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Significance of Driver and Vehicle Key Performance Indicators on Organisational Performance and Customer Satisfaction: Case of Bulk Fuel Supply Chain in Zimbabwe

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Abstract

Fuel supply is classified under critical and dangerous goods distribution. Truck Drivers (TD) and trucks are the two components involved in every stage of fuel road-distribution hence a focus on driver and vehicle key performance indicator measurements. The study examines the significance of driver key performance indicators and vehicle performance indicators on organisational performance and on customer satisfaction in the bulk fuel supply chain. A quantitative research methodology was conducted with 91 respondents drawn from the fuel sector. SMART PLS 3.3.3 was utilised for data analysis. The study found that there are positive and significant relationships between Vehicle KPIs and Driver KPIs; Driver KPIs and Organisational Performance (OP); Vehicle KPIs and OP; Driver KPIs and Customer service (CS), and OP and CS. The study also noted that Driver KPIs have significant mediating impact on OP. The mediating role of OP on CS was found to be insignificant.

Keywords: fuel, hydrocarbon, performance measurement, key performance indicators, truckdrivers

Introduction

The petroleum supply chain is critical to economic operations and to the lives of individuals in any nation(Ambituuni, Amezaga, & Werner, 2015). Sufficient crude oil and its basic products, such as gasoline, kerosene, and liquefied petroleum gas (LPG), are vital for economic development(Conca , Ridella , & Sapori, 2016). These products are utilised in a variety of industries, including manufacturing, agriculture, transportation, as well as for residential reasons(Bimha, Hoque, & Munapo, 2020). Apart from trucks transporting bulk fuel from Mozambique to Zimbabwe for domestic consumption, a substantial amount of fuel is transported via Zimbabwe from Beira to Zambia and the Democratic Republic of Congo(Bimha, Hoque, & Munapo, 2020). Truck drivers and trucks are involved in the loading, transporting, and delivery procedures, indicating that drivers and their vehicles are

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the most critical components of the gasoline supply chain. According to Li & Jiang (2016), proper fuel movement is mostly dependent on the driver's well-being and the mechanical fitness of the vehicle being operated. Another reason for incorporating key performance indicators is because hydrocarbons are highly combustible and can easily catch fire, resulting in fatalities if not handled properly. These are specialised consignment loads that differ significantly from standard dry freight loads. The uninterrupted and efficient operation of Zimbabwe's petroleum supply system is crucial, as the country consumes an average of 29000 barrels (about 4.611 million litres) of fuel every day, according to a 2014 report (The Global Economy, 2021). Despite its size and importance to national and global economies, the petroleum industry faces numerous challenges. It is a high-risk business, and even the smallest errors (such as concentration lapses when loading, shipping, or receiving products might result in product spills or fire) can have major effects to the environment, society, businesses, and their workers (Elhuni &Ahmad, 2017). According to Casal (2018), nearly 40% of all major accidents in the petroleum business occur during transportation and are caused by driver error or vehicle malfunction. In Zimbabwe, both primary distribution (from Beira Mozambique to depots or from the National Oil Infrastructure Company (NOIC) to depots) and secondary distribution (from depots to service stations and individual customers) of fuel are typically accomplished via road transport, which frequently encounters hazards such as road accidents and truck hijacking (Li & Jiang, 2016; Bimha, Hoque, & Munapo, 2020). While pipelines handle the majority of primary distribution, a significant percentage is still conveyed via road. According to Douglas and Swart (2017), truck accidents result in enormous economic and societal losses. Thus, truck drivers (TDs) form the backbone and strongest link in this chain of bulk petroleum distribution (Dubey & Gunasekaran 2015). The TDs are crucial in ensuring that petroleum products are delivered to customers on time, in full, and safely. Given the critical nature of the bulk fuel delivery chain, it is critical that TDs are experienced, well-trained, and motivated to accomplish their daily duties(Conca , Ridella , & Sapori, 2016). However, the traits and abilities of the driver cannot be examined in isolation. Driving quality is also influenced by the driver's motivation to complete the task (Fiorencio , Oliveira , Nunes, & Hamacher, 2015).According toAmbituuni, et al., (2015), truck drivers are motivated when their bosses recognize their success. Hald & Mouritsen, (2018) suggest that acknowledgment motivates employees to perform additional and higher-quality work.Conca , et al., (2016)suggest that drivers who believe their company recognizes and rewards their superior performance at work are more likely to remain in their positions and profession. Drivers who are demotivated lack self-esteem and are more prone to make errors that result in deadly accidents, product spillages, contamination, and labour disputes (Aguinis 2013;Appleton, 2017)). Employing and maintaining well-trained and motivated TDs enables the safe delivery of products to be ensured (Douglas & Swartz, 2017).Thus, employee recognition and motivation are vital to an organization's performance and should be integrated into employers' formal human resource management processes(Kazemi & Szmerekovsky, 2015). Apart from drivers, Douglas and Swartz (2017) noted that a truck driver cannot effectively complete a journey if the vehicle is mechanically or electrically defective. Numerous breakdowns and mishaps occur while vehicles are in route because of car problems. This essentially means that regular maintenance should be prioritized to reduce

