system's reliability and efficiency.

Reliability of SGR Services

Reliability, a critical dimension of service quality in the SERVQUAL model, refers to the ability of a service provider to deliver promised services dependably and accurately (Lape et al., 2023). In the context of SGR services, reliability encompasses punctuality, consistency in schedule adherence, accurate ticketing, and the system's ability to handle passenger demand without disruptions.

An East African regional study by Chege et al. (2019) comparing traditional meter-gauge railways, SGR, and bus transport systems found that the SGR demonstrated superior reliability due to automated scheduling systems, centralized traffic control, and better maintenance practices. However, the study also highlighted challenges such as occasional service interruptions caused by power outages or technical faults, suggesting that further improvements in contingency planning could enhance reliability.

However, a quantitative study conducted by Komba & Joseph (2025) applied service performance data over a one-year period and observed that the SGR in Tanzania operated at a schedule adherence rate of over 85%, which is significantly higher than that of long-distance bus services. Their statistical analysis confirmed that high schedule reliability directly correlated with higher passenger satisfaction levels and increased willingness to recommend the service to others.

Responsiveness in SGR Services

Responsiveness, as defined in the SERVQUAL model, refers to the willingness and ability of service providers to help customers and provide prompt service (Elphas, 2019). In the context of SGR services, responsiveness encompasses staff attentiveness, timely communication, the handling of inquiries and complaints, and the overall swiftness in addressing passenger needs.

Recent studies in East Africa have explored the responsiveness of rail services, particularly the SGR, in comparison to road-based transportation systems. A study by Dibiku (2024) examined customer service responsiveness at SGR stations in Kenya and found that passengers valued the prompt ticketing services, staff availability at boarding points, and real-time assistance for boarding and luggage issues. Their findings indicated that responsiveness was a key factor enhancing passenger satisfaction and loyalty toward the SGR.

In Tanzania, Julius (2016) conducted a survey among SGR users on the Dar es Salaam Morogoro route to evaluate how effectively staff responded to passenger concerns. The study revealed that over 70% of respondents were satisfied with the promptness and politeness of SGR personnel, particularly in resolving issues

related to booking errors, travel updates, and onboard needs. These outcomes suggest that the SGR has made significant progress in training its workforce to be service-oriented and responsive.

Similarly, a broader East African study by Lieophairot & Rojniruttikul (2023) highlighted the responsiveness of the SGR as a major differentiator from traditional road transport services, where delays in customer service and lack of formal complaint-handling mechanisms often frustrate passengers. The study emphasized that the structured operational procedures and accountability systems within the SGR framework enabled quicker resolution of passenger complaints.

However, some challenges persist. A mixed-method study by (Wanjiku, 2015) noted gaps in responsiveness during peak travel seasons, particularly delays in addressing customer service queries and the slow update of digital platforms with real-time travel information. Shan et al. (2024) found that while SGR staff were generally responsive in person, response times to inquiries made through digital channels such as email and mobile apps lagged behind expectations, highlighting the need for more robust ICT support systems.

Empathy of SGR Service Providers

Empathy, as conceptualized in the SERVQUAL model, refers to the ability of service providers to offer caring, individualized attention to customers (Parasuraman et al., 1988). In the context of SGR services, this involves staff showing genuine concern for passengers, understanding their specific needs, and providing personalized assistance throughout the travel experience. Several studies have highlighted the significance of empathetic service in enhancing the quality of passenger rail transport. The study conducted by Dr. Bhagyalakshmi & Dr. Vasudevan (2020) ,passengers praised SGR attendants for their courtesy, attentiveness to elderly travelers, and willingness to assist those unfamiliar with digital ticketing systems.

Similarly, Ochieng and Wanjiru (2021), in their assessment of SGR operations in Kenya, found that empathy was a key driver of passenger satisfaction, especially among families and people with special needs. The study emphasized that personalized greetings, assistance with heavy luggage, and the provision of priority boarding for vulnerable groups reflected a human-centered approach to service delivery.

However, not all findings were wholly positive. A study by Bwire and Kituku (2022) revealed that empathy levels varied significantly across different SGR stations, with some rural terminals experiencing staff shortages and a lack of specialized training on customer care. Passengers at these locations reported feelings of neglect and limited assistance, particularly during emergencies or delays.

