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# INFLUENCE OF CENTRALIZED OPERATION CONTROLS ON THE PERFORMANCE OF PUBLIC SERVICE VEHICLE FIRMS OFFERING LONG DISTANCE NIGHT TIME PASSENGER SERVICES IN KENYA

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**Abstract**

**Purpose:** The study aimed at establishing the influence of centralized operation controls on the performance of PSV firms offering Night time long distance passenger services in Kenya.

**Materials and methods:** This study targeted the SACCOs or Companies that have complied and have been issued with Road Transport Licences to operate Night Time Long Distance Passenger Services. Because of the specific character of these organizations the sample was selected by the purposive sampling method, the sampling frame being the records in the NTSA data bank, where only 39 firms are listed for this class of licences. This study adopted a descriptive research design and due to the fact that the population is very small, a census was undertaken. A questionnaire having both open and closed ended questions for primary data collection was used while the secondary data was obtained from documentary sources explaining theoretical and empirical information on diversity of influencing factors on PSV Industry performance. The data was collated, computerized and analyzed using SPSS Version 24. This software analyzed the data into percentages, means and standard deviations and using quantitative techniques the findings were presented in form of frequency distribution tables and pie charts.

**Results:** The study found out that use of Centralized Operations Control influences performance of the PSV industry as it influences in pooling of professional staff, effective and efficient fleet communication, the reduction of transaction costs, quicker and integrated data collection and analysis, it was also established that it also influences flexible route planning and management. **Recommendations:** The study recommends all the companies operating public service vehicles should have centralized operations to reduce transaction cost. This will facilitate in pooling of professional staff who in turn improve the services offered.

**Keywords**: *Centralized operation control, performance, PSV, night time, Kenya*

## 1.0 INTRODUCTION

### 1.1 Background of the Study

In Kenya the transport sector as defined in the Integrated National Transport Policy (INTP) (Rok,2009a) consists of various modes being Road transport, Airway, Railway, pipeline ,maritime and inland waterways and the Non-Motorised and Intermediate Means of Transport (NMIMT). The sector is regulated by various statutes that may be categorized as either over-arching (regulations covering several sectors) or sector specific statutes that focus only on regulating the Transport sector itself. Within the Road transport sub –sector the units that use the Roads are subdivided into Goods transport and Passenger transport vehicles, where after, the Passenger transport Service Vehicles are further classified as Public service vehicles and private services vehicles.

#### 1.1.1 Global Perspective on Performance of the Road Transport Sub-sector

The WHO global status report on road safety (World Health Organization (WHO), 2013) identifies five key risk factors on road safety in the WHO European Region, where about 92,492 persons died in 2010 due to RTA injuries. The number of vehicles was recorded at 6% over the years to 2013 and RTA are the major cause of death for those aged between 5 to 25 years of age, 50% of the RTA deaths were by car occupants while 27% were pedestrians. Safety standards for vehicles within the region include use of seat belts (96 % of all countries), anti-locking brake systems (37%), electronic stability control system (17 %) and 32 % of countries require use of airbags. In this region, only 41 countries have put in place national policies that support investment in public transport and speed controls. (UNICEF,2015), reports that Economic cost of RTA injuries range from 1-5% of GDP, varying by country, and overall cost of fatal and serious injuries in the 80 lowest income countries is estimated to be a staggering $220 billion per year,(iRAP,2013). In a report prepared on the social cost of RTA and injuries, (Newzealand,2011) the total social cost was estimated at $4.15 billion per annum, at June 2011 prices.

In a study on ITS for Indian cities,(Rijurekha Sen & Raman,2012) notes that ITS is an interdisciplinary research area that involves; Putting up road sensors, using mobile phones for sensing, systems for analyzing sensed data, Communication among sensors and traffic control authorities needs wired or wireless networking background and applications like traffic signal management need transportation engineering background. While in their ITS action plan 2014-2018, (NewZealand,2014) indicates that ITS can be applied to vehicles, trains, aircraft and ships and the ITS components include Computer processing capacity, Communications and Control systems, Infrastructure ( signals),Vehicles (braking systems),User interface, Input and output devices (smartphones, screens ), Sensors, Vehicles Infrastructure Users, Stored information (Maps, Databases, Historic information).

#### 1.1.2 Local perspective on performance of the Road Transport Sub-sector

The Kenya vision 2030 mission (RoK, 2008e), is to transform the country from a third world income country status to a middle income country status, the economic pillar seeks to improve

the prosperity of all regions in the country and seeks to achieve a GDP growth rate of 10 % by year 2015. Towards achieving this the GoK recognizes Road Transportation as one of the key sub sectors in economic development and has invested in improving the physical road infrastructure, safety management systems and put up regulatory structures in place .

The NRSAP (RoK,2005k) indicated the fragmentation of the institutional and organization structure of the Road Transport Sub-sector was a key obstacle, (Chitere & Kibua, 2004), recommended the unification of the institutions dealing with Road Transport by putting them under one major institution. The NTSA act no. 33 of 2012 was effected (RoK,2012d) and the centralized regulatory body was put into place, its core mandate being to implement policies relating to road safety, plan, manage and regulate the Road Transport, ensure provision of a safe, reliable and efficient road transport service, administer the traffic act, (RoK, 2014 i) and any other written law it is mandated to administer.

In Kenya PSVs are directly owned by individual entrepreneurs but, to be licensed to operate a PSV (RoK,2014f) one must be either registered in a Sacco ( RoK,2012g), or under the companies act (RoK,2012h). The SACCOS or companies would be the direct institutional agents of the vehicle owners. The Authority (RoK,2014f) set various RTL classifications where specific conditions set for Night Time Long Distance Passenger Services requires Installation of various ITS for Fleet Management, Driver Management, Centralized Operations Control, Customer complaints collection and analysis. The operator Companies/Saccos are required to make quarterly returns on operational issues to the Authority to include; their base of operations, proposed routes, time table and a tariff structure per every route and report also on the number of customer complaints received and actions taken thereby.

**1.2 Statement of the Problem.**

The National Road safety action Plan (RoK, 2005) indicates that there was poor road discipline and compliance by drivers, cyclists and pedestrians in Kenya due to their poor attitude and behavior. Vehicle standards, poor roadworthiness and the road transport infrastructure were contributing factors to poor road safety (RoK,2005). While (WHO,2014) says Kenya has poor law enforcement standards on Road safety regulations.

