

EXPLORING OPERATIONAL VIABILITY OF BOTSWANA TRANSPORT SECTOR DURING COVID-19 PANDEMIC

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ABSTRACT

The novel coronavirus has had a profound, dramatic impact on almost every nation in the world. The road transport sector in Botswana (both passenger and freight) has not been spared but hit particularly hard by the crisis through operational non-viability. The study sought to unpack operational and business challenges in the Botswana passenger and freight transport sector during the Coronavirus (COVID-19) era. The study employed an exploratory design to sample 30 transport operators in Greater Gaborone and gathered quantitative data through administration of questionnaires. The research study covers the period between April and June 2020. The study revealed that major operational challenges include lack of emergency preparedness, lack of financial backup, sharp business drop as passengers and goods are not moving, COVID-19 compliance requirements and longer turnaround times (resulting in perishable goods getting bad in transit). The study also came up with recommendations to improve transport sector viability during COVID-19 time and these include ensuring that transport organisations both passenger and freight quickly migrate to the COVID-19 new norm and get things running, avoid the use of human labour in physical loading and unloading of cargo to reduce possibilities of transmitting Coronavirus as a result of human contact, training of drivers to practise the necessary precautions to reduce the spread of the virus during transportation of goods and passengers. Companies are encouraged to temporarily increase their driver compliment to improve on operational turn-around times as some of the drivers may be placed under mandatory COVID-19 quarantine. Organisations which are able to divert their operations to the transportation of COVID-19 essential products and essential people encouraged to do so for them to remain viable throughout the pandemic time.

Keywords: operational sustainability, freight, passenger, transport, coronavirus, Department of Road Transport and Safety

1.1 BACKGROUND OF THE STUDY

Since the advent of Coronavirus disease in December 2019 (Covid-19) in China, the world nations have been characterised by a state of emergencies and lockdowns ranging from partial to total shutdown of economic activities. So far (30 May 2020), the COVID-19 pandemic has placed over four billion people in lockdown (Vandycke, 2020). With mobility

limited, it has drastically impacted public transport networks across the world. The impact has resulted in the decrease of revenues, in some cities, the reduction in patronage surpasses 90% and brought with it additional costs to disinfect and implement physical distancing measures in public transport vehicles and infrastructure. It has also resulted in the reduction in industrial and service production, including the halt of activities and the decrease in turnover of the supply industry, and subsequent deaths and infections among public transport workers (Zhang, 2020).

The crisis has severely affected transport services, both in terms of supply and demand. With many people instructed to work from home and shelter in place, the number of cars on the road has fallen sharply. Likewise, public transit ridership has tumbled to an all-time low: in New York City, passenger numbers on the subway and commuter rail systems are down by as much as 90 per cent. The overall impact on the most vulnerable communities is not yet documented but will be considerable (Vandycke, 2020).

In Europe, transporters are moving limited export loads with extra delays of port operations due to the lack of transshipment operators and warehousemen. Countries are also starting to notice the intensification of limited transport due to the coronavirus, making the European economic black whole bigger and stronger. Delayed deliveries and increased prices has become the new norm because of coronavirus. The transport market is characterised by reckless estimates and increasing demand as most transporters decided to park their fleet fearing contracting the novel disease. This is gradually resulting in an increase in freight rates and the overall transport costs. Inevitably, this will have a direct impact on the final prices of goods (Zhang, 2020).

Shortage of supply and demand, for those operating subjected to rigorous scrutinization, quarantining and on-going tests that delays mobility of both passengers and freight. In some regions, it is mandatory to carry out medical checks on drivers (taking the temperature and evaluation of symptoms) at the loading and unloading points. In some more extreme cases, carriers are even required to wear a mask in order to comply with the safety requirements (Workman, Dooley, Lomax, Maltby & Darch, 2020).

Landlocked Botswana imports about two-thirds of its goods from South Africa and it is also a transit country for transporters and travellers between Namibia, Zimbabwe, Zambia, South Africa, Angola, Mozambique, Eswatini and Lesotho as shown in figures 1.1 and 1.2. All these countries surrounding Botswana have been affected by the pandemic as well hence they also imposed transport and mobility restrictions for both freight and passengers. This alone makes it difficult to run transport operations sustainably in both local and cross-border business (Rasekhutla, 2020).