Assurance in Standard Gauge Railway Services

Assurance, another critical dimension of the SERVQUAL model, refers to the knowledge and courtesy of employees and their ability to inspire trust and confidence in passengers (Parasuraman et al., 1988). In railway services, this includes the professionalism of staff, safety measures, information accuracy, and overall dependability of the system. Some studies across the region suggest that assurance is one of the strongest attributes of SGR services. In a study by Mbwana & Kessy (2022) on passenger perceptions in Tanzania's SGR corridor, over 80% of respondents reported feeling secure due to visible safety protocols, well-trained personnel, and consistent adherence to departure schedules. These factors contributed to a high level of trust in the rail service as a reliable mode of transport.

In Kenya, Makori and Chege (2021) found that the assurance offered by the SGR was a major contributor to its growing market share. Passengers expressed confidence in the system due to its modern infrastructure, the professionalism of its staff, and the enforcement of safety and hygiene protocols especially in the post-COVID-19 era. The presence of trained emergency response personnel and clear travel guidelines further reinforced this perception. Despite these strengths, some gaps in assurance remain. According to Kilonzo et al. (2023), occasional issues such as inconsistent ticketing communication, delayed announcements, and lack of multilingual support at certain stations can negatively impact passengers' confidence.

Research Gap

The existing literature on the SGR in Tanzania and across East Africa has largely focused on infrastructure development, travel time reduction, and economic impacts associated with improved rail connectivity. Studies by Kamumbu & Zhao (2020), Mchome & Nzoya (2023), and Mbwana & Kessy (2022) have contributed to a growing body of knowledge on the operational efficiency and strategic benefits of the SGR. However, there remains a notable research gap concerning the detailed assessment of service quality dimensions particularly from the passenger perspective within the context of SGR services in Tanzania. While previous studies such as Irene & Wanjala (2022) and Githaiga (2021) have evaluated customer satisfaction in rail systems, their findings are often generalized and lack specificity in addressing the SERVQUAL-based components such as tangibility, reliability, responsiveness, empathy, and assurance. Moreover, many of these studies are either situated in countries with more developed railway systems or fail to account for the unique challenges in Tanzania's socio-economic and infrastructural landscape. Particularly underexplored are the passenger perceptions of service quality attributes and how these influence user satisfaction and travel behavior in a developing country context. Furthermore, although the SGR is often compared to road transport in terms of travel time and cost, there is limited empirical analysis evaluating service quality as a competitive differentiator between the two modes of transport. This study seeks to fill this critical gap by empirically examining the responsiveness, reliability, assurance, empathy, and tangibility of SGR services in Tanzania, using a passenger-centric approach. In doing so, it aims to provide actionable insights for improving service quality, enhancing user experience, and informing transport policy to support sustainable rail usage.

Conceptual Framework

The conceptual framework outlines the relationship between the independent and dependent variables. In this study, the independent variables are the key service quality dimensions derived from the SERVQUAL model, namely tangibility, reliability, responsiveness, assurance, and empathy. These variables represent critical aspects of passenger perceptions and expectations regarding the quality of services provided by the SGR in Tanzania.

The dependent variable is passenger satisfaction with SGR services, which reflects the overall effectiveness of the SGR in meeting user expectations and enhancing travel experience. This framework posits that improvements in the identified service quality dimensions were led to higher passenger satisfaction, which in turn may strengthen the competitive position of the SGR in Tanzania's passenger transport landscape.