The Regulatory Authority (RoK, 2013), introduced general conditions to be complied with by all road transport operators for increased vehicle security, road safety and driver management. However, inspite of the regulations on the mandatory use of FMS in the Road Transport Industry in Kenya, in a survey of RTA injuries by (Matheka, Faraj , Chebiwot, & Witte, 2015); indicated that the country has a high RTA fatality rate at 20.9 per 100,000 which is still higher than global average rate of 18.00 per 100,000.

Previous research on use and influence of FMS in the Road Transport Industry has been concentrated on developed countries and few have been undertaken in developing countries. However, in a study on FMS for Indian Cities, (Rijurekha Sen & Raman,2012) observed that FMS used for efficient traffic management in developed countries have to undergo adaptation and innovation to suit the contrasting traffic characteristics of the developing Countries roads. Also in a study on the use of FMS by Australian transport companies done by

(Zhelyazkov,2012) states that lack of information about the available FMS, their technical features and how those match the Road Transport companies needs are a big limitation in their use.

In Kenya , in a study to establish the influence of fleet management practices on service delivery to refugees in UNHCR Kenya Programme, (Gitahi & Ogollah,2014), used descriptive research design, the target population being employees in transport and fleet management in UNHCR. The study variables were limited to repair and maintenance, fuel management, vehicle tracking, driver management and training, after analysis all the variables were significant ($p<0.05$). However, these results may not be directly replicated to a study sample drawn from the 38 firms licensed for Long Distance Night Time Passenger Service because of the specific character of these firms and their operational environment. This group of firms is therefore targeted as they are able to provide key in-house information and data relating to this different operational environment which is being targeted by this study.

There may not have been a study on the Public Service Vehicles offering Long Distance Night Time Passenger Services in Kenya to evaluating the influence of the Fleet Management Systems fitted after the regulations were issued (RoK,2013j). Therefore, it was expected that this study would unveil some knowledge gaps and hence make relevant recommendations on the appropriate measures for improving the future utilization of the Centralized Operations Control in the sector.

### 1.3 Study Objective

To examine the influence of Centralized Operations Control on the Performance of Public Service Vehicles offering Long Distance Night Time Passenger Services in Kenya.

## 2.0 LITERATURE REVIEW

### 2.1 Theoretical Review

This offers an overview of the key management theories and the link between the key theories and the independent variable of this study are explained.

#### 2.1.1 The Resource Based Theory

The resource based theory was first argued by Wernerfelt in 1984 and it argued that not all resources are strategically relevant in an organization and that a firm has the ability to achieve and sustain a competitive advantage if it possesses resources that are valuable, rare, imperfectly imitable and non-substitutable. The theory is concerned about how the resources are inputed into the firms production process (Conner & Prahalad,1996),each organization has a specific resource capability that aids in achieving particular goals, hence differences in performance of firms are mainly driven by their unique resources and capabilities and not by industry's structural characteristics. Where a firm possesses critical resources that have strategic value, it is better to retain the activity in house but where the resource strategic value on the target activities are low, and the firm has no existing internal resources to perform the required activities, then the firm decides by comparing all resources they need by comparing the attributes of the resources with

each other. those resources that have greater value, rare, less immutability and substitutability are retained in house while the other activities or resources are outsourced.

The resource based view theory is may be used to guide firms to compare its resources and those of vendor firms to decide which resources to outsource to gain a competitive advantage. (Langlois,1990) argues that firms are forced to rely on external suppliers who have the knowhow, valuable resources and capabilities to be able to gain a sustainable competitive advantage. This theory could be of relevance to the situations prevailing in the PSV industry in choosing whether to retain or outsource the centralized operations control centres and focus on their core activities to improve their performance.

### 2.2 Conceptual Framework

The Conceptual framework herein illustrates the relationship between the independent and the dependent variable (Kombo & Tromp, 2006). (Kaplan, Gheen, & Midgley,2002) describes a conceptual framework as the researcher's own position on the problem and gives direction to the study. (Botha, 1989) says the conceptual framework may be an adaptation of a model used in a previous study, through the conceptual framework the researcher can be able to show the relationship of different constructs that he wants to investigate.

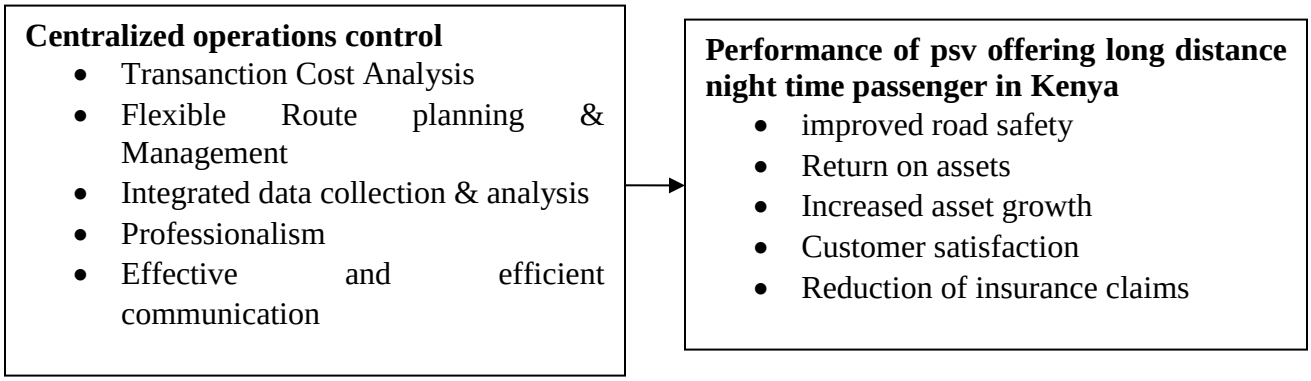


**Figure 1: Conceptual Framework**

#### 2.2.1 Performance of the Industry

(Corina,Liviu & Roxana, 2011), indicates Performance as a set of financial and non-financial indicators which offer information on the degree of achievement of objectives and results. (Lebans & Euske, 2006), Says Performance may be understood differently from a person within the organization compared to one from outside. While ( Nohria, Joyce and Robertson, 2003), suggested that leadership is a key element that ensures the connection between the success factors of an organization.(Camilleri,2015) indicates that Organizational performance may be influenced by factors such as, the employees‟ high satisfaction with their jobs, high motivation to serve the public and strong intentions to work for the organization willingly and devotedly(Kim, 2005).

