The Impact of PUTCO Driver Refresher Training on Reduction of Bus Accidents

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Abstract

In South Africa in 2009, in accordance to the Road Traffic report (2009: 37), buses and taxis accounted for 1840 road fatalities. Therefore the role played by bus operators in reducing bus accidents needs to be practical and visible. PUTCO LTD has been in the media domain following a number of bus accidents occurred on its operational areas. PUTCO management has introduced driver Refresher Training with the intention of changing driver attitude and reduce bus accidents. The objective of this study was to investigate the PUTCO Refresher Training and establish whether or not it has contributed towards reduction of bus accidents.

The methods used to collect data include: semi-structured interviews, focus group interviews, and documentary record check and analysis. The data collected indicate that the refresher training has yielded no positive results in terms of reducing bus accidents and improving safe driving behaviour of PUTCO drivers. However, there are mediating factors

These mediating factors may improve the value of the Refresher Training if addressed and corrected, hence Refresher Training program is a good strategy and can be effective to reduce bus accidents provided all mediating factors are properly addressed.

Keywords: Driver Refresher Training; Driver Education; Driver Training Evolution;
Global Perspective; Accidents Reduction Strategy

INTRODUCTION

In accordance with (Pendakur, 2002:1) every year more than 1.17 million people die in road crashes around the world. Pendakur further argues that majority of these deaths, about 70 percent occur in developing countries. According to Ker, Robert, Collier, Beyer and Frost (2008: 9), each

year over a million people are killed and some ten million people are permanently disabled in road traffic crashes. Similarly (Omar, 2001:3) provides a statistic that road accidents in South Africa claim nearly 10 000 lives per year and a further 36 000 people are seriously injured on roads annually. According to Omar (2001: 3) many people who suffer serious injury are never able to pick up their lives as it was before the accident, because they become permanently disabled. To remedy this hike in road accidents (Christie, 2001:8) supports an increased focus on driver refresher training. Although driver refresher training is recommended (Ker, *e t al,* 2008: 1) argues that the effectiveness of post-licence driver education has yet to be determined. According to the Road Traffic report (2009: 37), in South Africa buses and taxis accounted for 1840 road fatalities in 2009. Therefore the role played by bus operators in reducing bus accidents needs to be practical and visible. It has been reported that human errors have played a significant role in almost all fatal accidents involve buses. In this regard, adequate and comprehensive driver training cannot be over emphasized. However, the quality of any driver training introduced in an endeavour to reduce road accidents needs to be investigated to check if indeed it achieves its objectives. This study is therefore aimed at investigating PUTCO Driver Refresher Training and its impact towards reduction of buses accidents.

PROBLEM STATEMENT

PUTCO accident Registers indicate that the numbers of accidents in which PUTCO buses were involved was 274 average per month between 2008 and 2010 per month. Of this number, 38% (104) are rating 1 (one) accident (accidents for which PUTCO drivers are to blame). On the other side, the numbers of driving related public complaints received through drive report call centre were 227 per average in 2010. Similarly (Williams, 2008:1) argues that road traffic accidents are known to be a major course of death and disability throughout the developing world, but is the problem is particularly acute in sub-Saharan Africa. According to Road Safety (2001: 2), road travel presents serious risk. In other countries like the European Union the statistics are similar in that over 40000 people are killed and 1.7 million injured on the roads every year. Therefore the cost to society has been estimated at 160 Euros annually. This corresponds to 2% of European Union's economic output. The above information is an indication of how much transport companies spend on accident cost every year. PUTCO LTD has already spent an enormous amount of money in third party claims and vehicle repairs following a number of bus related

accidents. According to PUTCO Financial report (2008: 12), for the year 2007/2008 financial period PUTCO spent R5, 2 million in accident repairs. Majority of these accidents can be attributed to driver behaviour despite the introduction of Driver Refresher Training which was basically aimed to reduce bus accidents and correct driver attitude.

AIM OF THE STUDY

Therefore theaim of this study is:

- To investigate whether the Refresher Training of PUTCO LTD has helped to reduce bus accidents, and
- Suggest some improvements to the training program should the study reveal any deficiencies.