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the likelihood of vehicle breakdowns and maximize vehicle uptime(Casal, 2018). On the contrary, petroleum companies should have effective breakdown recovery procedures in place to minimize vehicle downtime caused by failures. Identifying and recognizing truck drivers and vehicles' performance can be accomplished through the use of key performance indicators (KPIs) that assist businesses in managing performance(Dubey & Gunasekaran, 2015). Key performance indicators are metrics that focus on the aspects of business performance that are critical to the corporation's current and future success (Parmenter 2015). They are critical since they indicate the company's progress toward its objectives(Hald & Mouritsen, 2018). Key performance indicators assist organizations in managing performance, tracking odd trends, and arming employees and management with additional authority to direct them toward company objectives (Conca , Ridella , & Sapori, 2016).There does not appear to be a great deal of study in Zimbabwe that examines driver key performance indicators, driver motivation, and vehicle key performance indicators(Bimha, Hoque, & Munapo, 2020; Mules, 2019). However, evidence indicates that this is a critical issue as the number of haulage trucks and trucking companies grows (Pearson, Boston , Chukwuma , & Atelhe, 2015).Employee motivation is critical for any business's growth and success (Parmenter, 2015). The purpose of this study is to ascertain the effect of driver and vehicle key performance indicators on organizational performance and customer satisfaction throughout the bulk fuel supply chain. The purpose of this study is to determine whether implementing driver and vehicle-related key performance indicators improves organizational performance and customer satisfaction. The term "organization" refers to a business that owns trucks (third party organisations or petroleum organisations with own fleet) and uses them to deliver fuel to various customers. On the other hand, customers refer to fuel service stations that receive fuel as well as private and public organizations that receive fuel on a regular basis. Customer satisfaction is defined as the satisfaction of a customer's expectations in their entirety (Ali & Raza 2017). The following section articulates the supporting literature for the study.The paper is built out of 5 sections and these are introduction, literature review, methodology, findings and references.

Literature Review

Literature review focuses on two major aspects: the conceptual framework underpinning the study as well as the KPIs and performance measurement in fuel supply chain.