According to (Cheew & Wima,2006), it is well accepted that performance measurement plays many important roles in running an organization. These include translating strategy into desired behaviors and results, communicating these expectations, monitoring progress, providing feedback, and motivating employees through performance-based rewards and sanctions. For a long time, managers had primarily used accounting-based measures for these purposes. But (Cheew & Wima,2006) asserts that with the advent of new competitive realities such as increased customization, flexibility, and rapid response to customer expectations, as well as new manufacturing practices such as Just in Time and total quality management, many have argued that accounting-based performance measurement systems are no longer adequate. A prominent example of these new approaches is integrated performance measurement systems, such as the balanced scorecard.

### 2.2.2 Centralized Operations Control

Wagenaar (2006) says centralization and shared services have in common the notion that functions are moved to a centralized location. Bringing together similar support processes to be centrally provided increases productivity which in turn promotes efficiency and effectiveness. (Heek, 1999) points out that a Centralized approach allows most activities to be undertaken more cheaply per unit. ICT has great potential of reducing transaction costs and increasing the speed and reliability of transactions (OECD, 2013). According to (Muathe, Wawire, & Ofafa,2013) application of ICT can reduce operation costs by decreasing material procurement and transaction costs resulting in lower prices for intermediate and finished products. (Kollberg, 2006), indicates the impact of ICT can be expressed in terms of different dimensions of integration either internal or external and other dimensions such as systems, technology and performance measurement may also be relevant to take into consideration for exploring the impact of ICT .

Amadi, Ahaiwe, Etus and Akpabio (2014) notes that the ITS (Traffic Management Centers) serve as the major point of connectivity between the array of ITS field devices and the Centre where real time information in the form of video and data is collected and analyzed. The real time information will be disseminated to the managers, supervisors or drivers via internet and smart phones for internal control and management. (Sriram & Stump, 2004) asserts that intergrated ICT contributes to improved communications patterns, speeds up inter organizational activities through its ability to store, transmit and process information.

Caiazzo, Evangelista and Sweeney (2004) says the use of specific technological capabilities may leverage transport and logistics services and facilitate more effective organizational and flow integration across companies. Centralization brings immediate benefits for operators seeking to improve network efficiency and quality as well as coming to grips with digital convergence transformation.(Heek, 1999) indicates that in dealing with information systems, organizations have to cover responsibility for systems planning, organizational structures and staffing, data management, computing and data management architecture ,systems development, IT acquisition, training, and technical support.

## 3.0 METHODOLOGY

This study adopted a descriptive research design, which sought to gather quantitative and qualitative data, to describe the status of affairs as they exist in the Public Service Vehicle. The study population was the PSV Road Transport operator SACCOs and companies, which are in total 635 which were licensed to operate in Kenya (report by NTSA,2015), the licenses are of various categories. The largest number of firms being 597 representing 94 % are registered for day time commuter services while only 39 firms representing 6 % (report by NTSA,2015) are licensed to offer Long Distance Night Time Passenger Service after fulfilling the requirements set out by the Regulator (RoK,2014,f). This study target population is those 39 firms licensed for Long Distance Night Time Passenger Service because of the specific character of these firms and their operational environment as they are compelled to fit their vehicles with specific Fleet Management Systems for enhanced vehicle security, road safety, driver management, customer complains management and long-term data logging and storage. These firms were therefore targeted as they were able to provide key in-house information and data necessary for this study. In this study, one respondent from each of the 39 firms selected constituted the representative sample. The study collected both primary and secondary data. The data after it was gathered it was coded to enable the responses to be grouped into various categories. The data collated was entered into a computer and analyzed using Statistical Package for Social Sciences (SPSS Version 24). This software package enabled the researcher to analyze the data into percentages, means and standard deviations; the data was analyzed using quantitative techniques.

## 4.0 RESEARCH FINDINGS AND DISCUSSIONS

### 4.1 Response Rate

The study targeted a sample of 35 respondents from the PSV firms licenced to offer long distance night time passenger services in Kenya. A total of 35 questionnaires were administered and 33 were filled and returned. A total of 5.7% of the respondents were reluctant to answer the questions and did not return the questionnaires. From the returns a 94.3% response rate was achieved, which is considered as a reliable response rate for data analysis

Mugenda and Mugenda (2003) indicates that for generalization a 50% response rate is adequate for analysis and reporting, a 60% response rate is good, while a response rate of above 70% and over is excellent. The high response rate could be attributed to the data collection procedure, the pre notification of the potential respondents and persistent following by the researcher. The drop and pick latter method helped in that the respondents were given adequate time to fill in and return the questionnaire

**Table 1: Response Rate**

| Response | No | Percentage (%) |
|---|---|---|
| Questionnaires filled and returned | 33 | 94.3 |
| Questionnaires not returned | 2 | 4.7 |
| **Total** | **35** | **100** |

### 4.2 Demographic Information of the Respondents

#### 4.2.1 The Gender Distribution

The study sought to find out whether there was gender balance in the positions and further establish which gender was more engaged in the management of PSV industry and its decision making. The findings are indicated as in Figure 2.

