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| RESEARCH ARTICLE

Evaluating Determinants of Public's Financial Readiness to Pay for Enhanced Bus Public Transport Options in Dar Es Salaam, Tanzania

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| ABSTRACT
Globally, most developing countries faces a continuing challenges on how to smoothern public transport operation. Users disatification on bus public transport service has forced customers struggling to shift from public transport to private transport. Private transports has faced them with the increased cost. This study evaluated the determinants of the public's financial readness to pay for the enhanced public transport options in Dar es salaam, Tanzania. Traveler distance identification, on road time waste, fare pricing and readness to pay for improved public transport was all evaluated. A primary survey data with a total of 296 respondents was analysed. The research results revealed that the mean readnesness to pay for major road routes was under Tanzanian shillings 750/=. Additionally, transport users was ready to pay the average amount of Tanzanian shillings 1100/= per trip within Dar es salaam city. Morever, all major routes operating under Tanzanian shillings 500 , transport users were ready to pay average amount of Tanzanian shillings 880 per trip, routes operating under Tanzanian shillings 450, transport users were ready to pay the average amount of Tanzanian shillings.780 per trip, and the routes operating under Tanzanian shillings 400, transport users were ready to pay the average amount of Tanzanian shillings 750 per trip. The results also revealed that travel distance and travel time have a significant effect on the readness to pay for improved public transport. Bases on this research findings, researcher recommend public transport government polic review from time to time to enhance the continuation of time to time improvement of the public bus service quality.

| KEYWORDS

Public's financial readness to pay, Public bus Transport and fare pricing

| ARTICLE INFORMATION

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1. INTRODUCTION

Worldwide all governments continues to struggle on how to improvement public transport services. Apart from city commuter train, motor cycle, tricycle (Bajaji) and all other means of transport, bus public transportations has been highly essential in ensuring public transportation to community (Kodukula, 2019). In both developing and developed countries, sustainable and high-quality public transport has been the top most priority for government and city planners. This have been indicated by increased number of people shifting from rural to arban areas, Eboli and Mazzulla, (2019)**.** The government need for public bus planning has become inevitable to ensure the increased arban growth ration not to compromise with the transport quality. In the same vein, societies relies on the government transport planners as the most powerful component in promoting and planning the quality of the bus public transport service as it is part of the government component overseers of urban growth (Hunge, 2019). Moreover, in political aspect, one of the most popular transportation services in the world is the comfort of passengers specifically in their public bus transportation. Dell 'Olio *et al.*,(2017) contended that, in a global perspective, passenger readness to pay have been promoted to them through their confortability of quality public bus transport service provided.

In Africa, public bus transport quality confortability, varies from country to country. Generally, most public transport operators are individuals and not government own commuter buses. The bus owners have been faced by inability to accommodate passengers which is associated with overcrowding passengers in the buses stations and long standing for commuters especially in the peak hours. Infact, available narrow and fewer roads have been the source of the seen traffic jam, Cup *et al*. (2017). This has caused most people in arban areas stragle on getting into the use private transportation. This situation continues to erapse increased number motorcycles and tricycles in cities as well as private owned vehicles. This has promoted increased traffic congestion in most of the cities in Africa, Barnum *et al.,* 2007; De Borger and Kerstens, (2016).

Forinstance, in Nairobi, Kenya, Matatu Welfare Association (2019) reported a single item of 14-seater passengers service vehicles to be over 80,000 passengers service vehicles as 85 percent of the estimated passengers service vehicles (PSVs) operating in the city. The Matatu Welfare Association further estimates 15,000 matatus on about 50 routes in Nairobi without considering private cars, motorcycles, tricycles and other means of transports within the same roads, (Kumar &Barret, 2008). The same situation are in Dar es Salaam which is as well one among the rapid growing cities in Africa. Population growth of the Dar es salaam city being estimated to 4.3 percent, (Dar es Salaam City Council, 2004). In Tanzania, the government continue to built the bus rapid transport (BRT) as the means to fight agaist the traffic jam encountered especially on peak hours. Despite the government effort, the rate to reduce traffic jam is slowly being encountered by residences, on which the rapid expansion of the area of the city using the BRT has led to challenges in city encountering worse traffic jam for the available public transport services, Lupala (2020),