Conceptual Framework

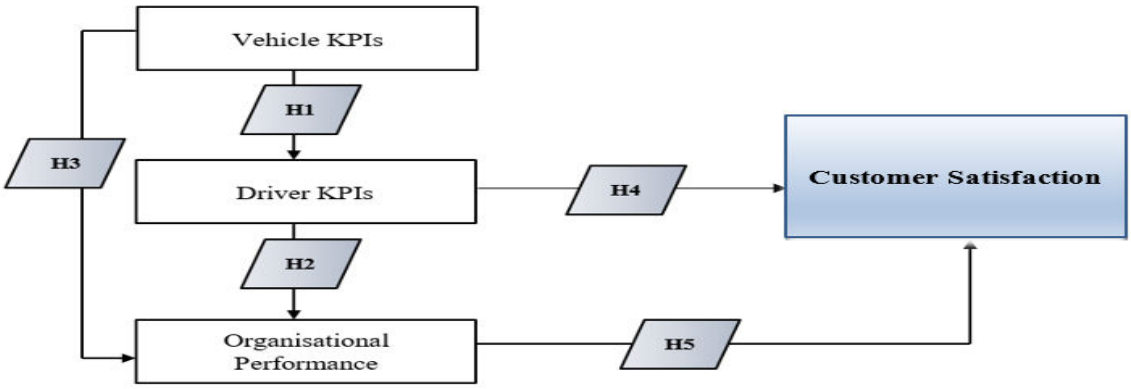

Figure 1: Conceptual Framework

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Source: Own

The following hypotheses were developed to justify relationships amongst the variables in figure 1;

H1 Vehicle KPIs have a significant influence on Driver KPIs
H2 Driver KPIs have a significant influence on Organisational Performance
H3 Vehicle KPIs have an impact on Organisational Performance
H4 Driver KPIs have an influence on Customer Service
H5 Organisational Performance has an impact on Customer Service
Ha Driver KPIs has positive mediating role on Vehicle KPIs and OP
Hb OP has positive mediating role on Driver KPIs and CS

KPIs and Performance Measurement in Fuel Supply Chain

A key performance indicator (KPI) is a quantitative indicator of performance over time for a given goal. KPIs provide objectives for personnel such as drivers or asset (truck) performance, give benchmarks for progress, and provide insights that assist management across the firm in making better decisions (Appleton, 2017). KPIs measure an organization's success or the success of a certain function in which it engages, such as fuel distribution or logistics operations. A supply chain is defined as the coordination of operations that result in the fulfillment of client requests (Hugos, 2018). Petroleum supply chains are frequently split into streams based on the activities carried out (Fiorencio, et al., 2015). Kazemi and Szmerekovsky (2015) classified the gasoline supply chain into three distinct sectors: upstream, midstream, and downstream. The downstream phase of the FSC is defined as a complex system comprised of refineries, distribution centers, customers, and modes of transport that work cooperatively to ensure petroleum products reach their intended destinations (Kazemi&Szmerekovsky 2015). This sector is responsible for activities such as crude oil refining, the sale and distribution of a variety of products to clients (Elhuni& Ahmad 2017), as well as storage (Li & Jiang, 2016). The downstream sector is crucial for the role of drivers and trucks in transporting petroleum supplies from refineries to depots (Ambituuni, Amezaga, & Werner, 2015).According to The Global Economy, (2021)truck transportation is a critical component of modern supply chains, and truck drivers and vehicles are viewed as critical to the effectiveness of these supply chains (Dubey & Gunasekaran 2015). Road transport is frequently utilized to deliver petroleum products between depots and clients (Al Chukwuma &Atelhe 2015). In Zimbabwe, unlike many other countries, road transport is used for both primary and secondary distribution of petroleum(Appleton, 2017), that is, from refinery plants to depots and from depots to customers (fuel service stations and individual bulk fuel customers). It is critical for petroleum and logistics organizations to be able to quantify their performance and determine whether the quantified performance enables them to achieve objectives such as increased customer satisfaction or overall organizational success(Aguinis, 2013). The following section examines key performance metrics for vehicles used in the bulk gasoline distribution and supply chain.

