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Assessment of Negative Impacts Affecting Public Transportation Modes and Infrastructure in Burgersfort Town towards Building Urban Sustainability

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***Abstract*—**The availability of public transportation modes and qualitative infrastructure is a burning issue that affects urban sustainability. Public transportation is indispensable in providing adequate transportation means to people at an affordable price, and it promotes public transport reliance. Burgersfort town has a critical condition on the urban public transportation infrastructure which affects the bus and taxi public transport modes and the existing infrastructure. The municipality is regarded as one of the mining towns in Limpopo Province considering the availability of mining activities and proposal on establishment of a Special Economic Zone (SEZ). The study aim is to assess the efficacy of current public transportation infrastructure and to propose relevant recommendations that will unlock the possibility of future supportable public transportation systems. The Key Informant Interview (KII) was used to acquire data on the views from commuters and stakeholders involved. There KII incorporated three relevant questions in relation to services rendered in public transportation. Relevant literature relating to public transportation modes and infrastructure revealed the imperatives of public transportation infrastructure, and relevant legislation was reviewed concerning public transport infrastructure. The finding revealed poor conditions on the public transportation ranks and also inadequate parking space for public transportation modes. The study reveals that 100% of people interviewed were not satisfied with the condition of public transportation infrastructure and 100% are not satisfied with the services offered by public transportation sectors. The findings revealed that the municipality is the main player who can upgrade the existing conditions of public transportation. The study recommended that an intermodal transportation facility must be established to resolve the emerging challenges.

***Keywords*—**Public transportation, modes, infrastructure, urban sustainability.

I. Introduction

TRANSPORTATION planning is regarded as an essential tool to facilitate access to different facilities and to facilitate road connectivity. There is a necessity for urban cores, rural villages, town, and cities to implement sustainable public transportation facilities which simplify accessibility and mobility in both living and working environment. Public transportation plays a fundamental role by reducing transportation impacts on the environment, improving mobility and positive contribution towards economic development [1].

Public transportation infrastructure is essential especially in urban areas for promoting the choice of different modes of transportation. Municipalities and private companies promote the essence of public transportation through their interventions in upgrading and maintaining public transportation infrastructure and facilities. Reference [2] divulged that public transportation infrastructure is the determinant to the quality of transport services rendered and operation costs.

Public transportation is regarded as the most suitable source of eradicating traffic congestion on the major roads especially in urban areas. Public transportation is a full representation of a sustainable transport system and it promotes the quality of transportation. Public transportation quality is determined by the condition of road infrastructure, the safety of public transportation modes and other useful amenities that add value to a smart transportation system [3].

Reference [4] argued that public transportation infrastructure improves the direct involvement of people by empowering mobility, social and political cohesion. This reinforces the imperativeness of transportation mainly on sustainable infrastructures for public transportation in cities and towns. Burgersfort town as a secondary nodal area of Fetakgomo Tubatse Local Municipality has the potential to the enhancement of social, economic and environmental factors. Reference [5] argued that Singapore's transportation infrastructure is the safest and efficient transportation system which promotes economic benefits and improves connectivity within the cities.

Urbanization and population growth have a negative impact on the demand for public transportation especially in cities and according to [6], the economic development and globalization are drivers of increased demand for transportation facilities and modes. Safety is a critical demand within public transportation facilities and modes that build reliance and affordability to the people. The prominence of traffic management systems, road signs, policies and traffic law enforcement are sanctioned through facilitating safety and standards of operations [7]. This paper exposes the key challenges affecting public transportation modes and their infrastructures within Burgersfort Town and also review the effectiveness of the implemented measures in light of sustaining transportation. This paper will also outline the effects of public transportation challenges and propose

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sustainable recommendations that will assist the municipality, stakeholders and futures researchers in advancing public transportation tools and systems.

II. Background of the Study Problem

The public transportation system in Burgersfort town is affected by continuous challenges that are not fully addressed by the local government and other relevant authorities. The main critical challenge is inadequate transportation policies in the municipality which were supposed to create standards of operations and to assist the local municipality with framing the future of public transportation. Currently, the municipality is reviewing the Integrated Transportation Plan (ITP) which will serve as a catalytic tool for advancing public transportation in the municipality. Transportation strategies are required in the municipality to address approaches to planning the future of public transport facilities and infrastructures.