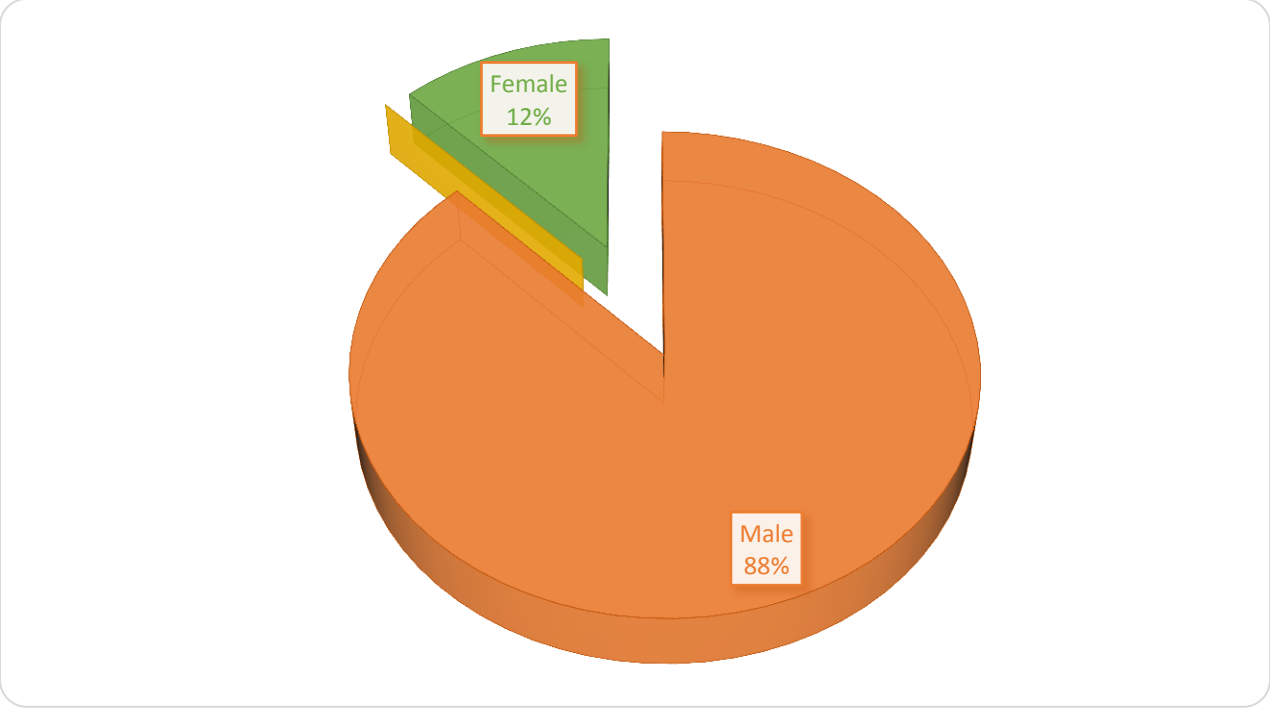


**Figure 2: Gender Distributions of Respondents**

From the findings as indicated in Figure 2, majority of respondents in the Psv industry were male gender 29 (87.8%) and the female gender was represented by 4 (12.2%.) This indicated there is a general gender imbalance in the PSV transport industry. (Escott whitefield,2002) indicated that there is gender disparity in the public sector where the male gender still dominates over female

gender. The dominance of male gender as the respondents herein may mean the responsibilities and management decisions are mostly assigned to the males, than to females in this industry.

### 4.2.2 Age Distribution

The respondents age distribution was categorized as in certain ages as between 20-25 years, 26-30 years, 31-35 years, 36-40 years , 41-45 years, 46-50 years and over 50 years. This was to help in determining how age of the respondent relates to assignments in decision making in the PSV industry. The findings are indicated in figure 3

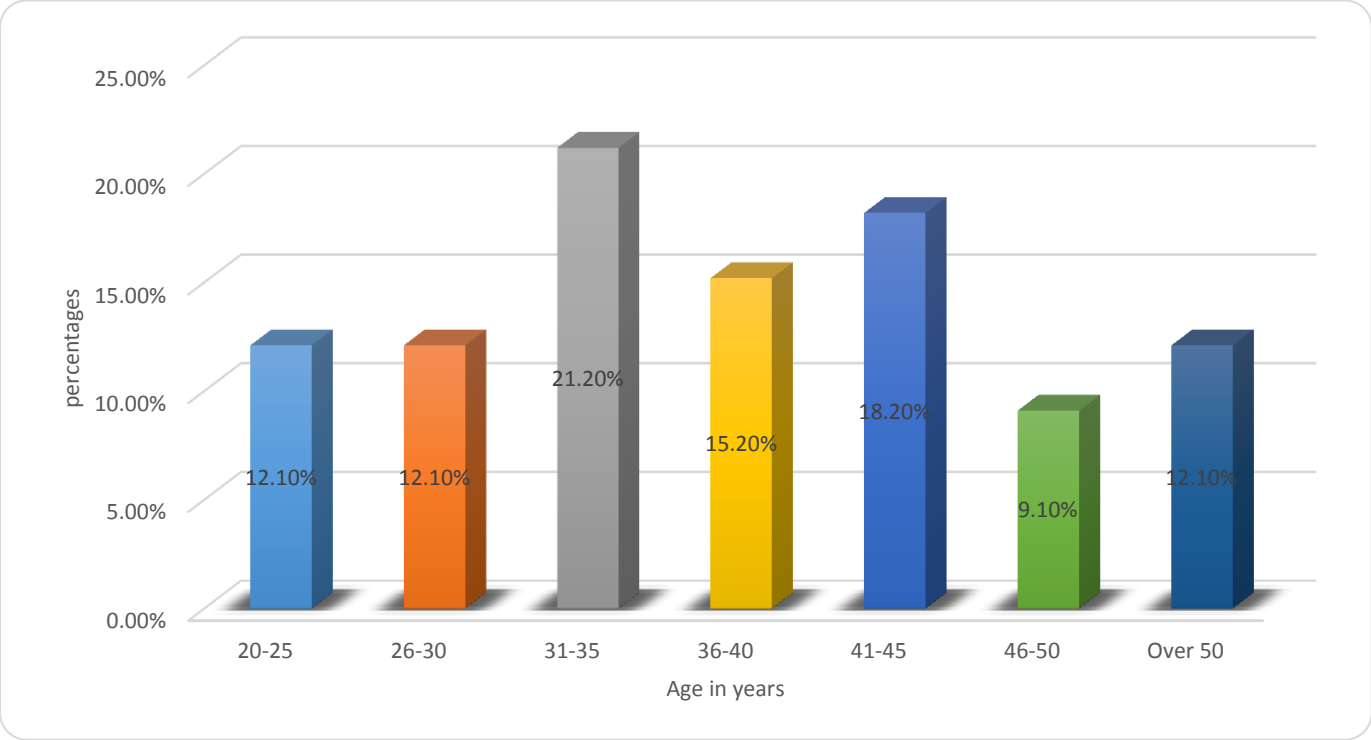


**Figure 3 The Age Distribution**

From the results as shown in figure 3 the majority of the respondents 7 (21.2%) were in the age bracket of 31-35 years , while 6 (18.2%) were found to be in the age bracket 41-45, while another 5 (15.2%) were in the range of 36-40 years old, those between 20-25 , 26-30 and those above 50 each got 4(12.1%) respectively and lastly those of the range of 46-50 got 3 (9.1%)