Additionaly, Department of Infrastructure Development, (2016) had provision of private bus public transport services by private companies emphasized at the policy level. The policy had followed the Ministry of Infrastructure Development, (2016) that emphasized Tanzania's urban transport system in Dar es salaam, to be phased out to meet the demand for transport in the city causing the traffic delays due to traffic congestion and fewer buses that was on the project, low capacity of the buses and misconduct by bus staff. Similarly, Ministry of Infrastructure Development, (2016) had as well reported the presence of many private bus operators who were not only enforces the law but also enforces the use of law leading to the unplanned provision of passenger's bus services that ignored the need for extra public bus transport service in Dar es salaam. In addition to that, Ministry of Infrastructure Development, (2016) described that the development of Dar es Salaam City had been partially influenced by the plan that emphasized series of highways connectivity of the five major roads and one ring intersection in the Central Business District, Five-lane roads of Kilwa Road, Nyerere Road, Morogoro Road and New and Old Bagamoyo Roads together with the main road is Mandela Road. These were planned to cover a total length of the road approximated to 1717 kilometres, of which 395 which was 23% of the total length were planned to be paved in all the main roads (JICA, 2018). Despite the these plan, the public bus transportation challenges remained and have been outcry from passengers in Dar es salaam city on the quality of service offered by the bus owners, roads, staff and unstable bus fare.

The government of Tanzania via its ministry of transport, researchers and transport expert continue to single out these transportation problems to level passenger satisfaction. For instance, Fellesson and Friman (2018) conducted a research study in European countries to assess the satisfaction of passengers in public transport. The researcher results indicates that 80 percent European passengers were satisfied with the reliability, information, waiting time in bus stops, comfortability of bus seats, staff skills, customer care, knowledge and attitudes of most passengers. On the other hand, Okoko, (2017) conducted a similar study in Africa. The results indicated that 74 percent African passengers in their capital and business city were not satisfied with the public transport in terms of waiting time in bus stops, comfortability of bus seats, staff skills and customer care. The results also indicated that, in Africa road transport was dominant compared to other mode of transport available in Europe. Odufuwa (2016) contended that, despite the Tanzanian government effort to reduce traffic jam in Dar es salaam city similar challenges of accommodating passengers during peak time especially morning and evening hours remain there. Moreover, Fellesson and Friman (2018) Europe, African public transport comparison study concluded that, in developing countries, ministries of transport should propose to have roads that influence internal stakeholders to invest on public bus transportation despite government support. Also the study highlighted some indicators for public transport to offer more efficient and safer services to passengers that includes traffic supply, reliability, staff skill, good bus and bus stop design that makes customer comfortable as well as good public transport technology and infrastructure that provide healthy transport to bus transport users.

2. LITERATURE REVIEW

This study provides the concepts that evaluates determinants of the public's financial readness to pay for the enhanced bus public transport options in Dar es salaam city. The concept development basis on passengers readness to pay theory. The readness to pay theory insists the maximum amount an individual readness to choose using their cash amount to chose spending the same to procure or use into available public option which may include transportation. It is as well emphasizing that the price of any customer's transactions intermediate between readness to pay for a customer and property owner's acceptance on the transaction. The net difference between readness to pay and readness to accept is the social surplus created by the trading of transactions. It also comprises methods to value public transaction businesses that involves some methods such as hedonic pricing, travel cost method and contingent valuation method. Contingent valuation method proved to be important to

improve public transport through ensuring customer comfort and represent the most promising approach which was developed for determining the public's readness to pay. Contingent valuation method is capable of valuing and measuring types of benefits that most of the other methods cannot measure (Carson, 2017).