Currently, the main public transportation modes are buses, taxis and minicabs which operate only in the Burgersfort Central Business District (CBD). The Municipality managed to establish four taxi ranks and one bus rank within Burgersfort town and with limited parking space and terminals. The bus rank can only accommodate six buses with inadequate parking space for queuing buses and absence of tickets purchase offices. Great North Transport (GNT) provides bus services to certain districts with the municipality whereas other bus companies provide services to the mining industries. The bus station is dilapidated and there are inadequate passenger infrastructure/shades. The taxi ranks are characterised by potholes, torn shelters and land pollution mostly near the ranks. Burgersfort town has a potential for land development projects unfortunately the town requires a sustainable road network which restricts the municipality in implementation due to private ownership.

The other critical challenge which affects the effectiveness of public transportation in the town is continuous traffic congestion. During peak hours there is severe traffic congestion which affects the flow of public transportation negatively and mobility within the town. The municipality proposed interventions to provide eastern and western ring roads in order to ease the current severity but the municipality is encountering financial constraints and challenges with the affected land owners. Approximately 26% of car accidents are castigated by the collision of vehicles and it is caused by impatience of traffic congestion [8]. The SANRAL report further depicts that approximately 46% of the car accidents are within Burgersfort Town and mostly on R37 Road [8]. The traffic management systems used in Burgersfort town are Traffic robots, in most cases the robots are found not functioning properly due to various implications. This problem causes disorder on the roads which delays the movement of traffic especially on R37 as the major distributor road. The ineffective transportation plans, policies and strategies downgraded the essence of public transportation mode in the town.

III. Locality of the Study Area

Burgersfort town is located in the Valley of Spekboom River at the edge of the Bushveld Complex in Fetakgomo Tubatse Municipality [9]. Fetakgomo Tubatse local Municipality is the biggest municipality in Sekhukhune district of Limpopo Province. The municipality was formed as a sequel to an amalgamation between the former Fetakgomo Local Municipality and the former Greater Tubatse Municipality, which municipalities were established after the 2000 Local Government Elections as an outflow of the municipal demarcation board. The size of Fetakgomo Tubatse Municipality is 45500.1105 hectares in line with [10] and it is regarded as the third largest municipality in Limpopo province. The municipality comprises of 39 wards with approximately 297 villages and 06 proclaimed townships [10]. The most economic contributor in Fetakgomo Tubatse Local Municipality is mining industries which are located within a radius of 40 km to Burgersfort town.

Burgersfort town is the secondary nodal point for Fetakgomo Tubatse Municipality and is regarded as the fastest growing point in Sekhukhune district. Fetakgomo Tubatse Local Municipality is found within the Sekhukhune District of Limpopo province. Fig. 1 shows the jurisdiction of Fetakgomo Tubatse Local municipality.

IV. Literature Review

The literature review will replicate the view raised by different authors in different journals, books, conference proceedings and other sources. The literature review is essential to demonstrate the imperative of the focused area being the public transportation infrastructure challenges and also to justify the rationale of this study. Literature review reflects reviewing studies that are relevant to the study area of this project. Reference [11] defined public transportation as a provision of the motorized mode of transport by state, companies and entities. Public transport is characterized by displacements that incorporate cars, motorcycles, bicycles, or even locomotion on foot, in a sense that may be advantageous to the versatility of transportation at any time for all required places [12]. Public transportation is the key parameter of building sustainable cities which addresses the social, economic and environmental aspects of the city [13].