### 4.2.3 Level of Education

The study also found it necessary to determine the level of education of the respondents to ascertain whether they are well trained and equipped with adequate knowledge, skills and how

well they can understand and be capable of communicating the information sought from them pertaining to this study. The findings are as illustrated in figure 4

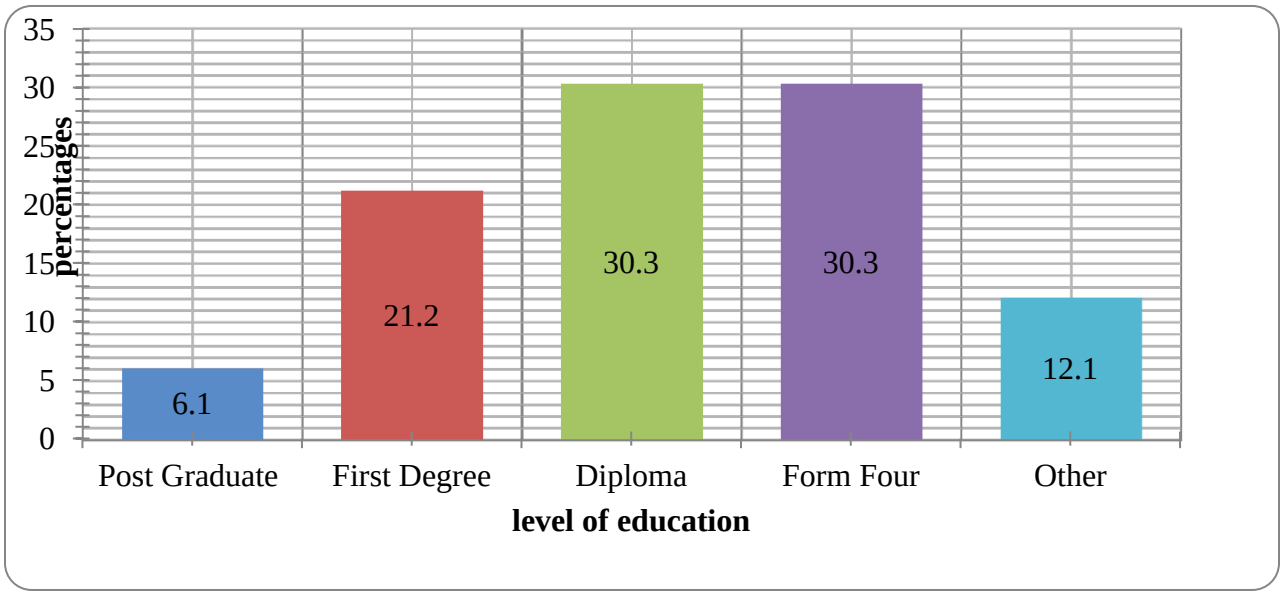


**Figure 4: Level of Education of Respondents**

From those findings, the majority of respondents 10 (30.3%), in the decision making positions in the PSV industry have a diploma while another 10 (30.3%) have form four level of education. 7 ( 21.2%) have first degree while 4 (12.1%) have other unqualified education while only 2 ( 6.1%) have post graduate level of education.

There is a probability that the PSV industry does not support higher education training as the numbers of respondents having graduate and post graduate level of education are lower than those of respondents having Diploma and form four level of education.

### 4.2.4 Experience of Respondents in the Industry

The need to study the level of work experience in the PSV industry was to establish whether the respondent had worked in the industry long enough to be able to understand the impact of the systems or aspects being interrogated and provide the relevant information sought by the study. The results are as illustrated in figure 5

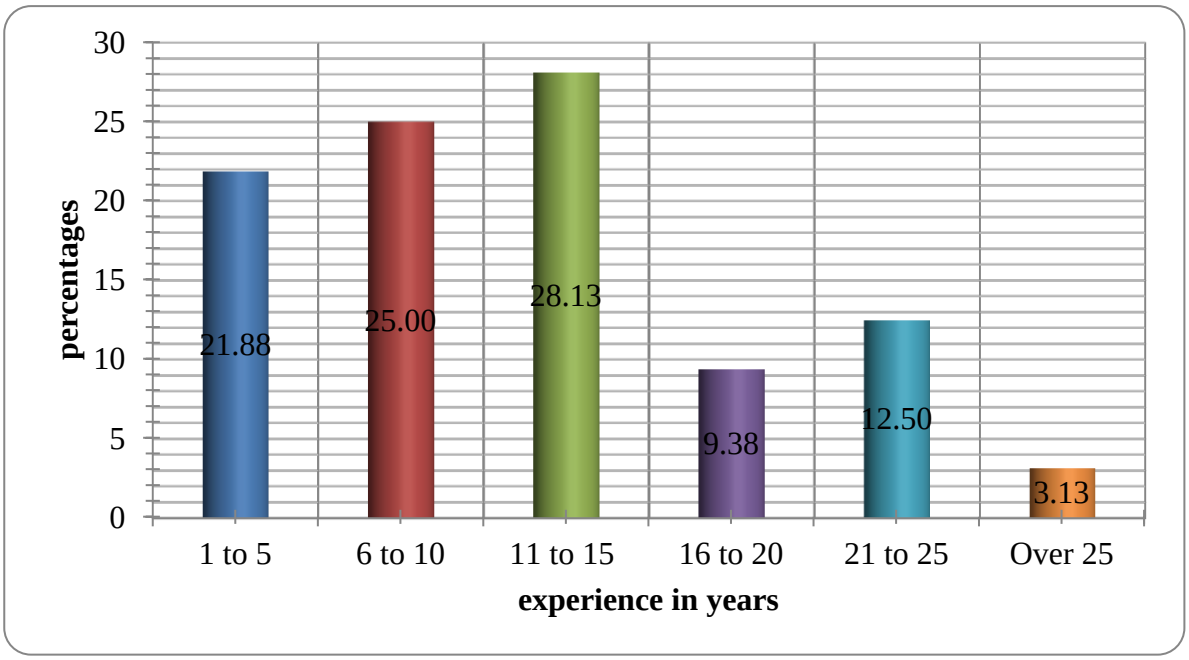


**Figure 5: Experience of Respondents in the Industry**

Most of the respondents 9 (28.13%) had the highest experience of 11-15 years in the PSV industry while 8 (25.0%) were in the range 6-10 years' experience and 7 (21.88%) had between 1-5 years then 4 (12.50%) were in range of 21-25 years, while 3(9.38%) had 16-20 years while only 1 (3.13%) of the respondents had more than 25 years of experience in the PSV industry. (Reagan's Argote & Books, 2005) noted that individuals' experience, organizational experience and that experience gained as a team, provide a distinct contribution to performance as it is conversant with the environment the organization is working.