Journal of Industrial Engineering & Management Research
http://www.jiemar.org e-ISSN : 2722-8878
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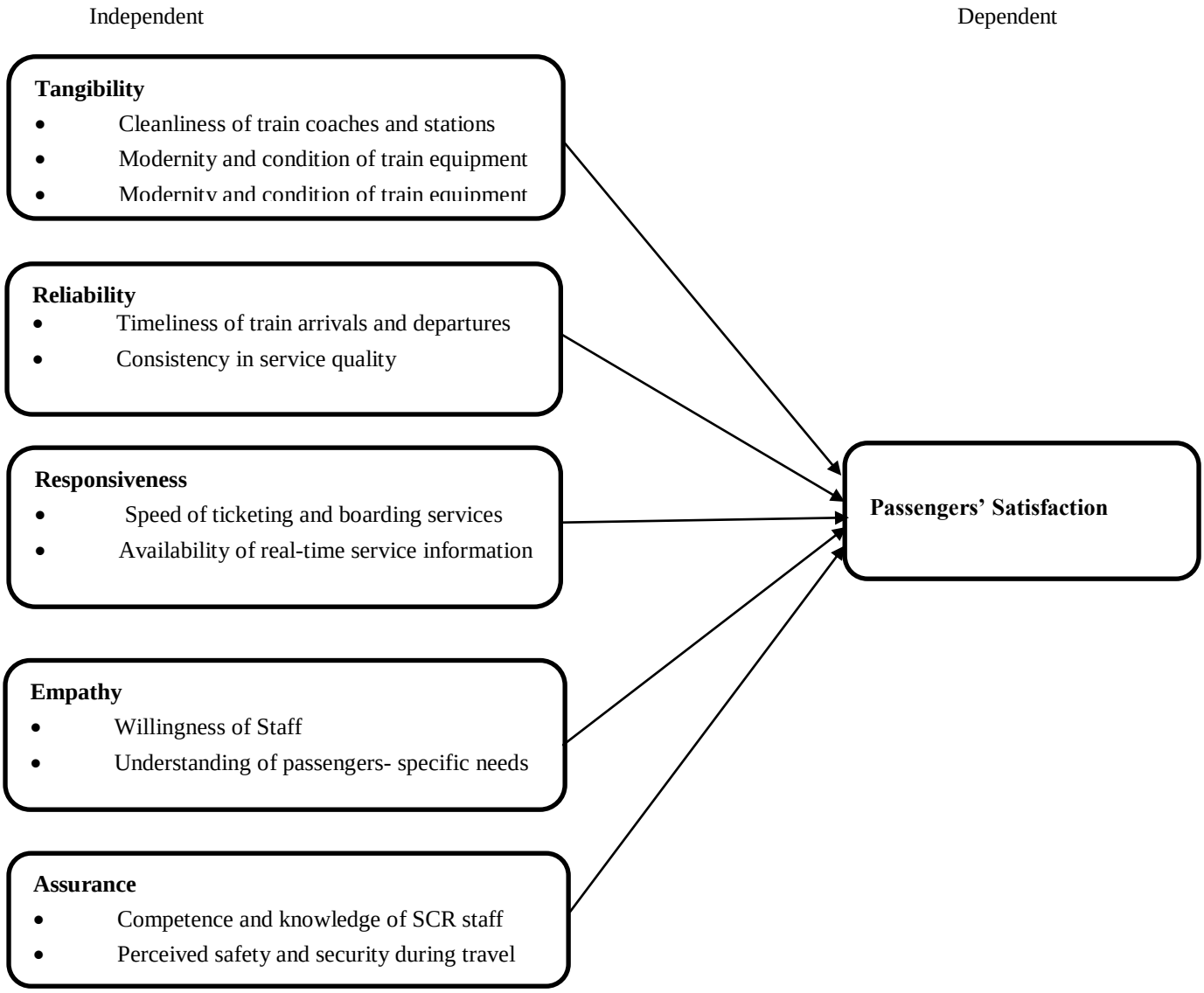

Figure 1: Conceptual framework

Source: Researcher (2025)

II.METHOD

Research Philosophy and Design

This study adopts a post-positivist philosophy to objectively investigate the quality and competitiveness of SGR services. A quantitative, descriptive design was used to capture and describe current service delivery and passenger perceptions.

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Study Area and Population

The research focused on the Dar es Salaam - Dodoma route, a strategic corridor for Tanzania's SGR linking the economic and administrative capitals. The population included approximately 3,043 individuals directly involved with the SGR system: officials, transport operators, station staff, and passengers.

Sample Size and Sampling

Using Slovin's formula with a 7% margin of error, a sample size of 191 participants was determined. Stratified random sampling was employed to select respondents proportionally from the four groups, ensuring balanced representation across officials, operators, staff, and passengers.

Data Collection

Primary data were collected through structured questionnaires containing closed-ended questions focused on cost-effectiveness, travel time, reliability, responsiveness, and passenger satisfaction. Secondary data were obtained through documentary review of SGR reports, policies, and government transport plans.

Data Analysis

Data were analyzed using IBM SPSS software. Descriptive statistics such as frequencies, means, and standard deviations summarized the data, while inferential statistics including correlation and regression analysis were used to explore relationships among service quality factors and passenger satisfaction.