Transportation infrastructure is both capital and public goods that have good investment expenditure and it is owned by people within the jurisdiction of the infrastructure [14]. Transportation infrastructure is a component of empowering public investment with cost benefit [15]. Reference [16] argued that transport infrastructure is a system that determines the key function of the asset management system. Transportation Infrastructure provides a state-of-the-science profile of new developments in transportation-related geotechnology from around the world [17].

a) Theoretical Frameworks

A theoretical framework guides the researches, studies and projects by determining the essence of theories and their statistical relationships. The following theories were identified

with interrelationship with public transportation infrastructure:

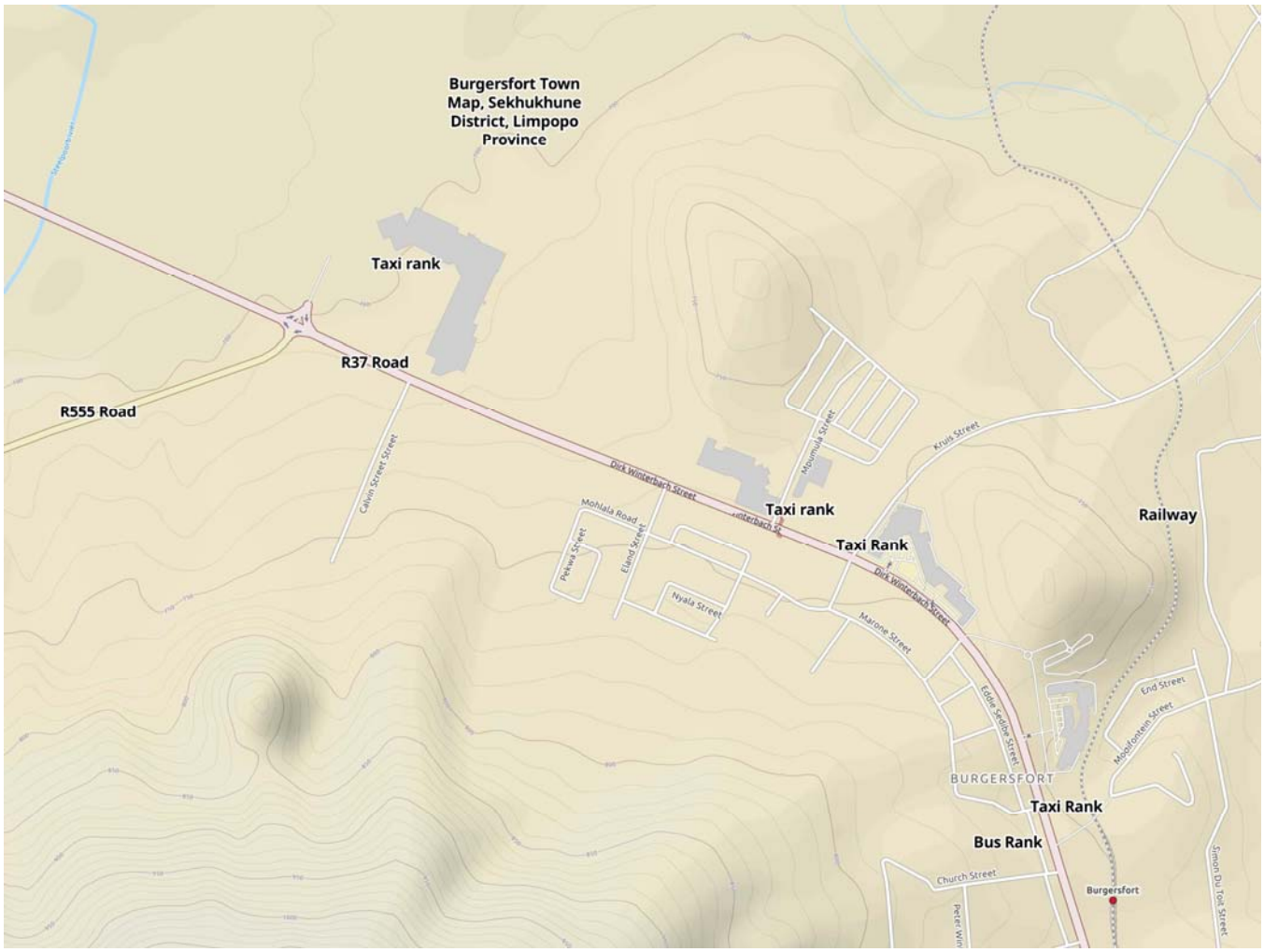

Fig. 1 Locality Map of the Study Area

➢ The Game Theory

The game theory is a systematic tool which can be applicable to decision making process on public transportation. Reference [18] indicated that the Nash equilibrium is used to identify possible outcomes in various market situations. In conjunction with the study area, this model is appropriate and it may be used to assist transport policy decision-makers in making reasonable decisions on transportation systems and tools [18].