Vovsha *et al,.* (2017) contended that, in public bus transport, the customer option to choose public bus transport relies on the possibility of getting sitted on boarding the particular public bus transport. This survey showed that when a probability of passenger getting a seat is less than 40 precent he or she feels uncomfortable and would reject boarding such transport. The effects of Crowding do not only affect physical comfort but also psychological issues, such as nervousness, pressure, stress, and feelings of one's confidentiality being invaded. It also perceived that, passenger's bad travel conditions, uncomfortably standings and crowdnenss significantly lead into passengers opportunity loss, Kumar *et al.* (2004). Shek and Chan, (2018) assessed on public bus passenger and the bus time. The results on this study indicated that, passengers public bus transport confortability and timing travel, contributes to their retention to use such transportation with sureness towards performance quality standards which does not jeopardize their healthy. Moreover, this study recommended the importance of public bus use in the society to have improved efficiency transport quality hence balance the need for public bus services users and stakeholders toward existence and potential transportation provision. Similarly, Cup *et al.* (2017) revealed that, sustainable quality control check involving travel time, bus condition, staff skills , customer care, hygiene condition as well as drivers working condition enhances passeenger readness to pay and use for the public bus services in Dar es salaam city.

3. RESEARCH METHODOLOGY

In this research study, researcher collectionected quantitative data. Collected information was gathered in all main rute roads in Dar es salaam. This was effectively done after critical review of relevant literatures.

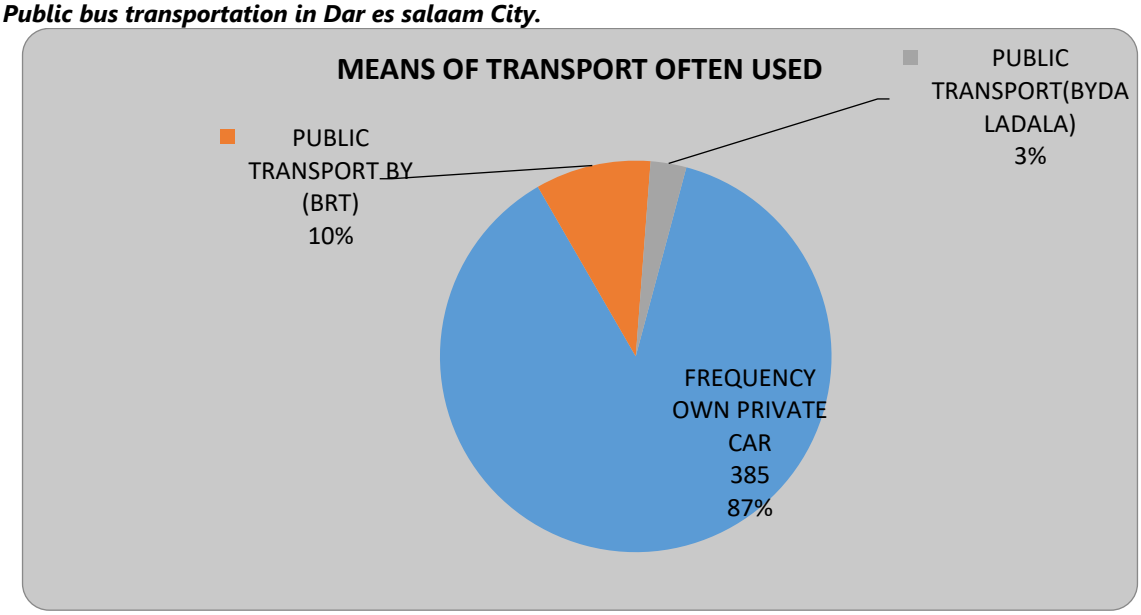
Deductive approach was fully ultilized derived from a set of first principles that intended drawing conclusions about a phenomenon or behaviour based on theoretical or logical reasons based on an initial set of premises for public transport users. The approach was chosen because this study expected to collect data that was used to assess hypothesis linked to the theory, thus aiming at showing relationship between readness to pay theory, reality and reasoning. The total survey population target was public transport operators and road transport users (private transport and public transport). The study was incorporated with licensed public transport operators and public transport users who are passengers. Purposive sampling was utilized because the study involved selection of respondents that was judged as appropriate for the given study. The study total population comprised 15,700 licensed public transport operators in Dar es Salaam (LATRA, 2021). Then, a total of 304 public transport operators from each route were chosen randomly cleaned and 296 sample size was fully used. The number of chosen operators was based on number of licensed vehicles on a particular route by land transport regulatory authority (LATRA). Additionally, the primary data was collected using questionnaires. Soliciting road users' readness to use and pay for improved public bus service. Using microsoft excel and Stata, descriptive statistics generated data graphical presentations, tabular forms and summary of statistics using tables, percentages and chart presentation in explaining the reality.