Validity, Reliability, and Ethics

Reliability was assessed via Cronbach's alpha, with all key variables exceeding the 0.7 threshold, confirming internal consistency. Content validity was ensured through literature review and expert consultation. Ethical protocols included obtaining informed consent, ensuring voluntary participation, maintaining anonymity and confidentiality, and securing institutional ethical clearance.

III. PRESENTATION OF FINDINGS

The analysis and interpretation of the research findings reveal important insights into the quality and competitiveness of SGR services. The study highlights key outcomes drawn from field data collected through questionnaires and documentary reviews, supported by tables to provide clear and comprehensive understanding.

General Attributes of the Respondents.

The study achieved a total of 168 respondents from the targeted SGR stakeholders, including officials, transport operators, station staff, and passengers. Regarding gender distribution, the majority of respondents were male, representing 56.5%, while females accounted for 43.5% of the participants. Most respondents (47.6%) were aged between 26 and 30 years, followed by 23.2% who were above 41 years. The education level was predominantly degree holders, comprising 46.4%, with 25% having attained a master's qualification. In terms of

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http://www.jiemar.org e-ISSN : 2722-8878
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work experience, over half of the respondents (51.2%) reported between 1 to 5 years of experience within the SGR system. This demographic profile offers a comprehensive view of the diverse background of participants contributing to the study findings.

Table 2.1: Demographic Characteristics of Respondents

Category	Variable	Frequency	Percent (%)
Gender	Male	95	56.5%
	Female	73	43.5%
Age	18–25	21	12.5%
	26–30	80	47.6%
	31–35	16	9.5%
	36–40	12	7.1%
	Above 41	39	23.2%
Education	Certificate	17	10.1%
	Diploma	31	18.5%
	Degree	78	46.4%
	Masters	42	25.0%
Experience	1–5 Years	86	51.2%
	6–10 Years	39	23.2%
	11–15 Years	15	8.9%
	16–20 Years	10	6.0%
	21–25 Years	18	10.7%
Total		168	100.0%

Source; Field data (2025)

Findings Based on Research Objectives

This section presents descriptive statistics based on respondents' level of agreement with statements across all SERVQUAL dimensions including Assurance, Reliability, Responsiveness, Empathy, and Tangibility. Respondents were asked to indicate their agreement using the following Likert scale: Strongly Disagree (5), Disagree (4), Neutral (3), Agree (2), and Strongly Agree (1).

Assurance in Standard Gauge Railway Services

The researcher aimed to assess the role of assurance in influencing customer satisfaction with SGR services, particularly along the Dar es Salaam to Dodoma route as shown in Table 4.3.

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Table 2. 2: Assurance in Standard Gauge Railway Services
Source: Field Data (2025)

Statements	Mean	Standard Deviation
SGR staff are knowledgeable and can answer passengers' questions clearly.	1.70	0.671
Staff at SGR demonstrate professionalism in service delivery.	2.66	1.388
Passengers feel safe and secure while traveling on the SGR.	1.78	0.704
The behavior of staff instills confidence in passengers.	2.39	1.271

The results show strong passenger agreement that SGR staff are knowledgeable and able to answer questions, indicating high trust in their competence. Passengers also feel safe and secure during travel, reflecting effective safety measures. However, perceptions of staff professionalism vary more widely, suggesting inconsistencies in service delivery across personnel or shifts. Similarly, confidence in staff behaviour showed moderate agreement but with some mixed views, implying that not all passengers feel equally reassured by staff demeanour. Overall, while safety and staff knowledge are strengths, there is room to improve professionalism and consistent behavior. Enhancing staff training focused on customer engagement and professional conduct could further strengthen passenger confidence and satisfaction, particularly in the assurance dimension of service quality.

Responsiveness of SGR Staffs

Table 2.3 presents the respondents' perceptions regarding the responsiveness of service delivery in SGR operations.

