

**Statistical Analysis of Determinants of Operational Performance in Gujarat State Road**

**Transport Corporation: An Empirical Research**

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**Abstract**

Gujarat State Road Transport Corporation is going through very intense cut throat competition at present in State. It is very important for GSRTC to gain competitive advantage over rivals. Operational Performance is one of the major concepts that gain importance in the present time amongst researcher. This paper aims at exploration and evaluation of various factors that works as determinant and provides operational efficiency to public transport services.

**[1] Introduction**

In the globalized and competitive scenario Gujarat State Road Transport Corporation, Operational Performance has now become hotspot in the growth cycle of any business. It is because of the diversified and customized needs of customers which are ever growing and strength of competition in terms of homogenized offerings, experiential aspect of Public transport industry environment have become central to the customers (Liu and Liu, 2008). So, industry marketing managers in organizations need to craft appealing and long-lasting Operational Performance for their customers (Macmillan and McGrath, 1997; Pine and Gilmore, 1998; Berry et al., 2002). Operational Performance management strategies need to take into consideration several elements which influence the Operational Performance. It also has to consider the possible moderating effects, if any. So, a detailed empirical study in this area is a compelling necessity owing to the fact that GSRTC organization is growing both qualitatively and quantitatively. As a result of fast Growth and severe competition, customer retention and managing high churn rate are the most important challenges faced by telecom companies today. Customer retention can be achieved by identifying maximum revenue generating customers and managing the Operational Performance for such profitable customers.

**[2] Literature Review**

Performance efficiency has been cited as important in marketing for a long time. Abbott (1955), cited in Holbrook (2006, p. 40) said that: "What people really desire are not products, but satisfying

Operational Performances". Operational Performances were gained through activities that required physical objects for the services. People wanted products because they wanted the experience which they hoped the products would render. Dewey (1963) added the dimension of uniqueness and noted that Operational Performances involved a progression over time and the involvement and uniqueness made the activity stand out from the ordinary.

A diversity of dictionary definitions of experience gave rise to some confusion. Collins English Dictionary described experience as "The accumulation of knowledge or skill that results from direct participation in events or activities" and ". . . the content of direct observation or participation in an event" (Collins, 2007). Similar to Operational Performance, many definitions of Operational Performance Management can be found in literature. Schmitt (2003) defined "*Operational Performance Management is the process of strategically managing a customer's entire experience with a product or a company*" (Schmitt, 2003,p.17).

### **[3] Statement of the Problem**

The problem identified in this research is to seek relationships of the determinants on Operational Performance with and/or without the moderating variables. This would necessitate a systematic procedure of identifying the determinants, development of a metric of measurement of the endogenous and exogenous variables, and establishing hypothetical relationships between the variables of the study followed by the testing of this model. The end result would be the development of a model which can be analysed for the significance of influence so that managerial implications can be drawn.

### **[4] Research Objectives**

Having identified the research gap in the literature available in Operational Performance, following objectives have been identified to fill the gap.

- Identifying the determinants of Operational Performance for GSRTC
- Develop a metric for the measurement of Operational Performance and validate and test the same.
- Draw managerial implications based on the study and make suggestions for the GSRTC organizations to enhance Operational Performance so as to gain the competitive advantage in Public Transport Services

- To evaluate the impact of Crew Utility on Operational Performance in Public Transport Services
- To evaluate the impact of No. Of Passengers Operational Performance in Public Transport Services
- To study impact of Diesel KMPL on Operational Performance in GSRTCs
- To understand impact of Total CPKM on Operational Performance in GSRTCs
- To study impact of Effective KM on Operational Performance in GSRTCs

#### **[5] List of Hypothesis**

H1 = There is no significant Influence of No. Of Passengers on Operational Performance

H2 = There is no significant influence of Effective KM on Operational Performance

H3 = There is no significant influence of Diesel KMPL on Operational Performance

H4 = There is no significant influence of Total CPKM on Operational Performance

H5 = There is no significant influence of Total EPKM on Operational Performance

H6 = There is no significant influence of Crew Utilisation on Operational Performance

#### **[6] Research Design**

Research Design is a blue print or complete plan of research, which guides researcher on various aspects of research. Research Design used for this research are Exploratory, Descriptive and causal.

##### **6.1 Sampling**

- (i) Population: Depot of GSRTC
- (ii) Sample Size: 12 Depot of GSRTC
- (iii) Sampling Method: Non Probability convenience Sampling

##### **6.2 Contact Method**

Survey method, especially mall intercept was used in the research to collect primary data from respondent.

### **6.3 Research Instrument**

Structured questionnaire was used to collect data. Questionnaire consists of open ended Questions to collect needed information.