4.0 FINDINGS

4.1Transportation Characteristics

In determining the determinants of the public's financial readness to pay for the enhanced public bus transport options in Dar es salaam city , the study indicators used was public bus owners, route distance in kilometers, route time in hours, cost of transportation in Tanzanian shillings and public transport user's perception on public bus transport service quality. The stata results indicated that, out of 296 surveyed sample respondents, 87 percent of residents had used own private car especially in peak hours along all major road rutes, while 10 percent of these respondents used public bus (BRT) and 3 percent used Private bus known as DALADALA as the mode of transport. Thus, the surveyed data indicates public bus transport by daladala is the least used followed by public bus rapit transport (BRT) on peak hours due to the car jam on roads and passengers unconfortability. However, it was as well shown that major raod user prefers mostly the use of private cars than public bus transport.

Figure 1: Public bus transportation in Dar es salaam City.



Source: Data analysis, (2025)

4.2 Public Bus Transportation's confortability using Daladala.

Table 1 indicates that, out of 296 surveyed respondents, about 40 percent of respondents were not confortable to use public bus transportation because they are overcrowded especially in the peak hours. Additionally, 23.64 percent said public bus transportation have unsafe condition for Disabled, about 12 percent saying using public bus transportation has no safe condition for children, 9.55 percent saying there is many bus stops, 7.5 percent said public bus transportation staffs has no good customer care and about 2.05 percent said public bus have poorly cleaned.

Table 1: Public Bus Transportation's confortability using Daladala in Dar es salaam City.

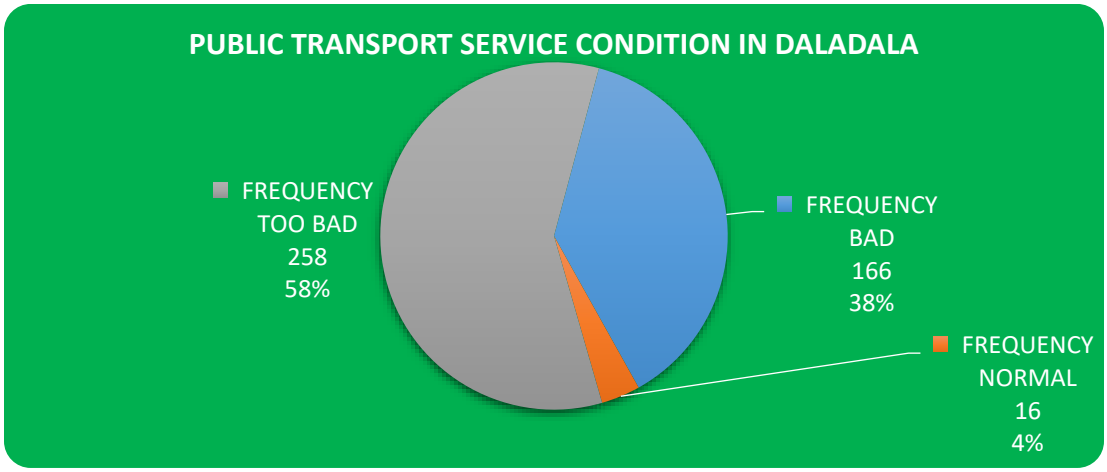
Travel condition in daladala	Frequency	Percentage (%)
Few bus stops	11	3.86
Many bus stops	28	9.55
No customer care from bus staffs	22	7.5
Not safe for disabled	70	23.64
Not safe for children	35	12.95
Overcrowded	118	40.45
Poor cleaneliness	5	2.05
Total	**296**	**100**