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Vehicle Key Performance Indicators

These are performance measurables aimed at ensuring that vehicles are performing at their best. These can be equipment that vehicles should carry, design structures, mechanical or electrical efficiency variables meant to ensure that fuel distribution, loading or delivery is made easy for the vehicle operator, ie the truck driver(Bimha, Hoque, & Munapo, 2020). The initial focus on trucks or distribution vehicles should be on measuring adherence to preventive maintenance over a specified time(Ambituuni, Amezaga, & Werner, 2015). For instance, trucks go through service A, B, C, or D after every 20000km, 40000km, 60000km, or 80000km respectively(Casal, 2018). Management should ensure that they have checklists on the maintenance history of each vehicle. Each vehicle should have a valid certificate of fitness and licensing before the truck goes on any fuel delivery trip. The other set of performance variables include the safety equipment that should be checked on board a vehicle delivering fuel(Mules, 2019). These include proper loading rails, enough barricading cones and reflective stripes, enough fire extinguishers, enough spillage kits, properly working and earthed hoses, availability of delivery pump (mounted on the vehicle or independent), properly calibrated fuel tankers, properly calibrated fuel measuring instruments and conversion charts, and availability of vehicle safety chains between tractor and trailer or between second trailer and independent trailer(Conca , Ridella , & Sapori, 2016). In Zimbabwe, it is important that fuel delivery vehicles always have mandatory documents on board as governed by statutory regulations. These include calibration certificates for tankers carrying fuel and Environmental Management Authority (EMA) certifications(Mules, 2019; Bimha, Hoque, & Munapo, 2020; Makhanda, Pwaka, & Mafini, 2019). Failure to have these documents on board may result in delayed deliveries that may affect organisational competitiveness and customer satisfaction. Vehicle licence and certificate of fitness are available. It is also mandatory that these vehicles have on-board computer tracking systems as a performance parameter. Fleet managers should ensure that tracking systems are fitted and functional before the vehicle is deployed for any bulk fuel delivery(Douglas & Swartz, 2017). All these KPIs will assist the organisation in measuring vehicle functionality towards meeting certain objectives. The next sub-section focuses on driver key performance indicators.

Driver Key Performance Indicators

Accomplished and efficient truck drivers are necessary to assure delivery responsiveness, delivery flexibility, and problem and complaint resolution in the distribution of gasoline products in order to improve supply chain efficiency and ensure customer satisfaction (Dubey & Gunasekaran 2015). At the end of the day, superior driver performance results in increased customer happiness (Dubey & Gunasekaran 2015). Typical key performance indicators in fuel delivery include over speeding cases per driver (over 80km/hr), harsh braking cases per driver, night driving cases per driver, minor accidents per driver, fuel loss and shortages per driver, fuel contamination per driver, violation of loading instructions and safety, violation of off-loading instructions and safety or violation of safe driving instructions(Makhanda, Pwaka, & Mafini, 2019). It is mostly the responsibility of fleet managers to educate drivers about these performance metrics and to explain why truck drivers must meet specific limits.

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Davidovi et al., (2020) reaffirmed that motivation is the primary force behind truck drivers' ability to pursue and meet their needs.Conca , et al., (2016) believe that motivated employees contribute to a company's improved success. It is consequently critical for a business and its fleet managers to understand what motivates their employees if they wish to improve the company's performance (Aguinis 2013; Kazemi & Szmerekovsky, 2015). Drivers can be motivated by a variety of factors, including positive relationships with supervisors, load schedulers, and other drivers, recognition of their opinions and communication (performance feedback), additional rewards for performance, such as trip bonuses or best driver of the month awards, and opportunities for advancement within the company (Li & Jiang, 2016). KPI management is viewed as a corporation's effort to consistently achieve its objectives(Appleton, 2017). Drivers are critical in delivering value to consumers, and their performance is directly tied to the company's delivery service quality, which can be correlated with organizational performance (Hugos, 2018).The next subsection discusses organizational performance.