THE OBJECTIVES OF THE STUDY

The objectives of this study are:

- To undertake a literature search to ascertain whether or not Driver Training is a good strategy for reducing road accidents.
- To undertake a case study in PUTCO LTD to investigate whether or not the Driver Refresher Training has contributed towards reducing Bus Accidents
- To establish how PUTCO Operations management and drivers perceive the Refresher Training, and
- Advise PUTCO management to improve the training program depending on the results of the investigation

LITERATURE REVIEW

DEFINITION AND EVOLUTION OF DRIVER TRAINING

Driver training has different names and meaning from various authors. “While it would readily be possible to distinguish training (which is concerned with skill acquisition) from education (which is concerned with knowledge acquisition) in the driving field, there is little evidence that people note the difference” (McKenna, 2010: 6). Gandolfi (2009:4) indicates that the term driver

education can be used to represent different things in different contexts and locations. Gandolfi (2009:4) also points out that in the US and Canada, driver training usually describes programs for learner drivers that consist of in-car practical training and classroom theory. In the UK it tends to be used more in the context of supplementary learning in addition to skills training, and can be applied to learners, new drivers and experienced motorists alike. Gandolfi (2009:4) finally indicates that in the broader context driver training extends beyond driving skills to attitudinal and behavioural elements and the development of self-evaluation strategies. Therefore this literature review has captured three popular names of driver training being, driver training, driver education, and road safety education.

Driver training and Driver Education.

Stephens and Ukpere (2011: 1) define driver training/education as a programme of organised learning and practice made to provide the knowledge, attitude and skills needed to drive safely, ensuring that advanced knowledge and skill needed for safe driving performance under peculiar circumstances are provided. Engstrom *et al*, (2003: 84) thus indicate that driver education is a broader term, including driver training, but also including knowledge about road laws, general road safety concepts, attitudinal and behavioural characteristics and awareness etc.

Road safety education

According Cox (2009: 5) Road Safety Education is aimed at minimising road trauma among young people by equipping them with knowledge to make informed decisions and develop positive attitudes, which are demonstrated in safe road user behaviour. Cox (2009: 2) further indicates that Road safety education focuses on all elements of road users, including young people as drivers, pedestrians, passengers and cyclists. Cox (2009: 5) thus argues that research and evaluation of driver education programs has directed educators away from practical skills-based training and toward values and attitude education. Cox (2009: 5) therefore suggests that school based pre-driver education should not incorporate practical driver training, but should encourage learner drivers to acquire as much practical on-road driving experience as possible.

EVOLUTION OF DRIVER TRAINING

According to Williams, Preusser and Lendingham (2009: ii), the first known driver education programs were developed between 1910 and 1920, but it was not until the 1930s that formal courses were actually offered. Preusser and Lendingham (2009: ii) also indicate that the early

growth and popularity of driver education were fuelled by studies reporting it to be effective in reducing crashes."Later studies that took these differences into account did not yield positive findings. This led to a period of uncertainty about driver education effects" (Preusser and Lendingham, 2009: ii). "The first National Conference on High School Driver Education was held in 1949 in the United States" (Engstrom, Gregersen, Hernetkoski, Keskinen and Nyberg, 2003: 27). "One of the major recommendations from this conference is still followed today in many driver education programmes" (Engstrom *et al*, 2003: 27). "The recommendation was that a minimum novice driver education course should consist of 30 hours of classroom instruction and 6 hours of behind-the-wheel instruction" (Engstrom *et al* (2003: 27).

GLOBAL PERSPECTIVES OF DRIVER TRAINING AND ROAD SAFETY EDUCATION

According to Wikipedia (2012:1), several government agencies, nonprofit organizations, and private schools have launched specialty courses that improved the public's driving skills. "In the United States a few of the familiar courses in defensive driving included Alive at 25, DDC or Defensive Driving Course, Coaching the Mature Driver, Attitudinal Dynamics of Driving, Professional Truck Driving, and DDC for Instructors. In relation to this, the government has launched active Air Bag and seat Belt safety campaigns that encourage High Visibility Enforcement" (Wikipedia, 2012: 1). "In addition to improving one's own driving skills, many U.S. states provided an incentive to complete an approved defensive driving course by offering mandated insurance discounts or a way to mask a traffic ticket from one's driving record. In some instances these courses were referred to as traffic school or a defensive driving school. States with the biggest incentives included Arizona, California, Florida, Nevada, New Jersey, and New York. A number of private providers offered a variety of courses" (Wikipedia, 2012: 2).

Groeger and Bandy (2004: 9) indicate that most European countries require drivers to have gained most, if not all, of their driving experience with people who train drivers on a professional basis. "Great Britain is unusual, but not unique, in allowing drivers to have no professional driver training. Instead, the onus on prospective full licence holders is to be able to demonstrate both the knowledge and skill sufficient to pass theoretical and practical driving tests. How they prepared themselves for such tests is a matter for the candidates themselves (Groeger and Bandy, 2004: 9). Groeger and Brandy (2004) further indicate that despite the approach to driver training, Great Britain, by whatever criteria chosen, has been shown, almost invariably, to be among the safest