Source: Data analysis, (2025)

4.3 Service Public Bus Transportation's confortability using Daladala.

Figure 2 rates the public bus transport of daladala service quality in Dar es salaam. The revealed results indicates that, 58 percent of the public bus transport service quality are too bad, 38 percent bad and 4 percent were normal. This results reveals a wost service quality confortability on using daladala as a route means of transport in Dar es salaam city in the peak hours. However, about 42 percent of the public bus transport users were moderately confortable for the use especially on the afternoon time.

Figure 2: Service Public Bus Transportation's confortability in Dar es salaam City.

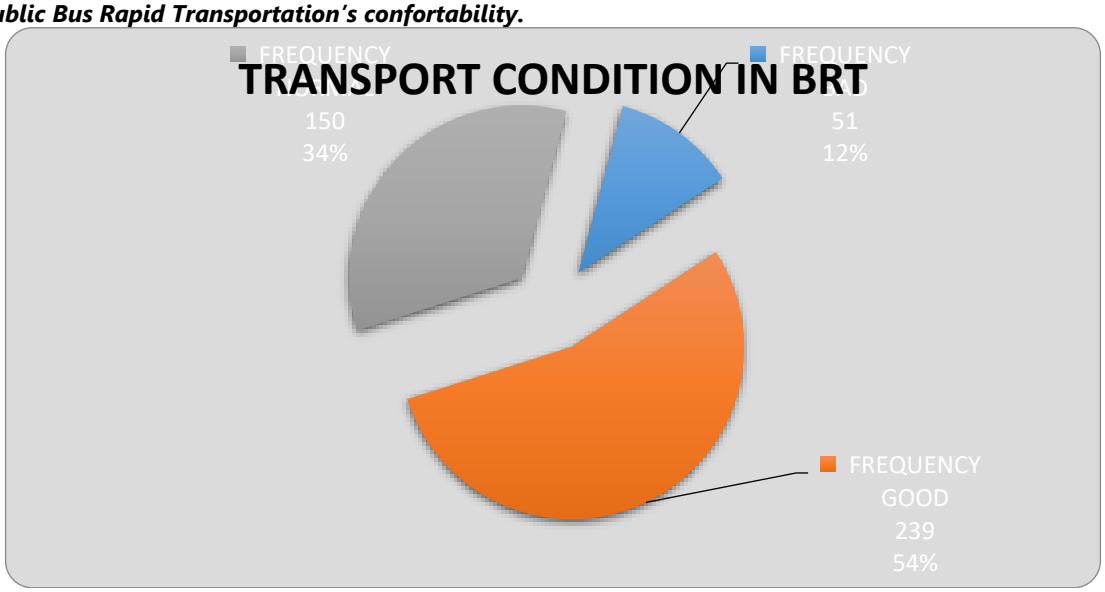


Source: Data analysis, (2025)

4.4 Public Bus Rapid Transportation's confortabilityin Dar es salaam

Figure 3 rates the public bus rapid transport service quality in Dar es salaam. The revealed results indicates that, about 88 percent of the respondent confortably enjoy the use of public bus rapid transport in the peak hours. 38 percent normally enjoyed while 54 percent happily enjoyed. However, there was 12 percent of the respondents who disliked the public bus rapid transport by saying that it was bad sionce they stayed long in the bus stand. Moreover, the public bus rapid transport user respondents said to have enjoyed the service quality than the public bus transport daladala user respondents with all the indicators for service deliverly with exception for the time waiting in stations, safe and confort and crowdness that were least rated.