This study shows that most of the respondents have had ample experience in the industry and have the exposure to the relevant information that the study sought in their firms relating to the PSV industry. In this study found that the experience of the respondents is relevant

### 4.2.5 Position Held by Respondent in the Firm

The study also sought to establish the position of each respondent in the management of the firms constituting the study population. The findings are as illustrated in Figure 6

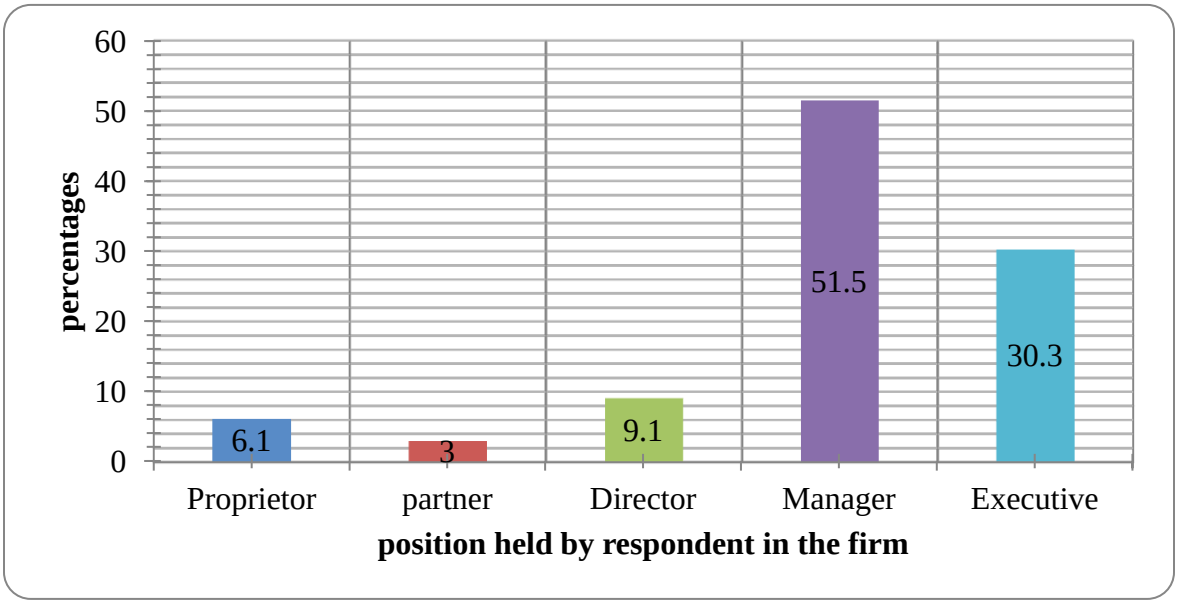


**Figure 6: Position Held by Respondent in the Firm**

From the above findings, the highest number of respondents being 17 (51.5 %) was managers in the firm, while 10 (30.3%) were only executives (e.g. supervisors) in the management. There were only 3 (9.1%) representing company directors, while 2 (6.1%) were proprietors and 1 (3%) were business partners.

### 4.2.6 The Registration Status of the Respondent Firms

The study sought to establish the legal status of the respondent firms as to whether the firms are either registered as a group SACCO or a Private Company. Findings are reported as in Figure 7

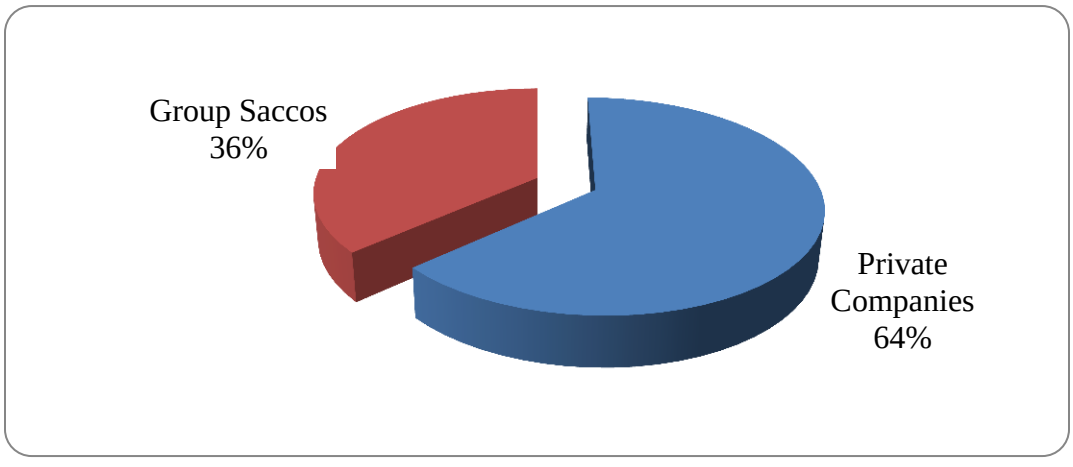

**Figure 7: The Registration Status of the Respondent Firms**

From the study, it is evident that 63.6% of the firms operating Night Time Long Distance Passenger Services in Kenya are private companies while only 36.4% are registered as group Saccos. The study also established that both the respondent Saccos and companies have a total fleet capacity of 1995 vehicles in the PSV industry. The Private companies command a greater market share of 1181 units (59.2%) while the respondent Saccos own 814 units (40.8%) of the respondent's fleet capacity in the PSV offering Night Time Long Distance Passenger Services.