Table 2. 3: Responsiveness in Standard Gauge Railway Services

Statements	Mean	Standard Deviation
SGR staff are always willing to assist passengers when needed.	1.74	0.694
Passenger complaints and concerns are handled promptly.	1.04	0.200
Staff respond quickly when passengers request support.	2.00	0.875
Emergency responses are effectively handled during train operations.	1.93	0.808

Source: Field data (2025)

The results show strong agreement that SGR staff are willing to assist passengers, reflecting positive perceptions of responsiveness. Handling of complaints received overwhelming approval, indicating an effective complaint management system. However, the statement on quick staff response to support requests showed slightly less favorable views, with some variability in passenger experiences, suggesting inconsistent responsiveness. Emergency response effectiveness was generally rated positively, though some variation in perceptions indicates room for better communication of procedures. Overall, SGR demonstrates high responsiveness, especially in

assisting passengers and managing complaints, but there are opportunities to improve consistency in support response times and emergency handling to enhance overall service quality.

Empathy of SGR Staff

Table 2.4 presents the empathy dimension of service quality in SGR transport from Dar es Salaam to Dodoma. This dimension assesses the degree to which SGR staff provide caring, individualized attention to passengers.

Table 2.4: Empathy in Standard Gauge Railway Services

Statements	Mean	Standard Deviation
SGR staff treat passengers with courtesy and respect.	1.79	0.788
Staff understand and consider the individual needs of passengers.	2.00	0.833
Special assistance is available for passengers with disabilities or the elderly.	1.70	0.901
Passengers feel valued and prioritized when using the SGR.	1.47	0.501

Source: Field Data (2025)

The results show that SGR staff are generally perceived as courteous and respectful, with most passengers agreeing that staff treat them well, reflecting strong empathy in service delivery. While many passengers feel their individual needs are understood, responses varied, indicating some gaps in personalized attention. Special assistance for the elderly and disabled received positive recognition, though with some inconsistency across locations or staff. Passengers strongly agreed that they feel valued and prioritized, highlighting a passenger-centric culture. Therefore, SGR performs well in empathy, making travelers feel respected and supported. However, the variation in personalized care suggests a need for improved consistency. Enhancing staff training on inclusive practices and proactive support for vulnerable groups would further strengthen empathy and improve the passenger experience.

Tangibility of SGR Services

The researcher intended to find out the level of tangibility in SGR services by examining passengers' perceptions of the physical facilities, cleanliness, staff appearance, and modernity of station design.

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Table 2.5: Tangibility of SGR Services

Statements	Mean	Standard Deviation
SGR stations and trains are clean and well-maintained.	1.68	0.897
The seating, toilets, and waiting areas are in good condition.	1.63	0.755
SGR employees are neat and appear professional.	2.15	1.187
The design and layout of SGR stations are modern and attractive.	1.62	0.788

Source: Field Data (2025)

The results indicate strong passenger agreement that SGR stations are modern and attractive, with a mean score of 1.62. Passengers are also satisfied with station facilities, such as seating, toilets, and waiting areas, which scored 1.63 on average. Cleanliness and maintenance of stations and trains received positive ratings with a mean of 1.68. However, staff appearance and professionalism had a higher mean of 2.15, showing slightly less strong agreement and greater variation in passenger perceptions. This suggests some inconsistencies in how passengers view staff neatness and professionalism compared to other infrastructure aspects.

Reliability of SGR Services

The researcher aimed to evaluate the reliability of the SGR services by examining respondents' perceptions on schedule consistency, punctuality, system breakdowns, and information accuracy.

Table 2.6: Reliability of SGR Services

Statements	Mean	Standard Deviation
The SGR service operates on a consistent and dependable schedule.	1.98	1.029
SGR ensures that passengers arrive at their destinations as planned.	1.90	0.933
Train breakdowns or delays are rare occurrences in the SGR system.	2.26	1.089
The SGR system provides accurate and timely information to staff and passengers.	1.98	0.789

Source: Field Data (2025)

The results IN Table 2.6 indicate that most respondents agree SGR operates on a consistent and dependable schedule, with a mean of 1.98, though some variation exists in experiences. Passengers also showed strong confidence in arriving at destinations on time, reflected by a mean of 1.90 and less variability. Perceptions of train breakdowns were more mixed, with a higher mean of 2.26, suggesting occasional disruptions experienced by some passengers. Communication and information accuracy received positive consensus, with a mean of 1.98 and low variability, indicating reliable dissemination of travel details. Overall, SGR is viewed as reliable in scheduling and communication, but reducing breakdowns and delays could further improve passengers' perceptions of system dependability.