### **[7] Data Analysis**

Data analysis involves various types of statistical techniques to test the proposed hypothesis. In present paper simple and multiple regression techniques are used to evaluate significance of impact of various independent determinants i.e. No. Of Passengers , Effective KM, Total CPKM, Diesel KMPL, Brand Management and Crew Utilisation on dependent variable of the study i.e. Operational Performance.

### **7.1 Simple Regression**

One of the main research objectives of this study was to how and at which extent dynamic environment of the retail organization influence on the Operational Performance. There are six factors which are explored through factor analysis whose impact shown on Operational Performance. The relationship between explored marketing factors and Operational Performance established through regression analysis.

#### **7.1.1 No. Of Passengers**

The relationship between No. Of Passengers and Operational Performance was examined using OLS method of estimation in simple linear regression. In the simple regression Average score of the No. Of Passengers inserted as the independent variable and Average Operational Performance treated as the dependent variable.

<b>Model Summary</b>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.722 <sup>a</sup>	.521	.520	.53551
a. Predictors: (Constant), Network Efficiency				

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	161.589	1	161.589	563.476	.000 <sup>b</sup>
	Residual	148.547	518	.287		
	Total	310.136	519			
a. Dependent Variable: Operational Performance						
b. Predictors: (Constant), Network Efficiency						

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.232	.101		12.219	.000
	Network Efficiency	.640	.027	.722	23.738	.000
a. Dependent Variable: Operational Performance						

The model summary of No. Of Passengers and Operational Performance is given in Table and it shows the coefficient of determination ( $R^2$ ) under model which is 0.521, which meant the No. Of Passengers factor explained 52.1 percent of the variations in Operational Performance.

The ANOVA Table is used to assess the overall significance of the regression model. In Table, the F-value (563.476) and the p-value is 0.000. This meant that model is significant as p-values less than 0.05 at  $\alpha = 0.05$  level, so it provides enough evidence for the significant of the model.

Further Table provides the coefficient of the model. According to the table t it can be said that No. Of Passengers factor is significantly influence on the Operational Performance with the standardized beta weight of 0.722.

**7.1.2 Effective KM**

<b>Model Summary</b>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.587 <sup>a</sup>	.345	.343	.62645
a. Predictors: (Constant), Effective KM				

<b>ANOVA<sup>a</sup></b>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	106.854	1	106.854	272.283	.000 <sup>b</sup>
	Residual	203.282	518	.392		
	Total	310.136	519			
a. Dependent Variable: Operational Performance						
b. Predictors: (Constant), Effective KM						

<b>Coefficients<sup>a</sup></b>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.436	.132		10.919	.000
	Effective KM	.577	.035	.587	16.501	.000
a. Dependent Variable: Operational Performance						

The model summary of Operational Performance and Effective KM in Table shows the coefficient of determination ( $R^2$ ) under model which is 0.345, which meant the Effective KM factor explained 34.5 percent of the variations in Operational Performance.

The ANOVA Table was used to assess the overall significance of the regression model. In Table, the F-value (272.283) and the p-value were 0.000. This meant that model is significant with p-values less than 0.05 at  $\alpha = 0.05$  level that provide causal relationship between Effective KM and Operational Performance.

The study examines the significance influence of Effective KM on Operational Performance. Table provides the evidence for that as the p value which is 0.0000, is lesser than the level of significant. As the p value is less than the significant level so it can be rejected the null hypothesis and concludes than Effective KM factor is significantly make impact on Operational Performance.

**7.1.3 Diesel KMPL**

<b>Model Summary</b>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.728 <sup>a</sup>	.530	.530	.53023
a. Predictors: (Constant), Diesel KMPL				

<b>ANOVA<sup>a</sup></b>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	164.505	1	164.505	585.133	.000 <sup>b</sup>
	Residual	145.631	518	.281		
	Total	310.136	519			
a. Dependent Variable: Operational Performance						
b. Predictors: (Constant), Diesel KMPL						

<b>Coefficients<sup>a</sup></b>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.433	.091		15.770	.000
	Diesel KMPL	.613	.025	.728	24.190	.000

a. Dependent Variable: Operational Performance

The model summary which is shown in the table provides the information regarding coefficient of determination of the model and which is .530, it means that Diesel KMPL explained 53.0 percent of the variance in Operational Performance.

The ANOVA Table was used to assess the overall significance of the regression model. It shows p value 0.000 which is statistically significant at 5 % level of significant. The study examined the significance of Diesel KMPL in Table. Diesel KMPL have p-value of 0.000 which is significant, and the regression weight of Diesel KMPL is 0.728.