### 4.3 Influence of Centralized Operations Control

The study sought to establish the influence of Centralized Operations Control on the performance of the PSV offering Night Time Long Distance Passenger Services in Kenya. First it sought to determine whether the use of Centralized Operations Control in the PSV industry influences the industry performance, all the 33 (100 %) respondents were in agreement that the use of Centralized Operations Control influences performance of the industry.

#### 4.3.1 Opinion on Extent of Influence of Centralized Operations Control

The study further sought to determine the level of influence of Centralized Operations Control on the performance on PSV industry in regard to reduction of transaction costs, route planning and management, integrated data collection and analysis, pooling of Professional staff and its influence on effective and efficient communication in the PSV industry. The findings are indicated in figure 8

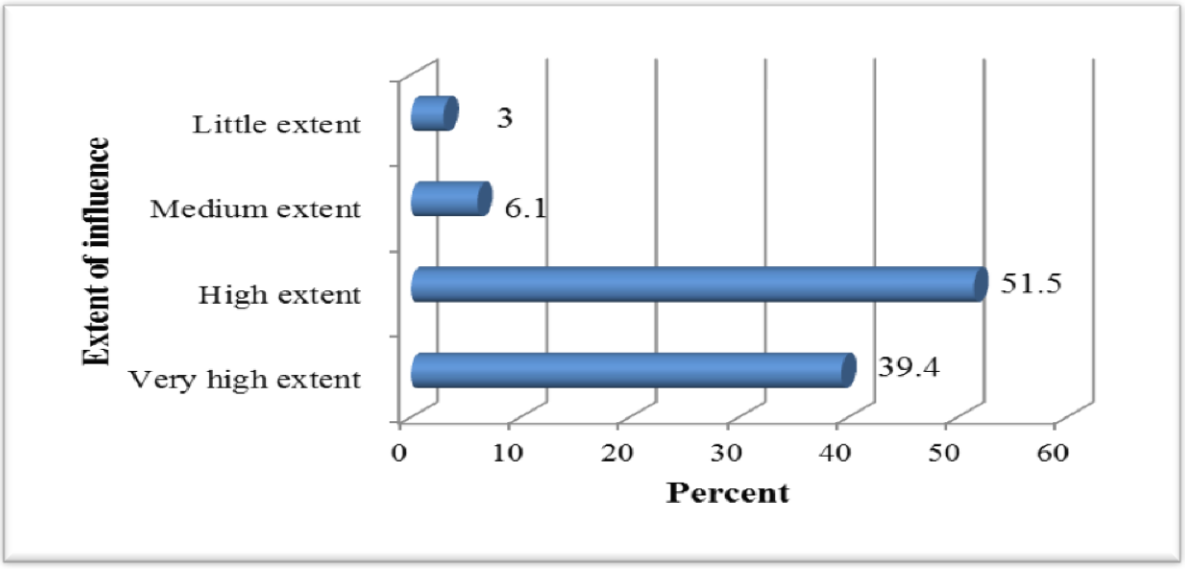


**Figure 8: Extent of influence of Centralized Operations Control**

From the analysis of the results as from figure 8, a total of 13 (39.4%) of the respondents indicated that Centralized Operations Control influences the Psv industry performance to a very

high extent, and another 17 (51.5%) indicated it influenced to a high extend, 2 (6.1%) indicated that it influences only to a medium extend while 1(3.0%.) found it to be of little extend.

### 4.3.2 Extent of agreement on Influence of Centralized Operations Control

The study using a Likert scale where 1- Strongly agree, 2- agree, 3- undecided, 4- disagree, 5- strongly disagree , sought to evaluate the influence of Centralized Operations Control on the specific aspects of the PSV industry performance by using leading statements. The findings are listed here in Table 2

**Table 2: Extent of Agreement on Influence of Centralized Operations Control**

| Our use of Centralized Operations Control | Mean | Std Deviation |
|---|---|---|
| Influences the reduction of Transaction Costs. | 4.220 | 0.011 |
| Influences flexible Route Planning and Management | 3.830 | 0.637 |
| Influences quicker and integrated data collection and analysis | 4.180 | 0.626 |
| Influences Pooling of professional staff | 4.520 | 0.858 |
| Influences Effective and efficient communication | 4.325 | 0.653 |

According to the findings, the respondents strongly agreed as shown by a mean of 4.520 and a standard deviation of 0.858 that use of centralized operations control influences pooling of professional staff. Additionally, respondents agreed as shown by a mean of 4.325 and standard deviation of 0.653 that use of centralized operations control influences effective and efficient communication. Further, the respondents agreed as shown by a mean of 4.220 and a standard deviation of 0.011 that use of centralized operations control influences the reduction of transaction costs. The respondents also agreed as shown by a mean of 4.180 and a standard deviation of 0.626 that use of centralized operations control influences quicker and intergrated data collection and analysis. In addition, the respondents agreed as shown by a mean of 3.830 and a standard deviation of 0.637 that use of centralized operations control influences flexible route planning and management.

### 4.4 Performance of PSV Offering Long Distance Night Time Passenger Service In Kenya.

The dependent objective of the study sought to find out if the Use of Fleet management Systems has influenced the Performance of this Industry, using specific key performance indicators namely; Increased road safety, asset growth, customer satisfaction, return on investment and reduction of insurance claims. The results were as shown by figure 9.