Customer Satisfaction with SGR Services

The researcher assessed customer satisfaction with SGR services by examining respondents' perceptions of service quality, comfort, pricing fairness, staff responsiveness, and overall travel experience.

Table 2.7: Customer Satisfaction with SGR Services

Statements	Mean	Standard Deviation
I am generally satisfied with the services provided by SGR.	2.17	1.162
SGR services meet my expectations as a passenger.	2.24	1.108

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Statements	Mean	Standard Deviation
I would recommend SGR services to friends and family based on my experience.	2.37	1.151
I intend to continue using SGR services for future travel.	2.27	0.938
Overall, I am happy with the quality and reliability of the SGR transport service.	2.42	1.092

Source: Field Data (2025)

Respondents expressed a moderately high level of satisfaction with SGR services, with a mean score of 2.17. Many passengers felt the services met their expectations, reflected by a mean of 2.24. The highest mean of 2.42 related to overall happiness with SGR's quality and reliability, though this showed more varied opinions. Notably, intentions to continue using SGR were consistent, indicated by the lowest standard deviation of 0.938. These findings suggest a generally positive perception of SGR, with passengers willing to continue usage and recommend the service. However, opportunities remain to improve consistency in meeting customer expectations and enhancing overall quality and reliability through targeted service and engagement improvements.

Inferential statistics

A multiple linear regression analysis was carried out to test the relationship between the independent variables and dependent variables. The findings are shown in Tables 4.6, 4.7, and 4.8 respectively.

Table 2.8: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.988a	.976	.976	.16435

a. Predictors: (Constant), Tangibility, Responsiveness, Assurance, Empathy, Reliability

b. Dependent Variable: Satisfaction

Source: Field Data (2025)

The multiple correlation coefficient (R = 0.988) indicates a very strong positive relationship between the five predictors and customer satisfaction. With an R Square of 0.976, the model explains 97.6% of the variance in customer satisfaction, demonstrating excellent explanatory power. The Adjusted R Square also equals 0.976, confirming the model's reliability without overfitting. Additionally, the low Standard Error of the Estimate (0.16435) shows that the predicted satisfaction values closely match the observed ratings, indicating highly accurate model predictions and strong overall fit to the data.

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Table 2.9: Analysis of variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	180.818	5	36.164	1338.825	.000b
	Residual	4.376	162	.027		
	Total	185.194	167			

a. Dependent Variable: Satisfaction

b. Predictors: (Constant), Tangibility, Responsiveness, Assurance, Empathy, Reliability

The regression analysis shows 5 degrees of freedom for regression (matching the number of predictors) and 162 for residuals, totaling 167. The mean square for regression (36.164) far exceeds that of residuals (0.027), indicating much greater explained than unexplained variance. The F-statistic is extremely high at 1338.825 with a p-value of 0.000, demonstrating that the model is statistically significant. This provides strong evidence that the five service quality dimensions collectively and significantly predict customer satisfaction at any conventional significance level ($p < 0.05$)..

Table 2. 10: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.205	.056		3.689	.000
Assurance	.622	.056	.560	11.200	.000
1Responsiveness	-.025	.100	-.014	-.250	.803
Reliability	.625	.090	.549	6.977	.000
Empathy	-.705	.084	-.469	-8.386	.000
Tangibility	.431	.062	.359	6.895	.000

a. Dependent variable: Customer satisfaction

Assurance positively and significantly affects customer satisfaction, with a strong impact indicated by a coefficient of 0.622 and a beta of 0.560. Reliability also shows a strong positive effect, increasing satisfaction through dependable service and accurate information. Tangibility positively influences satisfaction by enhancing physical service quality. Conversely, empathy has a significant negative effect, suggesting a disconnect between passenger expectations and actual experiences. Responsiveness shows a weak, non-significant negative relationship with satisfaction. Overall, assurance, reliability, and tangibility are key drivers of satisfaction with SGR services. The negative impact of empathy calls for further investigation into service delivery gaps, while responsiveness appears less influential in this context. Prioritizing improvements in staff competence, consistent operations, and facility quality can enhance customer satisfaction.

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IV. DISCUSSION OF THE FINDINGS

The study revealed that assurance is a critical driver of customer satisfaction with the Standard Gauge Railway (SGR) services. Passengers' trust in staff competence, professionalism, and the safety measures implemented significantly enhanced their overall satisfaction. This aligns with existing literature emphasizing that perceived competence and reliability of frontline staff play a pivotal role in shaping positive customer experiences in transport services. It highlights the importance of investing in continuous staff training and safety protocols to maintain high assurance levels, which directly influence passenger confidence and satisfaction.