The game theoretic conceptual framework model is presented to highlight strategies undertaken by individual public transport operators, public or private [18]. Transport policy trends emphasize the need to strike a balance between the modernization of public services, with the introduction of new eco-friendly transport modes, and the rational use of the car, through the introduction of an increased number of options to the commuter, which would provide flexibility while reducing the environmental impact of urban transport. However, whilst improved integration between the public transport modes helps people to move around easily and to reduce the costs and inconveniences of travel for the individual commuter, it does not guarantee improved pay-offs to the individual transport operator [19].

➢ Public-Private Partnership in Transportation

The use of public-private partnerships (PPPs) in the United Kingdom (UK) has played an imperative role on advancing investment in transport infrastructure which lately depicted dynamic change Latin America in the 1980s and the 1990s [20]. The PPPs are critical in enabling private participation in the development process and it further adds value to the economic growth through provision of social services and maintenance of existing services [20]. PPP is fundamental particularly in the local sphere government because it stimulates public participation in all development proposals and challenges within the study area.

➢ Economic Theory

Reference [21] indicated that the economic theory on public transportation balances the maximization of the size and maximization of the cost which empowers the options of operations and the standard of services offered. This system

offers the evaluation performance criteria which will improve the effectiveness of the public transportation system. The economic theory depicts the change in public transportation costs which is determined by the overall percentage of demand [21].

- Theory of Planned Behaviour (TPB)

TPB is commonly used in the Malaysian country and this theory was conducted in public transportation to assess the performance of bus companies in Malaysia [22]. The theory aims to study the behaviour of public mode operators and passengers. This theory relies on research questionnaires developed to acquire useful data that will analyse the standards of behaviour of public transportation participants.

Transportation infrastructures are essential for creating good management of space and transportation facilities for sustainable transport infrastructure development [23]. Reference [24] indicated that private investment in transportation infrastructure unlocks sustainable accessibility to effective roads, bridges, highways and other sectors affecting effective transportation. It is imperative to involve private institutions in unpacking the key challenges affecting public transportation in Burgersfort CBD since they have a role to play in facilitating public transport.

The transportation sector in South Africa is one of the major contributors to the country's competitiveness in global markets and the major challenge is the rapid growth of transportation infrastructure mainly the maintenance and construction of new roads [25]. The world requires approximately $3.2 trillion in infrastructure development which suggests that many countries must invest more in transportation infrastructure and public transportation facilities [25].

b) The Public Transportation Infrastructure

Road infrastructure is the main transportation infrastructure that supplies sustainable accessibility to public transportation. Most of the roads in Burgersfort town are associated with potholes and poor pedestrian infrastructure. Road infrastructure promotes growth and development by attaining more investments which contribute to economic development [26]. The government must advance sustainable measures in order to improve public transport infrastructures.

c) The Public Transportation Modes and Facilities

Buses and Taxis are the main public transportation modes supplying public transportation services in Burgersfort Town. The bus and tax services are supplied in four taxi ranks and one bus rank. Reference [27] explained a public transport rank as a specific location where pedestrians can get public transportation services.

d) SADC Regional Perspective on Public Transportation Infrastructure

The standards of road infrastructure in Southern Africa are believed to be more solid and qualitative. The majority of the roads in Botswana, Lesotho, and Namibia are classified as good road standards [28]. However, road maintenance measures have been abandoned in Angola and Mozambique, where approximately 90% of the roads are considered fair to poor standard [28]. Although traffic volumes are low, these two Member States need new roads constructed alongside the necessary repairs to damage caused by conflict and neglect [28]. The countries in the SADC region are considered competent in road construction but with poor interventions to address road maintenance.

e) Municipal Transportation Policies, Legislation and Framework

Currently, Fetakgomo Tubatse Local Municipality is in the process of finalizing the ITP which is considered as a radical stimulus policy to address transportation challenges in the entire municipality. Transportation infrastructure related projects are incorporated in the Integrated Development Planning (IDP) and Spatial Development Framework (SDF). The municipality is committed for the implementation of the ITP in due course which will integrate and coordinate the transportation systems in the town and other sectors of the municipality. IDP is the main tool for addressing the projects related to upgrading and constructing infrastructures that can add value to an effective public transportation system. The municipality has implemented the SDF in line with the Spatial Planning and Land Use Management Act, 2013 which serves as a resourceful tool to pinpoint future developments of the municipality and incorporating new transportation infrastructures.