Organisational Performance

According to Parmenter, (2015), any organisation operating in the fuel supply chain has a number of performance indicators. These indicators are derived from the fact that organisations go into trading for commercial purposes, which are more or less related to profit maximisation and business competitiveness or business continuity. In such regard, variables that reduce costs and increase profits are recommendable measures for organisational performance(Dubey & Gunasekaran, 2015).*On Time Pickup and Delivery*

On Time Pickup and Delivery is a critical OP indicator. This is derived by dividing the total number of pickups made during a period by the total number of loads supplied. Measuring "on-time delivery" enables organizations to evaluate the carrier's and driver's performance(Elhuni & Ahmad, 2017). A transporter that delivers late is bound to fail, and on-time delivery is contingent upon on-time pickups. Similarly, on-time pickup can be computed by dividing the total number of on-time pickups by the entire number of shipments carried by a particular carrier/driver(Fawcet, Ellram, & Orgden, 2014). On-time pickup and delivery go hand in hand with operational excellence and customer satisfaction, therefore it's critical to track both, since focusing exclusively on one can leave you with a skewed picture and little ability to improve(Bimha, Hoque, & Munapo, 2020).

Order Accuracy

Appleton, (2017) expounded that excellence has become the new catchphrase across all corporate platforms. Order accuracy is a metric that indicates the number of consignments that are processed, dispatched, and received without incident or issues. Petroleum companies track order accuracy by determining the time it takes to ship and deliver a product, determining whether the order was correct, and determining whether the product was damaged, contaminated, or lost(Hald & Mouritsen, 2018).

Costs Per Kilometre/Cost per litre

Fuel transportation is no exception. There are always costs associated with running a successful business(Appleton, 2017). The ability to track and trace costs is critical to

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operating and remaining in business. Calculating the cost per kilometre is easy as fleet managershave to get cumulative mileage per vehicle and the costs associated with the trip. Cost per litre is another indicator for evaluating operational performance in the petroleum transportation industry. It calculates the overall cost of road transportation per period by multiplying the volume delivered by the number of litres delivered(Elhuni & Ahmad, 2017).

Fuel efficiency

The most important cost to monitor in a transport operating organisation or department is the fuel cost. If organisations are not managing fuel costs well, they end up going broke due to excessive fuel costs. It is therefore crucial to monitor fuel consumption and guard against any potential siphoning or theft of fuel from the vehicle side tank for the organisation to remain viable(Bimha, Hoque, & Munapo, 2020).

Number of in-transit breakdowns

The number of breakdowns during fuel delivery and the promptness of breakdown recovery are also a fundamental measure of organisational performance. Petroleum organisations need to have a very effective and efficient breakdown recovery system(Makhanda, Pwaka, & Mafini, 2019). Note should be taken that fuel is a precious commodity which can be vandalised easily if trucks break down anywhere along these dangerous roads. Also, given that some organisations delivering fuel are third parties, it really needs a lot of swiftness to ensure the product is safe and avoid excessive delays to reach the customer's point(Conca , Ridella , & Sapori, 2016).

Customer Satisfaction

Customer organisations are usually satisfied when they receive their fuel deliveries on time, so that they don't run out of the product and lose business during the time they wait for deliveries to arrive(Conca , Ridella , & Sapori, 2016). A number of KPIs are used to measure customer satisfaction.

On Time and In Full Delivery

When consumers specify a specific delivery date, trucking companies are required to meet that deadline. This is a very important indicator for customer satisfaction, as a distribution organisation will be reliable and trusted by the customer organisation(Bimha, Hoque, & Munapo, 2020). It is highly likely that transport organisations that fail to meet on time and in full delivery will easily lose business and customer trust as it normally results in loss of business on the part of the customer(Davidovic, Pešić, & Bo, 2020).

Order Accuracy

Order accuracy is a metric that indicates the percentage of gasoline delivery orders that are processed, dispatched, and delivered without incident or issue. Measuring the time, it takes to load and deliver a product, determining whether the order was correct, and determining whether or not there were any losses are all ways for businesses to determine order accuracy. This is a critical indicator of operational reliability from the logistics company's perspective, which translates into customer satisfaction on the client's end(Douglas & Swartz, 2017; Davidovic, Pešić, & Bo, 2020).