Reliability also emerged as a strong and positive predictor of satisfaction. Dependable train schedules, consistent service delivery, and timely information contribute substantially to passengers' positive perceptions of the SGR. This finding underscores the essential nature of operational efficiency in rail transport, where punctuality and reliability are often key determinants of customer loyalty. The results suggest that efforts to minimize delays and provide accurate, real-time information can significantly improve the service's competitive edge and passenger retention.

Tangibility the physical aspects of the service such as cleanliness, station facilities, and staff appearance was found to positively impact satisfaction. This finding reflects the role of a well-maintained and visually appealing environment in enhancing the passenger experience. Clean, modern stations and professional staff appearance contribute to a perception of quality and care, reinforcing passengers' overall positive impressions of the service. Consequently, maintaining infrastructure and facility standards should be prioritized alongside operational improvements.

Interestingly, empathy showed a significant negative effect on customer satisfaction, which contrasts with typical expectations. This suggests a possible mismatch between passenger expectations regarding personalized care and how it is actually delivered by staff. It may indicate that while empathy is valued in theory, the current service delivery fails to meet passenger needs in this regard, potentially causing dissatisfaction. This finding calls for qualitative research to explore the nuances behind passengers' experiences and perceptions of empathy, with a focus on addressing gaps in personalized attention and special assistance.

Responsiveness did not have a significant impact on customer satisfaction in this study, indicating that promptness in assistance and complaint handling might be perceived as less critical compared to other service quality dimensions. However, variability in passenger experiences suggests inconsistencies in responsiveness that could be addressed to improve overall service perception. Taken together, these findings emphasize that while competence, reliability, and physical service quality strongly influence satisfaction, targeted improvements in empathy and responsiveness could further enhance the SGR passenger experience.

V. CONCLUSION AND RECOMMENDATIONS

Conclusion

This study concludes that service quality dimensions significantly impact customer satisfaction with Tanzania's Standard Gauge Railway services. Assurance, reliability, and tangibility were key positive contributors, highlighting passengers' appreciation for professionalism, dependable schedules, and well-maintained facilities. Conversely, responsiveness showed no significant effect, suggesting passenger perceptions of staff's promptness in addressing issues are limited. Empathy, while statistically significant, had a negative relationship with

satisfaction, indicating a gap between passenger expectations for personalized care and actual service delivery. This may reflect insufficient support for vulnerable groups such as the elderly or disabled. Overall, while SGR performs well in many service areas, improving responsiveness and empathy can enhance customer satisfaction further, promoting sustained ridership and long-term operational success.

Recommendations

Based on the study's findings, several recommendations are proposed to enhance customer satisfaction with SGR services. First, management should invest in staff training focused on improving responsiveness, especially in complaint handling, emergency response, and passenger assistance, to boost service readiness. Second, empathy-related services need strengthening by developing systems that provide personalized care for vulnerable groups such as the elderly, disabled, and pregnant women. Staff training should emphasize proactive recognition and support of individual needs, alongside implementing targeted feedback mechanisms. Finally, given the strong positive effects of assurance and reliability, ongoing efforts should maintain professional conduct, punctuality, and staff competence. Continuous performance monitoring, employee development, and infrastructure upkeep are essential, alongside revisiting service standards to better align with customer expectations.

Areas for Future Research

Future research should explore factors like pricing, accessibility, and digital ticketing in SGR services. Mixed-methods studies can provide deeper passenger and staff insights. Comparative analyses with other transport modes and longitudinal studies on customer satisfaction trends will offer broader and more comprehensive understanding of service quality over time.

ACKNOWLEDGMENT

I extend my sincere gratitude to my academic supervisor, Dr. Eva Luavi (PhD), for his invaluable guidance and support throughout the course of this study. I am equally grateful to the management and staff of the Tanzania Railway Corporation, for their cooperation and for providing the essential data that made this research possible. My appreciation also goes to all respondents for their time and contributions, which formed the foundation of this work. Special thanks are due to my family and friends for their unwavering encouragement, and to the National Institute of Transport for providing the resources and support that enabled the successful completion of this study.

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