Figure 3: Public Bus Rapid Transportation's confortability.



Source: Data analysis, (2025)

4.5 Public Bus Transportation's Readness to Pay on Operating Routes.

Desriptive analysis was individual's demographic analysis and interpretations for sex, age, marital status, education level, house hold size, farming experience and farm size. Table 2 indicates, the set bids basing on public bus transportation operators as a benchmark and described according to the surveyed respondents' responses in Dar es salaam major road routes operating under land transportation regulatory authority (LATRA) transport. The results in table 3 indicates that, the mean public bus transportation users readness to pay if improved and make use of public transport through level seat per trip in Dar es salaam city. Revealed results were obtained from grouped routes operating under major Dar e salaam roads and transport fare set as per land transportation regulatory authority (LATRA). During the peak hours, public bus transportation users whose routes operates and charged Tsh.750/- in respond to land transportation regulatory authority (LATRA) on day time were ready to pay Tsh 1,100/- while routes operating under Tsh.500/-, transport users were ready to pay an average amount of Tsh.880/- per trip,

routes operating under Tsh.450/- transport users were ready to pay an average amount of Tsh.780/- per trip, the routes operating under Tsh.400/- transport users were ready to pay an average amount of Tsh.750/- per trip.

Table 2: Average Number of Response's Readness to Pay on Operating Routes

Variables	Routes operating under Tsh.750/-	Routes operating under Tsh. 500/-	Routes operating under Tsh.450/-	Routes operating under Tsh.400/-
Mean readness to pay (Tsh.)	1104.545	882.7273	784.0909	752.7273
Number of observation	296	296	296	296
Minimum bid (Tsh)	1000	800	750	700
Maximum bid (Tsh)	1500	1300	1000	1000
Standard deviation	155.8559	150.1431	64.93886	96.45942

Source: Data analysis, (2025)

4.6 Multiple Regression Results

Table 3 indicates the regression results on variable of readness to pay public bus transport users for the major public transport on routes operating under land transportation regulatory authority (LATRA) transport fare in Dar es salaam city. The average results of multiple linear regressions model revealed a p- value of less than 0.05 (i.e., $p < 0.05$) and R-Square 86.65 per cent.This means the results was significant to the tested variables and there were no heteroskedasticity hence presence of homoskedacity on which the assumption is fulfilled again.

Table 3: Multiple Regression results.

Readness to pay (in Tsh)	Coefficient	Standard error	t- value	P>t
Constant	1301.264	94.43687	13.78	0
Sex	15.58028	10.43816	1.49	0.139
Marital status	-119.3955	14.58801	-8.18	0
Daladala service condition	-18.41177	7.23104	-2.55	0.012
Monthly income	-0.0000501	0.0000199	-2.52	0.013
Education level	-155.5886	26.18667	-5.94	0
Travell time (in minutes)	0.2552508	0.2114587	1.21	0.23
Travel distance (in km)	-33.04254	10.96917	-3.01	0.003

Number of observation	296
F(7, 189)	94.6
Prob> F	0
R-squared	0.8665
Adj R-squared	0.8574

Source: Data analysis, (2025)

4.6.1 Testing for Multicollinearity.

The multiple linear regression models were run and Stata command used to check for multicollinearity was inflation factor *vif*. The cutoff point as suggested Hair *et al.,* (2016) were considered as postulated by authors that inflation factor (VIF) values greater than 5 and tolerance value (TV) of less than 0.2 indicate the presence of multicollinearity. Table 5 indicates the average Inflation Factor (VIF) of less than five (*vif* < 5) and the average tolerance value (TV) of less than 0.2 on variable of readness to pay by public bus transport users for the major road routes in Dar es salaam city . Thus, this study ensured no multicollinearity issue as the VIF and TV values suggests in Table 4.