V. Methodology

There are several approaches, methodologies and strategies which were implemented by different scholars and researchers in this study area which failed to unpin the key challenges affecting the public transportation modes and infrastructure. The research methodology is the tool to set the instruments which will be considered to collect useful information in the study [29]. This study aims to investigate key challenges which affect the public transportation infrastructure, public transportation modes and facilities in Burgersfort CBD. The other critical component of this study is to measure the effects of the challenges and also to propose innovative measures that will improve the standard of transportation systems in the town. The selection criteria create a restrictive procedure in acquiring specific indicators in defined areas for evaluating the essence of the study objectives [30].

This study incorporated the qualitative and quantitative standards to acquired relevant data on challenges affecting public transportation infrastructures. The qualitative data collection materials used in this study include KII, Journal, books, Internet etc. The main purpose of using qualitative data sources is to acquire sufficient information that will improve public transport problems and challenges in Fetakgomo Tubatse Local Municipality. Research design determines the footpath on how data and useful information were collected during the process of the study [31]. KII were conducted from the public transportation units in different governmental departments, taxi and bus operators. The accumulated data were used to make analysis and Microsoft Excel was used to store the data. Photos

were captured during the site survey in Burgersfort town to depict the current challenges spotted in town.

VI. Findings and Analysis

The findings and analysis were based on the site inspection undertaken and data captured through the stakeholder interviews concerning public transportation infrastructure challenges.

Fig. 2 Bus Rank Station in Burgersfort Town

Fig. 3 Conditions of Lydenburg taxi rank in Burgersfort town

The condition of the bus rank is unsatisfactory due to dilapidated road infrastructure and pedestrian shades. The GNT as depicted in Fig. 2, is the only bus company utilizing the bus rank with limited buses transporting people from few villages in the municipality. The buses arrive around in the morning and leave in the afternoon. The current terminals can only support approximately 6 buses at a time which suggests the insufficiency of bus transportation mode. The pedestrian shelters are not adequate to cater more people especially during the sunny and rainy periods. The surface of the bus terminals is covered with the pavement with land pollution factors which suggests inadequate pollution control measures.

Fig. 3 presents the Lydenburg Taxi rank closer to the illegal dumping area next to Marone Complex in Burgersfort Town. The taxi rank shelter is torn as depicted in Fig. 3. There is no pedestrian infrastructure/resting area in this taxi rank and there only two taxi terminals that support approximately eight taxis at a time. There is insufficient parking space allocated for queuing taxis. The dumping area has a negative impact on the health of people living there timeously and the authenticity of the rank. There are no tags to direct the destination of the public transports and illegal markets closer to the rank which has a negative impact on the appearance of the rank. The surface condition on Lydenburg taxi rank and bus rank suggests insufficient care by the municipality, public transportation management committees and other relevant stakeholders. Pollution control is required in the taxi and bus ranks in order to improve the conditions of the areas and to comply with the Occupational Health and Safety Act 85 of 1993.

Fig. 4 Tubatse Crossing Taxi Rank

Fig. 4 presents the cleanest taxi rank in Burgersfort town and it accommodates 16 taxis at a time. There is limited parking space for queuing taxis and mostly this rank is affected by traffic congestion because it is located within Tubatse Crossing mall which serves as the main traffic converging point. The other critical challenge is the minicab taxis which mostly block the accessibility to the taxi rank and the challenge is that there are limited taxis authorised to supply public transportation services. This suggests that several platforms remain empty for a certain period of time.