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Driver Safety Consciousness

Most customers who deal with fuel are so particular about the level of safety consciousness on the part of the drivers who handle fuel deliveries. Such customers would really monitor the steps and stages taken by the operators during delivery time. Those operators who display a gross understanding of safety steps to be taken put customers in a relaxed mode and customers would definitely wish to engage with such drivers frequently(Makhanda, Pwaka, & Mafini, 2019).

Engagements with The Customer

The fuel supply chain management requires petroleum organisations or logistics organisations to initiate frequent engagements with customers. This will enhance symbiotic relationships between the customer and the fuel distribution organisation. Frequent meetings with the customer, say once every month, will be ideal to clear up any misconceptions or misunderstandings between the two trading partners(Bimha, Hoque, & Munapo, 2020).

Key performance indicators for drivers and vehicles contribute to an organization's performance improvement and, consequently, to increased customer satisfaction. When a consumer receives exceptional service, the customer becomes satisfied with the service (Lai & Cheng 2016; Shanka 2012; Vasumathi&Subashini 2015).

Methodology

A quantitative research method was the most appropriate for this research considering that respondents emanated from three groups and this involved collection of a huge volume of data that required numerical examination to be analysed comprehensively (Newman,2014).Thequestionnaires incorporated closed-ended Likert scale questions, which were standardised to allow for easy comparison (Saunders, Lewis & Thornhill 2016). The questions were developed and guided by the literature review regarding the importance of measuring driver performance using KPIs, motivation of truck drivers, the role of management in petroleum organisation, vehicle key performance metrics, distribution of petroleum products via road transport, and the research objectives of this study (Babbie & Mouton, 2014). To measure relationships presented in literature (2.1), the study gathered data from a total of 91 respondents selected conveniently and then groups were developed from three sectors dealing with petroleum products (Petroleum organisations, third-party logistics organisations, fuel service stations, and organisations that buy bulk fuel frequently). The stratum developed were truck drivers, transport management team (fleet managers, supervisors, transport officers, logistics supervisors), and customers, as indicated in table 1.

Table 1:Study Respondents

Sectors	No. of Organisations	Number of Respondents	Truck Drivers	Fleet Managers and Supervisors	Customers
Petroleum Organisations	2	33	20	13	

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Third-Party Logistics Organisation	2	26	19	8	
Fuel Service Stations	10	20			20
Organisations that buy bulk fuel frequently	3	11			11
	16	**91**	**39**	**21**	**31**

Three unique questionnaire instruments were developed for the three distinct respondent groups (Truck drivers, Transport management, and Customers). SMART-PLS 3.3.0 was used to conduct the Structural Equation Modelling (SEM) analysis. The measurement model was used to assess data validity and reliability, while the structural model was used to assess model fit and hypothesis analysis(Lohmoller, 1989).

Findings and Discussion

Measurement Model

The measuring model depicts correlations between constructs and their associated indicator variables. Indicators with weak factor loadings of less than 0.60 were eliminated as part of the measurement model review (Gefen & Straub, 2005). Due to low factor loadings only three items (CS1, DriverKPI1, and DriverKPI2), were omitted. Cronbach's Alpha, rho A, and Composite reliability (CR) coefficients were used to determine construct reliability, and all had values greater than the 7.00 threshold for internal consistency. When the average variance extracted (AVE) exceeded 0.500, convergent validity was considered to be good(Dijkstra & Henseler, 2015).The reliability and validity of the instrument, as well as the factor loadings, are summarised in Table 2. Discriminant validity was established using the Fornel-Larcker criterion. This is illustrated in Table 3, where the square roots of the AVE for constructs with a larger correlation than the inter-construct correlation are indicated. Additionally, discriminant validity was assessed using heterotrait-monotrait ratio coefficients (HTMT) with values smaller than the 0.90 threshold (Hensler et al., 2015). As a result, the constructs were determined to have discriminant validity (see Table 4).