Table 4: Results on Testing for Multicollinearity

Variable	VIF	1/VIF
Education level	5.92	0.168818
Marital status	3.99	0.0250718
Travel distance	3.57	0.0279807
Time spend with Daladala	3.09	0.123879
Monthly income	2.68	0.0373696
daladDaladala service condition	2.34	0.427151
Sex	1.93	0.518506
Mean VIF	3.36	

Source: Data analysis, (2025)

4.6.2 Testing for Heteroscedasticity

In testing for heteroscedasticity, the regression was run in Stata 13. Table 6 shows regressing ordinary least square model results. Hettest command was inserted into STATA 13 to check for variation invariance. The results show that there was no constant variance which means that there was a problem of heteroscedasticity indicated by hettest results on the basis of Probe > chi2 results in which if the result is less than 5% then the problem of heteroscedasticity occurs and if not otherwise.

Table 5: Results on Testing for Heteroscedasticity

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of wtpinTSH
chi2(1) = 25.92
Prob>chi2 = 0.0000

Source: Data analysis, (2025)

5.0 DISCUSSIONS

This discussion base on the research findings obtained from data analysis presented in part four. It also compares and contrasts theoretical postulations to findings and other related empirical findings found by other researchers. It furher offers rationales for consistence and deviations of the findings from theory and other empirical findings. Desriptive analysis consisted individual's demographic analysis and interpretations for sex, marital status, education level, travel distance, time spend with daladala, cost of transportation, bus service quality, monthly income of bus owners and daladala service condition.

Regression analysis done to evaluates determinants of the public's financial readness to pay for the enhanced bus public transport options in Dar es salaam city revealled that, out of 296 surveyed sample respondents, 87 percent of residents had used own private car especially in peak hours along all major road routes, while 10 percent of these respondents used public bus rapid transport (BRT) and 3 percent used Private bus known as DALADALA as their mode of transport to and from home. Thus, the surveyed data indicates public bus transport by daladala was the least used followed by public bus rapit transport (BRT) on peak hours due to the car jam on roads and bus passengers unconfortability. However, it was as well shown that major raod user prefers mostly the use of private cars than public bus transport.

Moreover, multiple regression results in table 3 revealled that, public's financial readness to pay for the enhanced bus public transport was significance at 5 percent. The R-square was 86.65% meaning that 86.65% in the variation of the public's financial readness values to pay are being explained by the enhanced bus public transport options in Dar es salaam city and the remaining 13.35 percent being explained by other variables not considered to this study. Moreover , these results reveavealed

sex, education level, monthly income, marital status, travel distance and daladala condition confortability was significant 5 percent level.

Therefore, one unit increase of travel time in minutes positively increased one unit readness to pay amounts in Tanzanian shillings for improved public transport among the respondents. This means that respondent's readness to pay for improved public transport increases as travel time increased in minutes.Time delay on the road was charged by most of the major routes like Gongolamboto to Mnazi mmoja, Mbagala rangi tatu to Kariakoo or Mnazimmoja or Kivukoni, Bunju to Posta mpya, Bunju to Kariakoo and so on had conjested the road with high private cars, motorcycles, bajaji and commuter bus. Chengula and Kombe (2017) conteded that, Dar es Salaam bus rapid transit (DBRT), by having dedicated lanes for buses, the system avoids getting caught in general traffic, which helps ease congestion on the roads. However, its success depends on overcoming various challenges related to coverage, infrastructure, and public adoption.Shek and Chan (2018) argued that, the infrastructure Limitations on which the existing road network in Dar es Salaam city are not sufficient to handle bus system's capacity, especially in areas where roads are narrow or poorly maintained. Additionally, Dar es salaam bus rapid transport system doesn't cover the entire city . Thus limiting its usefulness for residents living outside main corridors. Hence, leading them to reliance on other often less reliable modes of transportation such as taxis, private buses, and ferry system. Thus, suggesting proper coordination of all work in progress other wise the entire transport system can become fragmented, limiting the Dar es Salaam bus rapid transit (DBRT)'s effectiveness.