Fig. 5 Boxer Taxi Rank

The Boxer taxi rank is the biggest taxi rank in Burgersfort with unpleasant conditions on the pedestrian walking and pedestrian shades infrastructure. Most of the pedestrian shades are occupied by informal vendors which affects the appearance of the taxi rank. The condition of the tar road is characterized by big potholes with an unclean surface. Fig. 5 depicts unmaintained passenger infrastructure which was invaded by hawkers for display and selling of various products. The existing infrastructures resemble an unsafe living environment with higher risks of incidents. The Boxer taxi rank can accommodate approximately 25 taxis at a time and the other findings were poor accessibility to R37 road due to uncoordinated traffic congestion. The accessibility in this taxi rank affects the flowing of traffic which results in traffic congestion and unnecessary delays. One of the major findings is that there are fewer pedestrian offloading zones in the town which forces the taxi and bus operators to stop in the middle of the road which creates unnecessary traffic congestion.

Fig. 6 Inadequate parking space for Taxis in Boxer Taxi rank

Fig. 6 presents an inadequate parking space for taxis in Burgersfort town. Most of the taxis park in the private parking for customers of Burgersfort Mall and reserved parking which tends to affect parking especially during month-end in the town. Currently, the taxi and bus ranks have inadequate parking and queuing space. One of the findings was that the municipality is failing to locate a space to construct bus and taxi ranks due to inadequate land owned by the municipality.

Fig. 7 The potholes on R37 roads

Fig. 7 presents the potholes found on the roads within Burgersfort town which have a negative impact to the safety of road users. Poor maintenance of the road affects the traffic flow and creates unnecessary delays on the roads. Road infrastructure maintenance is a critical challenge especially on the major roads within the town. There is a huge necessity for relevant stakeholders to improve the conditions of the roads and also to have a sustainable management program on road maintenance.

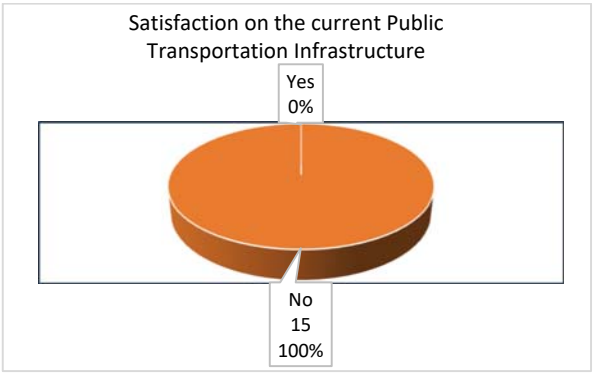

Fig. 8 Responses on public transport infrastructure satisfactory

Fig. 8 represents the responses made by different people interviewed during the site visits which shows that 100 % of the people are not satisfied with the current public transportation infrastructure and facilities. This suggests that the role players are not sufficiently addressing the current challenges of public transportation. The participants further demonstrated that they encounter delays due to the services rendered by public transport modes. This provides a restriction to some of the commuters to have available public transport mainly after peak hours.

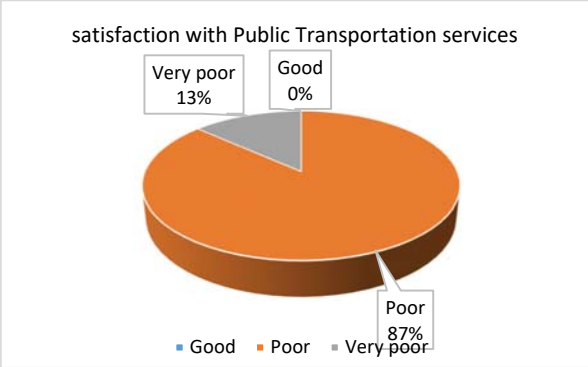

Fig. 9 Response on services rendered by public transportation modes

Fig. 9 represents the data that 87% of the respondents rated the current services poor whereas 13% of the respondents rated the services very poor. This suggests a necessity for interventions that can improve the transport infrastructure and public transportation facilities.