**7.1.4 Total CPKM**

<b>Model Summary</b>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.641 <sup>a</sup>	.411	.409	.59408

a. Predictors: (Constant), Total CPKM



ANOVA <sup>a</sup>						
Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	127.319	1	127.319	360.751	.000 <sup>b</sup>
	Residual	182.817	518	.353		
	Total	310.136	519			
a. Dependent Variable: Operational Performance						
b. Predictors: (Constant), Total CPKM						

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.187	.077		28.481	.000
	Total CPKM	.425	.022	.641	18.993	.000
a. Dependent Variable: Operational Performance						

The model summary of Operational Performance and Total CPKM in Table shows the coefficient of determination ( $R^2$ ) under model which is 0.411, which meant Total CPKM explained 41.1 percent of the variations in Operational Performance.

The ANOVA Table was used to assess the overall significance of the regression model. In Table, the F-value (360.751) and the p-value was 0.000. This meant that model is significant with p-values less than 0.05 at  $\alpha = 0.05$  level. In indicate the causal relationship between Total CPKM and Operational Performance.

The study examines the significance influence of Total CPKM on Operational Performance. Table provides the evidence for that as the p value which is 0.0000, is lesser than the level of significant.

As the p value is less than the significant level so it can be rejected the null hypothesis and conclude that Total CPKM is significantly make impact on Operational Performance.

**7.1.5 Total EPKM**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.756 <sup>a</sup>	.571	.570	.50693
a. Predictors: (Constant), Total EPKM				

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	177.023	1	177.023	688.874	.000 <sup>b</sup>
	Residual	133.113	518	.257		
	Total	310.136	519			
a. Dependent Variable: Operational Performance						
b. Predictors: (Constant), Total EPKM						

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.491	.082		18.206	.000
	Total EPKM	.566	.022	.756	26.246	.000
a. Dependent Variable: Operational Performance						

The model summary of Operational Performance and Total EPKM factor in Table shows the coefficient of determination ( $R^2$ ) under model which is 0.571, which meant the Total EPKM factor explained 57.1 percent of the variations in Operational Performance.

The ANOVA Table was used to assess the overall significance of the regression model. In Table, the F-value (688.874) and the p-value is 0.000. This meant that model is significant with p-values less than 0.05 at  $\alpha = 0.05$  level.

The study examines the significance influence of Total EPKM factor on the Operational Performance. Table provides the evidence for that as the p value which is 0.0000, is lesser than the level of significant. As the p value is less than the significant level so it can be rejected the null hypothesis and conclude that Total EPKM is significantly make impact on Operational Performance.

### 7.1.6 Crew Utilisation

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.700 <sup>a</sup>	.491	.490	.55222
a. Predictors: (Constant), Crew Utilisation				

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	152.173	1	152.173	499.016	.000 <sup>b</sup>
	Residual	157.963	518	.305		
	Total	310.136	519			
a. Dependent Variable: Operational Performance						
b. Predictors: (Constant), Crew Utilisation						

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.379	.101		13.717	.000
	Brand	.600	.027	.700	22.339	.000
a. Dependent Variable: Operational Performance						

The model summary of Operational Performance and Crew Utilisation in Table shows the coefficient of determination ( $R^2$ ) under model which is 0.491, which mean the Crew Utilisation factor explained 49.1 percent of the variations in Operational Performance.

The ANOVA Table is used to assess the overall significance of the regression model. In Table, the F-value (499.016) and the p-value was 0.000. This meant that model is significant with p-values less than 0.05 at  $\alpha = 0.05$  level.

The study examines the significance influence of Crew Utilisation factor on Operational Performance. Table provides the evidence for that as the p value which is 0.0000, is lesser than the level of significant. As the p value is less than the significant level so it can be rejected the null hypothesis and conclude that Crew Utilisation factor is significantly make impact on Operational Performance.

In summary, all the explored factors are founded significant through simple linear regression. Operational Performance is influenced by all the factors but intensity of the influences are difference from factor to factor.

**[8] Conclusion, Findings and Future Research Directions**

Based on above simple and multiple regression techniques used in the present paper it can be said that all the identified independent factors have very strong influence on dependent variable i.e. Operational Performance. So, it can be concluded that No. Of Passengers , Effective KM, Diesel KMPL, Total CPKM, Total EPKM and Crew Utilisation are key determinants in providing very successful and Operational Performance in the area of Public transport service provider industry. So,

all the present players of this industry should look at these determinants of Operational Performance and based on this, strategies for market should be crafted. Present paper focus on determinants of Operational Performance in telecom industry only. Further research can be carried out in other service oriented sectors also.

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