6.0 CONCLUSION

The study results revealed the determinants of the public's financial readness to pay by main road users who conclusively preferred the use of public transport trough level seat, confortable with lower travel time and moderately priced. The highest road user preference was indicated on the improved Dar es salaam bus rapid transport (BRT) serviceson which, they suggested to have many buses on ech major road routs with comfort level seat. Moreover, road users suggested road expansion to accommodate private transport users and other general bus transport commonly known as daladala. Furthermore, the public bus road users showed readness to pay even more likely higher bus fee above those set by land transport revenue authority (LATRA) only if travel time used is assured to be reduced. Other factors influenced readness to pay for improved public bus service in Dar es salaam included road bus stations to be near to their work place and home, staff bus customer care, bus cleanness, bus driver with good ethics and went to the national institute of transport (NIT) driver training and holder a driving certificate. These factors reveal to provide Bus road users cormfortability and believe to be safe for their children who use bus transport to and from their schools. These resuts are in line with the statement that people value the characteristics of goods, not the good themselvesas argued by Joewono (2019) and Walton *et al.;* (2014). Lastly, the researcher used survey approach method to realized expected respondents and a higher response rate. Therefore, the study revealed to have significant results to the tested variables and there were no heteroskedasticity hence presence of homoskedacity on which the assumption was fulfilled again. Also, this study ensured no multicollinearity issue as the VIF and TV values suggests in Table 4.

7.0 RECOMMENDATIONS

Based on the findings and conclusion, this study recommends, that the government should emphasis on both operating and new policies to continue to improving roads in Dar es salaam and all its cities. This is because readness to pay by passengers revealed to be high with improved roads and public bus service in Dar es salaam. Morevoer, the study recommends to have road bus stations near to passenger's work place and homes as well as good staff bus customer care, bus cleanness, bus driver with good ethics and went to the national institute of transport (NIT) driver training also holding a driving certificate. These factors reveal to provide Bus road users cormfortability and believe to be safe for their children. Furthermore, this study recommends that, the road expansion should spread to all cities and the constructions shoud be made before resdent's squarter buildings. Also, government road policy should ensure that bus rapid transport (BRT) and other project relating with public transport in most famous places in the city are of level seat operations. This revealed to reduce the increase of road traffic congestion because the cocluded results revealed that, the more public transport is used the less the use of private transport. Therefore UDA-RT that operate BRT in Dar es salaam under surface and marine transport regulatory authority (LATRA) should make sure that in some famous places of the city center are set with dragon buses operating under level seat or reasonable holding capacity of passengers that create comfort ground to the public transport users.

8.0 Area for Further Study

This study opens avenue to researchers to add more knowledge about the the determinants of the public's financial readness to pay for the enhanced public bus transport options in Dar es salaam city. Hence, this study recommends that future studies may include other means of public transportations like fast boat, train, tricycles and motorcycles in a safest way. Moreover, this study

employed regression model of data analysis involving cross-section data collection. However, it is suggested that other researcher may consider conducting panel data analysis to covered three or more number of years individual predictor observation to ascertain safety trend of fast boat, train, tricycles and motorcycles through sustainable government road policy in rural areas. Finally, the same research may be replicated to other countries compare the results. This is because experience encountered by the public's financial readiness to pay for the enhanced public bus transport options varies worldwide. That means, experience of the public's financial readiness to pay for the enhanced public bus transport options in Tanzania may not be same as any other country.

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