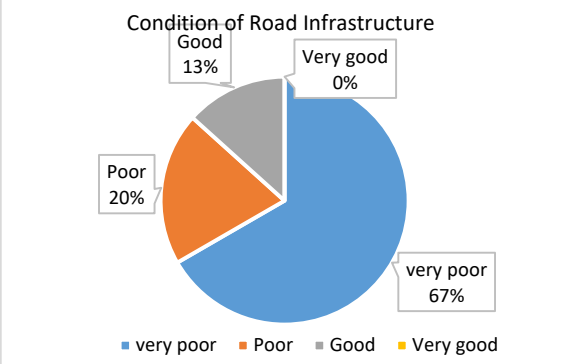

Fig. 10 Conditions of Road infrastructure

67% of the respondents rated the conditions of the road infrastructure very poor due to several incidents that occur on the roads. Only 13% of the respondents declared the condition of the road infrastructure good. 87% of the respondents are not satisfied with the road conditions which suggests the necessity for upgrading the current roads.

VII. Recommendation

This paper proposes the following recommendations which can improve the standards of public transportation infrastructure development in Burgersfort Town. This paper will serve as the reference for future municipal infrastructure developments and future research fields.

a. Public Transportation Ranks Renovation

It is recommended that the municipality and other relevant sector departments ensure that they reserve funds to renovate all the taxi ranks within the town. This will also include adequate parking space for queuing public modes. Implementation of this recommendation will empower good management of public transportation facilities with adequate parking.

b. Maintenance of Road Infrastructure

It is recommended that the municipal through Expanded Public Work Programme (EPWP) and Community Workers Programmes implement maintenance measures, especially on the public facilities. This will reduce the number of accidents on the roads and promote occupational health and safety.

c. Intermodal Public Transportation Mode

It is recommended as a long-term development goal for the municipality to implement intermodal public transportation facilities which will merge the existing public transports and propose also the landing strip for future airport. This will improve reliance on public transportation within the town and also reduce private car users on the roads.

d. Electronic Transportation System

An electronic transportation system will allow passengers to request available taxis and buses on mobile phones and also to locate the exact location for passengers. This system will improve high waiting periods for public transportation in the taxi ranks. This system will further notify the commuters and public transport commuters with emergency accidents on the public roads.

e. Construction of Railway Train

Population growth has a negative impact on Burgersfort town. Railway trains are proposed to reduce traffic on the roads by allowing a high number of passengers in one unified transport mode.

f. Construction of Bypass Roads and Addition of Road Lanes

The government must construct either a western or eastern ring road which will serve as the bypass for people who are passing along the town. In order to reduce the volume of traffic in the CBD, it is significant for the municipality to plan the addition of the existing road lanes.

g. Implementation of Bus Rapid Transit (BRT)

This study proposes the development of Bus Rapid Transit along R37 road in order to reduce the voluminous traffic which is currently encountered. This system will reduce the number of individual cars on the road which will promote road safety and reduction of traveling time.

VIII. Conclusion

Public transportation infrastructure is a thoughtful concern to the development of Burgersfort Town. The current situations of

public transportation depicted the severity of the negative impact on sustainable transportation planning. The findings reveal a critical condition on pedestrian infrastructure, shades and roads which require a positive response from the municipality and the other stakeholders like the Department of Transport (DOT). The KII results show that there is a huge necessity for the municipality to intervene in assisting the public transportation facilities within the Town. Public transportation infrastructure affects the economic rate and productivity rate due to the high demand for adequate routes. Generally, it is necessary to decrease individual car usage and to increase public transport usage which will reduce traffic congestion challenges [32].