Figure: 1.1.1 Botswana Transit Countries



Source: (Workman et al, 2020)

Figure 1.1.2: Botswana imports from South Africa for 2018

Botswana imports from South Africa	Value	Year
Mineral fuels, oils, distillation products	\$701.04M	2018
Vehicles other than railway, tramway	\$356.64M	2018
Machinery, nuclear reactors, boilers	\$346.05M	2018
Pearls, precious stones, metals, coins	\$292.77M	2018
Electrical, electronic equipment	\$191.35M	2018
Beverages, spirits and vinegar	\$104.55M	2018
Plastics	\$98.36M	2018
Articles of iron or steel	\$90.02M	2018
Cereals	\$88.81M	2018
Vegetable, fruit, nut food preparations	\$62.05M	2018

Source: (Labana, 2020)

2.0 STATEMENT OF THE PROBLEM

The effects of COVID-19 are being felt across the transport sector. The pressure on organisations has shifted from moving freight and passengers to keeping a core transportation system operational with a skeleton workforce to ensure that fewer freight loads and key essential workers can continue to move. A secondary effect of this shift is the sudden change in sources of revenue for transport operators, with many experiencing an unexpected shortfall in their finances. Organizations will need to plan ahead to ensure that the transport network will be ready for a return to normal operations when lockdown measures are lifted (Casey & Wigginton, 2020). In Botswana local bus association persuades the government to lift public transport restrictions which were meant to ensure that all public transport operators observe social distancing and carry a maximum of 70% of the vehicle capacity. On the 8th of June, the Botswana buses association threatened to halt operations due to unsustainable operations as they tried to meet COVID-19 pandemic regulations. On the other hand, both local and cross border trucking companies in Botswana are crying from lack of load capacity, longer turnaround times, as well as unbecoming escorts from the police. Operating a transport business in Botswana has now been costly and highly restrictive (Rasekhutla, 2020).

The study seeks to unpack the operational challenges being faced by the road transport sector during the ongoing Covid-19 era. The research further seeks to proffer recommendations and means in which transport operators can remain viable and thriving in this trying time.

3.0 RESEARCH OBJECTIVES

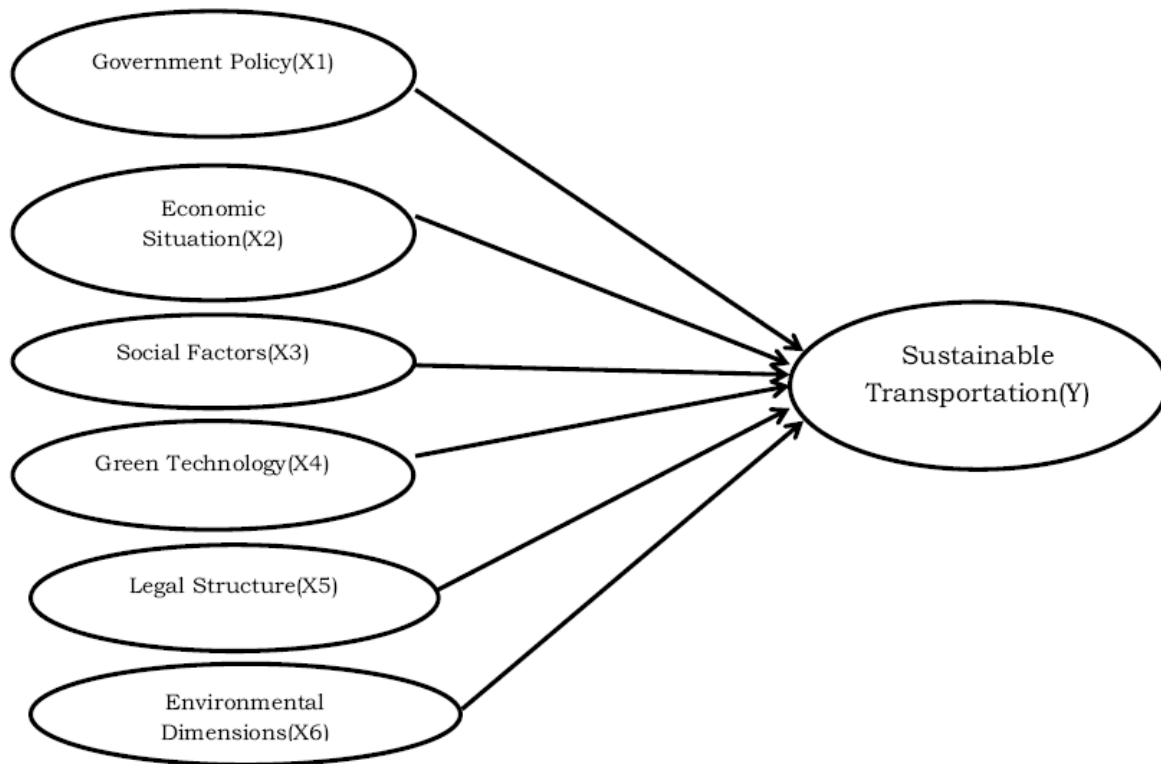
- To identify operational challenges facing transport operators during COVID-19.
- To establish measures necessary for transportation operational sustainability during COVID-19.
- To recommend various ways that make transport operations viable in Botswana during COVID-19 era.