Internal Consistency Reliability and Validity

Table2: Internal Consistency Reliability and Validity

	Loadings	Cronbach Alpha	rho_A	Composite Reliability	AVE
Customer Service		0.982	0.986	0.984	0.849
CS2	0.941				
CS3	0.909				
CS4	0.972				
CS5	0.858				
CS6	0.852				
CS7	0.973				

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CS8	0.834				
CS9	0.939				
CS10	0.964				
CS11	0.931				
CS12	0.951				
Driver KPIs		0.973	0.973	0.977	0.861
DriverKPI3	0.948				
DriverKPI4	0.949				
DriverKPI5	0.937				
DriverKPI6	0.922				
DriverKPI7	0.918				
DriverKPI8	0.899				
DriverKPI9	0.919				
Organisational Performance		0.959	0.970	0.964	0.732
OP1	0.924				
OP2	0.812				
OP3	0.869				
OP4	0.751				
OP5	0.948				
OP6	0.855				
OP7	0.911				
OP8	0.800				
OP9	0.831				
OP10	0.832				
Vehicle KPIs		0.983	0.985	0.985	0.895
VehicleKPI1	0.915				
VehicleKPI2	0.946				
VehicleKPI3	0.949				
VehicleKPI4	0.967				
VehicleKPI5	0.946				
VehicleKPI6	0.967				
VehicleKPI7	0.953				
VehicleKPI8	0.923				

Table 3:Fornel-Larcker Criterion

Latent Variables	Customer Service	Driver KPIs	Organisational Performance	Vehicle KPIs
Customer Service	**0.922**			
Driver KPIs	0.798	**0.928**		
Organisational Performance	0.667	0.791	**0.855**	

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Vehicle KPIs	0.525	0.625	0.667	**0.946**

Note: The variables in bold italic represent the AVE's square root.

Table 4:HTMT

Latent Variables	Customer Service	Driver KPIs	Organisational Performance	Vehicle KPIs
Customer Service				
Driver KPIs	0.815			
Organisational Performance	0.675	0.689		
Vehicle KPIs	0.524	0.836	0.661	

Structural Model

Path Analysis, Model Fit and Hypotheses Assessment

The structural model is consistent with the hypotheses contained in the research framework and model fit (Table 5). To examine a structural model, the R2 and Q2 scores, as well as paths significance have been used. The goodness of fit of the model is determined by the strength of each structural path, as measured by the R^2 for the predicted variables (Hu & Bentler, 1999). R2 ought to be greater than or equal to 0.1. (Falk & Miller,1992). The results in Table 3 reveal that all R2 scores are more than 0.1, demonstrating the establishment of predictive capability. Furthermore, Q2 demonstrates the predictive value of endogenous components. A Q2 score greater than 0 shows that the model is predictively significant. The data reveal that the predictability of the constructs is significant (see table 4). Additionally, the standardized root mean square residual (SRMR) and the Normed Fit Index were used to assess model fit (NFI). SRMR was 0.086, less than the 0.10 threshold, indicating an acceptable standard of model fit (Hair, Sarstedt, Ringle, &Guderg, 2018). The NFI was 0.904,suggesting a satisfactory and good model fit within the allowed range of 0.9 to 1. (Moss, 2021; Hooper et al., 2008). Along with fitting quality, hypotheses aimed at establishing the importance of the connections were evaluated. H1 determines the relevance of vehicle KPIs to driver KPIs. The results indicate that vehicle KPIs have a positive correlation with driver KPIs (=0.824, t=18.656, p=0.000), with a t-value greater than 1.96 and a p-value less than 0.050. As a result, H1 received backing. Mules, (2019) reaffirmed the association between vehicle and driving KPIs and emphasized that underperforming vehicles will undoubtedly impact the performance of the driver who operates the vehicle, highlighting the importance of measuring driver performance while also considering the vehicle's capability. H2 determines whether driving KPIs have a material effect on OP. The data reveal that the driver KPIs had a significant effect on OP (=0.440, t=4.569, p=0.000). As a result, H2 was granted approval. There is a fine line that separates driver performance from the performance of the logistics organization. Additionally, whether it is a third-party logistics provider specializing in transportation operations and management, its performance is highly dependent on the drivers and vehicles (Douglas & Swartz, 2017). H3 evaluated the effect of vehicle key performance indicators on OP. Review of the results