REFERENCES

[1] Bunting, M. (2004). *Making Public Transportation Work.* Canada: Mcgill-Queen's University Press.
[2] European Conference of Minister of Transport. (2005). *National Systems of Transport Infrastructure Planning.* Paris: OECD.
[3] Dell'Olio, L., Ibeas, A., De Ona, J., & De Ona, R. (2018). *Public Transportation: Quality of Services.* Cambridge: Elsevier Ltd.
[4] Button, K., & Reggiani, A. (2011). *Transportation and Economic Development challenges.* Cheltenham: Edward Elgar Publishing Limited.
[5] Fang, F. T. (2016). *50 Years of Transportation In Singapore: Achievements and Challenges.* Singapore: World Scientific Publishing.
[6] Kawasaki, S. (2015). The Challenges of transportation /Traffic Statistics in Japan and directions. *IATSS Research*, 1-8.
[7] Oguchi, T. (2015). Achieving safe road traffic-The experience in Japan. *IATSS Research*, 110-116.
[8] SANRAL. (2007). *Community Empowerment Impact Assessment Report.* Pretoria: ITS.
[9] InternetAchieveBot. (2017, 07 27). *Wikipedia.* Retrieved 05 17, 2018, from Burgersfort: en.m.wikipedia.org.
[10] Fetakgomo Tubatse Local Municipality. (2017). *Integrated Development Planning.* Burgersfort: FTLM.
[11] Glover, L. (2011). Public Transport as a Common Pool Resource. *Australasian Centre for the Governance and Management of Urban Transport*, 1-14.
[12] Junior, A. L., Siluk, J. C., & De Paris, S. R. (2016). The scientific research context of urban transports for Bus Rapid Transit systems. *Journal of Transport Literature, 10*(4), 15-19.
[13] Miller, p., De Barros, A. G., Kattan, L., & Wirasinghe, S. C. (2016, April). Public transportation and sustainability: A review. *KSCE Journal of Civil Engineering, 20*(3), 1076-1083.
[14] Torrisi, G. (2009, 01 25). Public infrastructure: definition, pp. 1-35.
[15] Crafts, N. (2009, October 01). Transport infrastructure investment: implications for growth and productivity. *25*(3), 327-343.
[16] Sinha, K. C., Lab, S., & Agbelie, B. (2017). Transportation infrastructure asset management in the new millennium: continuing issues, and emerging challenges and opportunities. *Transportmetrica A: Transport Science, 13*(7), 591-606.
[17] Wu, J., & Ling, H. L. (2018). Transport Infrastructure Geotechnology. *5*(15), 1-15.
[18] Roumboutsos, A., & Kapros, S. (2008). A game theory approach to urban public transport integration policy. *Transport Planning, 15*(4), 209-215.
[19] European Union. (2011). *the Game Theory White Paper.* EU.
[20] Hasselgren, B., Makovsek, D., & Perkins, s. (2015). Public Private Partnerships for Transport Infrastructure; Renegotiations, How to Approach Them and Economic Outcomes. *International Transport Forum,* 2014(25), 3-28.
[21] Talley, H. W. (1988). An economic theory of the public transit firm. *Science Direct, 22*(1), 45-54.
[22] Ambak, K., Kasvar, K. K., Daniel, B. D., Prasetijo, J., & Ghani, A. A. (2015). Behavioral Intention to Use Public Transport Based on Theory of Malaysia: ResearchGate.
[23] Gupta, s. s. (1992). *Integrated Development Plan for India.* New Delhi: Ashock Kumar Mittal.
[24] Geddes, R. R. (2011). *The Road to Renewal* (1st ed.). Washington: The AEI Press.
[25] Doke, L. (2015). *Investment still needed in transport infrastructure.* Mail & Guardian.
[26] OECD. (2016). *Road Infrastructure, Inclusive Development and Traffic Safety in Korea.* Paris: OECD Publishing.
[27] Cooper, J., Mundy, R., & Nelson, J. (2016). *Taxi! Urban Economies and the Social and the Transport impacts of the Taxicab.* Farnham: Ashgate.
[28] SADC. (2012). *Southern Africa Development Community.* Retrieved May 17, 2018, from SADC Roads and Transportation Infrastructure: http://www.sadc.int/themes/infrastructure/transport/roads-road-transport/
[29] Pavan, G. K., & Kulkarni, N. (2014, 07). Research Methodology. *International Journal of Innovative Research and development, 3*(7), 168-173.
[30] Černá, L., Zitrický, V., & Daniš, J.(2016).The Methodology of Selecting the Transport Mode for Companies on the Slovak Transport Market. *Creative Commons Attribution- Non Commercial- No Derivs, 7*(1), 6-13.
[31] Kumar, R. (2011). *Research Methodology.* New Delhi: SAGE Publications Ltd.
[32] Schmöcker, J., Bell, M., & Lam, W. (2000). Importance of public transport. *38*, 1-4.