4.0 LITERATURE REVIEW

Viable transport operation refers to one that supports the organisation financially, socially and preserves the environment. It is one that is characterised by high level mobility and contributing to social cohesion and economic uprightness.

4.1 Sustainable Transport Theoretical Framework

According to Dubey and Gunasekaran (2015), viable transport operation like sustainable transport is mainly guided by the external environment which comprises of government policy, economic situation, social factors, green technology, legal structures and environmental dimensions as shown in figure 4.1. Transport operators (passenger and freight) need to understand their macro-environment or external factors for them to operate viably and sustainably. External factors are typically outside the control of transportation agencies, but still, influence transportation system performance. Therefore, transportation agencies that wish to effectively manage system performance should understand the nature and extent of this influence of external factors on system performance. Understanding the influence of external factors helps in several elements of performance management, particularly in communication, operational viability planning and target setting (Rodrigue, 2020).

Figure 4.1: Sustainable transport framework

Source: (Dubey & Gunasekaran , 2015)

Dube and Gunasekaran (2015) noted there are a number of factors that result in transport being less viable or being unsustainable. In disaster or pandemic situations transport may be characterised by shrinking capacity for freight and passengers, restrictive or stringent government regulations, driver shortages and other factors. Economical trends or changes in the national or regional economy affect the manufacturing and distribution process, therefore, affecting the demand for transportation. In the case of a pandemic like COVID-19 most manufacturing organisations had stopped and governments were passing regulations on stopping all passenger movements as a way of combating the disease resulting in a sharp drop in operational viability for both freight and passenger transport (Vandycke, 2020).

Thriving in such environments will require transporter to look at the macro-economic environmental factor which is likely to give the organisation a distinctive opportunity like technological. Technological developments have streamlined and increased the productivity of company operations, created efficiencies for drivers and optimized the overall freight and passenger management process. This is mainly noted in transport intelligent systems which vary with the level of technologies applied, from basic management systems such as car navigation; traffic signal control systems; container management systems; variable message signs; automatic number plate recognition or speed cameras to monitor applications, such as security CCTV systems; and to more advanced applications that integrate live data and feedback from a number of other sources, such as parking guidance and information systems. Operational viability is much improved through the creation of an interconnected transport system with open communication between devices and vehicles. It also helps in actively

managing traffic, helping public transport to keep on schedule. Moreso use of technology works to ensure that citizens have access to real-time information about traffic and public transportation conditions. Mostly technology and communication assists organisations in reducing the need for human labour especially in this era where the spread of the disease is mostly through human beings (Dube and Gunasekaran 2015).

The stringent requirements to comply with health and safety requirements also play a major role in determining whether there is viable transport operation or not, more so when organisations are required to provide the healthy equipment at an extra unbudgeted cost.

4.2 Transportation operation in Botswana during COVID era

According to Tiro and Mmeso (2020), Botswana imposed new regulations for transporters in May 2020 after a truck driver who entered Botswana tested positive for COVID-19.

Regulations were imposed for both passenger and freight transportation. The passenger transportation was the most affected in terms of operational viability as the whole nation was placed on the state of emergency lockdown for 28 days effect from 3 April 2020 without mobility except for most essential services only.

The note has been taken that imported cases of Coronavirus started going up resulting in the government imposing a new regulation that all import truck drivers should be escorted from the border as soon as they are certified by health authorities to travel into Botswana. The purpose of police escorting the drivers was to ensure that truck drivers went to gazetted delivery stations and avoid taking unnecessary off-route trips that could expose the public to danger. In the same note truckers driving to Botswana or passing through the country complained that authorities were denying them a chance to do mandatory rest or buy food while on their way to delivery points. This challenge resulted in the rise of driver fatigue which affected driver performance, safety and contributed to a general reduction in operational viability of such operators (Tiro & Mmeso, 2020).