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(=0.304, t=2.233, p=0.026). H3 was backed. The vehicle is the most valuable asset in a logistics operation. Thus, organizational performance is fully dependent on the fleet's quality, capability, and efficiency. Organizations are encouraged to buy cars that can assist them in accomplishing their goals and should do so efficiently each time they operate (Pearson, Boston, Chukwuma, &Atelhe, 2015). H4 evaluated the effect of driver key performance indicators on CS. The results (=0.645, t=9.259, p=0.000) indicate that driver KPIs have a beneficial effect on CS. H4 was approved. Customer satisfaction in the bulk fuel delivery chain is highly dependent on the driver's ability to deliver fuel on time, in the correct quantity, and at the correct location. If truck drivers are not closely monitored, they may have a detrimental effect on client satisfaction (Conca, Ridella, &Sapori, 2016). H5 evaluated the effect of OP on CS. The results (=0.221, t=2.093, p=0.037) indicated that OP has a beneficial effect on CS. As a result, H5 was accepted. Davidovi et al. (2020) demonstrated that a successful organization can quickly convert into superior customer service satisfaction. Customer happiness is not an overnight phenomenon in logistics. It entails a complete commitment by the organization to drivers, managers, and vehicle performance metrics (Elhuni& Ahmad, 2017).

Table 5:Path Analysis, Model Fit and Hypotheses Assessment

	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	2.5%	97.5%
Driver KPIs -> Customer Service	0.645	0.070	9.259	0.000	0.497	0.776
Driver KPIs -> Organisational Performance	0.440	0.096	4.569	0.000	0.250	0.643
Organisational Performance -> Customer Service	0.221	0.106	2.093	0.037	0.011	0.453
Vehicle KPIs -> Driver KPIs	0.824	0.044	18.656	0.000	0.716	0.888
Vehicle KPIs -> Organisational Performance	0.304	0.136	2.233	0.026	0.028	0.579
	R^2	**Q^2**				
Customer Service	0.662	0.556				
Driver KPIs	0.679	0.578				
Organisational Performance	0.507	0.349				
	SRMR	**Normed Fit**				

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		Index (NFI)				
	0.073	0.904				

Mediation Analysis

Mediation analysis was conducted to ascertain OP and Driver KPIs' mediating role (Table 6). Ha examines whether OP has a mediating effect on CS. The findings revealed that OP has a negligible mediating effect on CS (=0.097, t=1.523, p=0.128) (p > 0.05). As a result, Ha is not supported. The model did not support OP as a mediator of CS, indicating that there is no substantial relationship between these two variables. Indeed, mediation reduces the strength of the relationship between the independent variable (Driver KPIs) and the dependent variable (CS). Hb tests the hypothesis that driver KPIs have a strong mediating effect on OP. The findings indicate that driver KPI has a significant mediating effect on OP (=0.363, t=4.394, p=0.000) (p < 0.05). As a result, Hb is endorsed and accepted.

Table 6:Mediation Analysis

	Total Effect	T	Sig	Direct Effect	Sig		β	T	P Values
Driver KPI-CS	0.742	19.676	0.000	0.645	0.000	DKPI-OP-CS	0.097	1.523	0.128
VehicleKPI-OP	0.667	8.244	0.000	0.304	0.026	VKPI-DKPI-OP	0.363	4.394	0.000

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