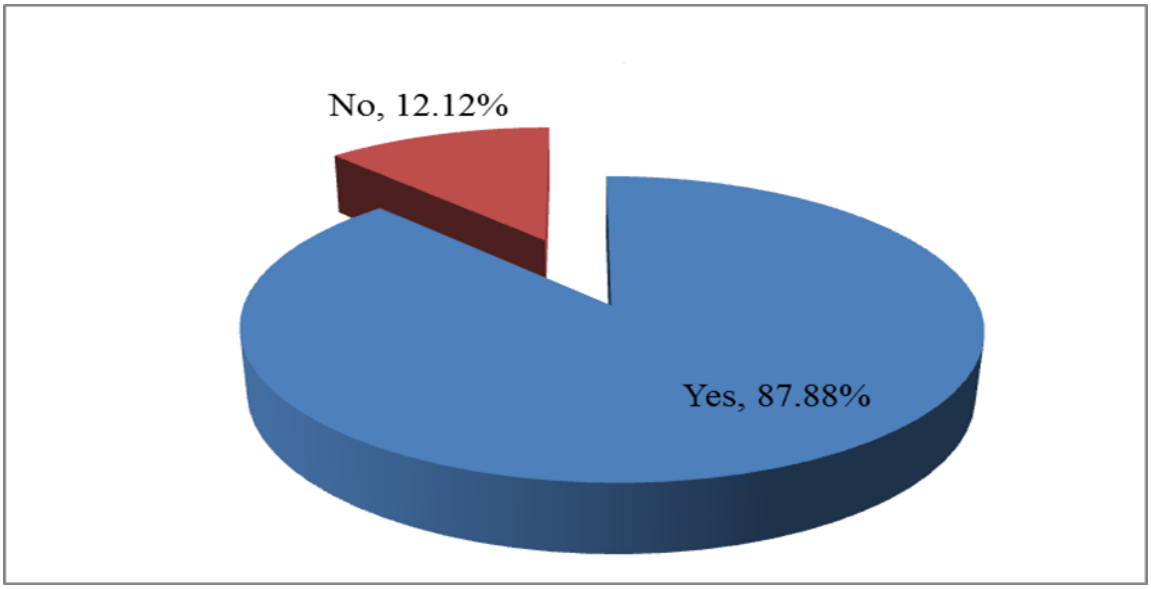


**Figure 9: Opinion If PSV Industry Performance has been influences by Use of FMS**

According to the findings, 29 (87.88% )of the respondents agreed that using those indicators,use of FM systems influence the performance of PSV offering long distance night time passenger services in Kenya but 4 (12.12%) were not in agreement.

### 4.4.2 Extent of Agreement on Influence of FMS on Performance of the PSV Industry

The study sought to determine the extent into which use of FMS influenced performance of the PSV Offering Long Distance Night Time Passenger Services in Kenya, in the four years,the statements were based on certain key indicators. The results were as shown in table 3

**Table 3: Extend of Agreement on Influence of FMS on performance of the PSV Industry**

| Statement | Mean | Std Deviation |
|---|---|---|
| Our use of FM Systems has influenced Increased Road Safety | 3.800 | 0.603 |
| Our use of FM Systems has influenced our increase in Asset growth | 4.080 | 0.339 |
| Our use of FM Systems has influenced Increased Customer Satisfaction | 3.780 | 0.416 |
| Our use of FM Systems has influenced our Return on Investment | 4.270 | 0.489 |
| Our use of FM Systems has influenced Reduction of Insurance claims. | 4.260 | 0.525 |

From the findings, the respondents agreed within a mean of 4.270 and standard deviation of 0.489 that use of FM Systems has influenced return on investment. The respondents further agreed within a mean of 4.260 and standard deviation 0.525 that use of FM Systems has influenced Reduction of Insurance claims. Also, the respondents agreed within a mean of 4.080 and 0.339 that use of FM Systems has influenced their increase in Asset growth. In addition, the respondents agreed with a mean of 3.800 and standard deviation of 0.603 that use of FM Systems has influenced increase road safety. The respondents also agreed with a mean of 3.780 and standard deviations 0.416 that use of FM Systems has influenced Increased Customer Satisfaction.

### 4.4.3 Indicators used in the Industry to Measure Performance

The respondents were asked to indicate which other performance indicators their institutions use to measure performance in the PSV industry. The results were as shown by table 4

**Table 4: Indicators Used To Measure Performance In The PSV Industry**

| Indicators | Yes | No |
|---|---|---|
| Asset growth | 60.60% | 39.40% |
| Profitability | 87.87% | 12.13% |
| Customer base | 96.97% | 3.03% |
| Number of employees | 51.51% | 48.48% |
| Sales turn over | 78.79% | 21.21% |
| Return on Investment | 57.58% | 42.42% |
| Customer satisfaction | 75.78% | 24.28% |
| Insurances Claims (in Kshs.) | 54.54% | 45.45% |
| Accidents per Vehicle per annum | 36.36% | 63.64% |
| Accident Per Million Miles (APMM) | 15.15% | 84.85% |

According to the findings,96.97% of the respondents indicated that they were using customer base as a performance measure but 3.03% were on contrary, while 87.87% were using

profitability but 12.13% were on contrary. In addition, 78.79% indicated that they were using sales turn over as a measure, but 21.21% indicated otherwise. Customer satisfaction was used by 75.78% of respondents and 60.60% of them indicated that they were using asset growth, while Return on Investment was used by 57.58% of the respondents and insurances Claims (in Kshs.) was used by 54.54% of them.

Further, a total of 51.51% of the respondents indicated that they were using 'number of employees' as a measure, with 36.36% of the respondents having used 'accident per vehicle per annum' (APVPA) and 15.15% used accident per million miles (APMM). From the findings, the study depicts that customer base was the most used indicator in the PSV industry, followed by profitability, sales turn over, customer satisfaction, asset growth, return on investments, insurances claims (in Kshs.), number of employees, accidents per vehicle per annum and finally accident per million miles in that

### 4.5. Discussion of Study Results

Further, the findings show that there is a significant positive relationship between Centralized Operations Control and the performance of PSV under study. as shown by a coefficient of 0.477 (p-value = 0.000). This infers that use of Centralized Operations control contributes positively to performance of PSV offering Long Distance Night Time Passenger Services in Kenya.

## 5.0 SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Introduction

This chapter presents the summary of the findings, discussion of the findings, conclusions, recommendations and suggestion for further studies. The conclusions and recommendations drawn were focused on addressing the purpose of the study which was to investigate influence of centralized operations control on the Performance of PSV industry in Kenya.

### 5.2 Summary of Major Findings

#### 5.2.1 Influence of Centralized Operations Control

The study found out that use of Centralized Operations Control influences performance of the PSV industry as it influences in pooling of professional staff, effective and efficient fleet communication, the reduction of transaction costs, quicker and integrated data collection and analysis, it was also established that it also influences flexible route planning and management.

### 5.3 Conclusions

The study concludes that there is a significant positive relationship between Centralized Operations Control on the performance of the that Industry as it influences performance of the industry, in pooling of professional staff and encourages effective and efficient fleet communication, reduction of transaction costs, enhances quicker and integrated data collection and analysis and also flexible route planning and management.

### 5.4 Recommendations

The study recommends all the companies operating public service vehicles should have centralized operations to reduce transaction cost. This will facilitate in pooling of professional staff who in turn improve the services offered.

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