Figure 14.1: Police escorting truckers as they come into Botswana

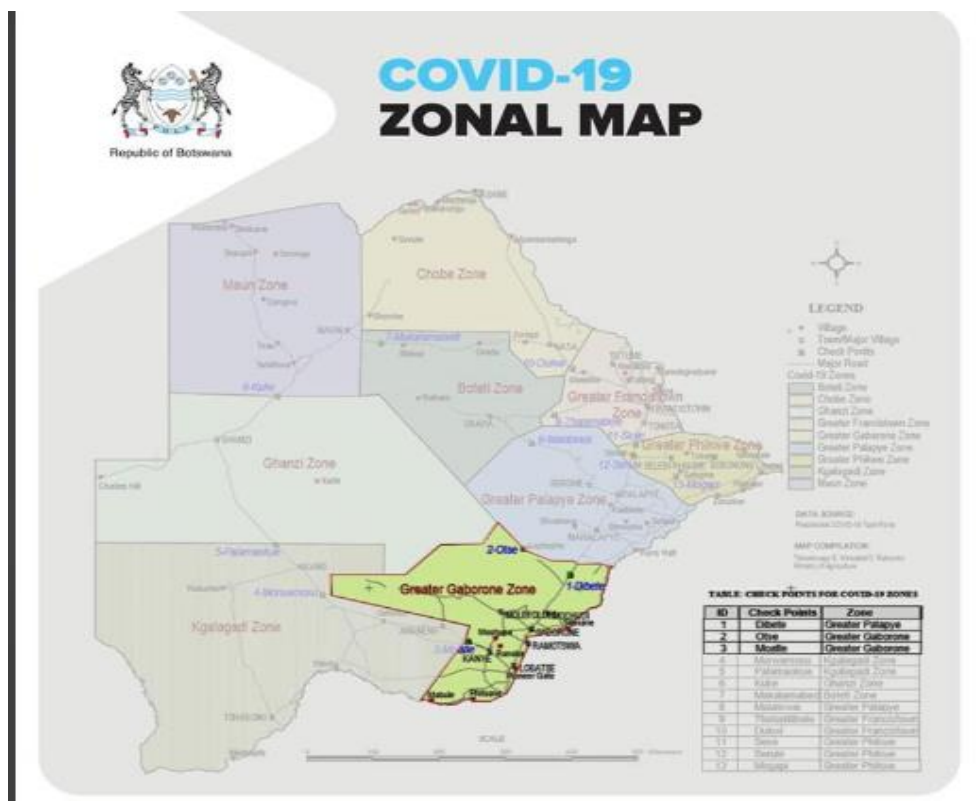


Source: (Lawrence, 2020)

5.0 STUDY AREA

The area under study was greater Gaborone which comprises Gaborone city and its surrounding areas as shown in figure 5.1.

Figure 5.1: Greater Gaborone Study Area



Source: (Government of Botswana, 2020)

6.0 METHODOLOGY

6.1 Research Design

The exploratory research design was used for this study, which is not intended to provide conclusive evidence but to help in better understanding of a phenomenon. Exploratory research tends to tackle new problems on which little or no previous research has been done (Sarantakos, 2006). In line with the present research, the paper adopts quantitative research methods. As part of the quantitative research, a questionnaire was designed and distributed to the target population. The questionnaire comprised of three sections with Likert scale questions. The questionnaire items were constructed and adapted from the existing intensive literature review. The Likert scale questionnaire looked at the challenges which respondents agreed are impinging on transport operational viability in Botswana as well as immediate solutions which respondents suggest. Questionnaires were distributed to the respondents via

social media (WhatsApp and Facebook media) and emails whilst telephone follow-ups were done to ensure maximum response rate. Hardcopy or physical paper distribution of questionnaires was avoided to minimise the possible spread of Coronavirus during the research study.

6.2 Population and Sampling Plan

The target population comprised of commercial freight and passenger transport operating organisations in Botswana. The sample population were 30 transport operators drawn from Greater Gaborone area.

7.0 RESULTS

Table 7.1 Challenges facing transport operators during COVID-19 period

Challenge	Frequency	Percentage %
Lack of financial back up	9	30
Lack of operational emergency preparedness	6	20
Lack of freight/ passengers-Reduced loading capacity to improve social distancing	4	13
COVID-19 compliance requirements challenges	5	17
Loosing Employees due to Covid-19	0	0
Driver related challenges (Fatigue, COVID testing delays and others)	2	7
Regulatory challenges (Botswana police compliance challenges etc)	1	3
Boarder delays and turnaround times	3	10
Totals	30	100

Source: Research data (2020)

Findings which are shown in Table 7.1 revealed that the majority of respondents representing 30% of sighted challenges related to lack of financial backup during the COVID-19 period. Transport operators did not have financial reserves to sustain them for a longer period. Twenty percent (20%) of respondents indicated that they did not have emergency preparedness with regards to operational management of the pandemic. Since the nation hasn't experienced a pandemic of this exact nature a number of operators did not have any instruments of operational emergency preparedness. Seventeen percent (17%) of the respondents indicated that their major challenge in this period was their inability to adequately meet all the requirements for COVID-19 compliance. Thirteen percent (13%) pointed out that lack of freight loads and passengers were their major challenges that resulted installed business. Border clearing delays, truck driver-related challenges and regulatory challenges represented 10 %, 7 % and 3 percent respectively. All transport operators did not have a scenario where an employee was lost due to Covid-19 for the period under study (May to June 2020).

7.2 Measures necessary for transport sustainability during COVID-19 era

Proposed Measure	Frequency	Percentage
Government financial assistance during COVID-19.	10	33
Improving transport safety to attract more passengers.	3	10
Diversification and venturing into transportation of essential people	3	10

and goods if necessary.		
Training on employees and managers in transport to adapt to the new norm quickly.	4	13
Ensure that passengers and employees adhere to COVID-19 PPE like masks as they board passenger transport.	6	20
Integration of private sector and government in transportation of goods and passengers.	2	7
Introduction of digital fare payment systems in public passenger transport to avoid human contact.	2	7

Source: Research data (2020)

As shown in figure 4.2 the majority of respondents (33 %) indicated that for transport operations to be viable and sustainable, the government should intervene financially assisting needy organisations for them to thrive through. On the contrary, 20% of the respondents acknowledged that the viability of the transport sector depends so much on adherence to COVID-19 personal protective equipment by all the people involved in the transport operation. Thirteen percent (13%) of the respondents under study pointed out that there is need for training of all employees in transport business on the understanding of what COVID-19 really is and in what ways do employees have to change their behaviour and conduct. Transport safety improvements (10%) and venturing into the transportation of COVID-19 essential goods, people and services (10%) were other measures that respondents indicated. Public sector and private sector integration comprised 7% of respondents whilst the introduction of digital systems and transport intelligence also had 7% of respondents.

8.0 DISCUSSION AND RECOMMENDATIONS

When disaster strikes, transport operations may stop their normal rhythm and operators are forced to follow a new temporary norm. In the case of the Coronavirus pandemic, social isolation is seen as the solution to quell the outbreak. Mobility system needs to be agile enough to adjust to the change while guaranteeing public safety and the continuous movement of people and goods. The following recommendations were seen necessary to sustain the transport business and operations in Botswana;

- There is a need for Government intervention and support in assisting private transport operators in times of pandemics and epidemics such as Coronavirus.
- Transport organisations should come back to the drawing board and devise better ways to cut on costs so that they are able to sail through the Coronavirus era with minimum revenue base.
- Organisations should begin to implement transport intelligent systems such as e-ticketing, vehicles with self-delivering and self-loading systems to minimise the human capital element during such pandemics as Corona.
- Backbone employees in the transport sector such as drivers should be conscientious on the safest way to handle vehicles, loads and passengers during operations.
- The quality of personal protective equipment for passengers and drivers needs to be increased. It should be made available even to those who cannot afford it since this is a public health issue rather than an individual health issue alone. Since the physical distancing plus personal protective equipment will be a norm - there is a need to

clearly specify the standards for this so that the transition can be made by transport service operators immediately.

9.0 CONCLUSION

Coronavirus pandemic has completely upended the transport industry in Botswana, mostly passenger transport. However, it has also demonstrated the vital importance of mobility to almost all aspects of our lives. Despite the current disruptions, transport is needed more than ever to take key workers to their jobs, deliver essential supplies, maintain food security, and support economic recovery. It's clear that if Botswana is to build a more resilient economy then a resilient transport system is also required.

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