countries in which to drive, even among newly qualified drivers. "Driver training in Denmark could only be carried out at official driving schools, i.e. accompanied practice was not permitted. The trainee was compelled to attend at least 26 lectures of theory and 20 sessions of practice" (SUPREME, 2007: 58). "After the introduction of a new training programme in driving schools in 1986, a reduction in accident risk of 7% was achieved during the first year of solo driving. Although this effect seemed to have largely disappeared after the first year of driving, the first year effect appeared to have been sustained over successive generations of novice drivers" (SUPREME, 2007:58). According to SUPREME (2007:58) the new driver training programme in Denmark was based on a very detailed curriculum which listed all the theoretical and practical requirements for training. Instructors were expected to strictly follow this curriculum. The training emphasised the importance of defensive driving and hazard perception. In line with directive 2003/59/EC, the Road Safety Authority (2003: 1) proposed regulations regarding the implementation of a Certificate of Professional Competence for all professional passenger vehicle and truck drivers in the member states of the European Union. According to Road Safety Authority (2003) this involved a compulsory qualification and compulsory periodic retraining of professional drivers every 5 years. Road Safety Authority (2003) also indicates that the directive also required that the member states make arrangements to approve training programs and certify trainers who delivered those programmes.

AFFIRMATIVE VIEWS ABOUT DRIVER TRAINING AS A STRATEGY FOR REDUCTION OF ROAD ACCIDENTS

"Results indicate that extended learning can reduce accidents substantially if it is well structured and highly controlled," (Journal of Safety Research, 2003: 85). In terms of South African Road safety strategy (2006: 37) all PrDP holders should be required to attend approved advanced driver training courses, which in the main teach defensive driving, and have proved to be effective in reducing road crashes in other parts of the world, and certain parts of South Africa. "With road user error contributing to the vast majority of road crashes, the development of safe drivers, skilled in defensive driving techniques, should be the primary objective of any road safety program" (Pendakur, 2002:8). Pendakur (2008) further indicates that driving examiners in developing countries are rarely given special training, driving tests and adequate ability to drive safely in traffic on public roads. The view expressed above supports driver training as a good

strategy for reduction of road accidents. This view is supported by the following research findings that also subscribe to driver training as a remedy for reducing road accidents as follows: Mayhew and Simpson (2002: 1) point out that education/training programs might prove to be effective in reducing collisions if they are more empirically based, addressing critical age and experience related factors. At the same time, more research into the behaviors and crash experience of novice drivers is needed to refine the understanding of the problem. Furthermore, Mayhew and Simpson (2002: 1) indicate that studies conducted in the United Kingdom and United states have shown that in about 95 percent of recorded accidents, driver error was a contributory factor in some form or other. It is therefore vital that human factor is addressed in tackling the problems of road safety. "Fundamental to this is an efficient testing and training regime" (Anonymous, 2011: Http//www.adb.org). The Arrive Alive Road Safety Website urges all drivers to consider advanced driver training to improve their safety on the road. It thus indicates that there are many benefits from such training and these benefits will add up to a much more enjoyable drive (Arrive Alive, 2011: 3).

THE IMPORTANCE OF DRIVER TRAINING AS A SAFETY MEASURE

"Advanced driver training is about improving our perception of what is happening on the road. Better perception increases awareness and should therefore improve our judgments; decisions and ability to cope and reduce accident risk" Anonymous, (2011: 1). According to American Automobile Association (2001: 2) driver and Traffic Safety Education is important in Nigeria in the following ways:

- Driver and Traffic Education educates the youth about themselves in respect of their capabilities and limitations in the use of motor vehicles, the automobiles, their capacities as well as their limitations and the highways on which they operate. Their knowledge of these three traffic elements can make them become better and considerate road users. Better and considerate driving is apt to reduce the number of disasters on the Nigerian highways.

- Driver and Traffic Safety Education will equip the youth for and open doors to new careers or vocations they would never have conceived of without such education.

This view is supported by Dobie and Clisson (2005: 3) who indicates that training has always been an important element of motor carrier operations from obtaining the initial Commercial

Driver's License to advanced training for hazmat licensing and routine updating on recordkeeping and vehicle safety requirements. Therefore road safety education should be given much more priority in developing and transition countries. Importantly, research has demonstrated that it can be highly effective when some principles of good practice are followed. However, to produce best results, the program should be supported by other road safety measures like driver training, providing safe crossing places as well as enforcing safe driver behaviour (Anonymous, 2009: 15).

Nadavsnir (2010: 1) indicates that a good driver's education does not merely teach about driving but also serves as a guideline a driver must follow on actual fields. Finally Nadavsnir (2010) outlines that traffic rules such as proper speed and its limits and territories, distance, and the dos and the don'ts when it comes to driving which should be effectively taught upon obtaining a license. According to Nadavsnir (2010) effective driving education is one way to becoming well-equipped with the changing environment and should be taken seriously, not only for one's safety but also for society and other road users. Van Vuuren (2010: 1) indicates that the mere fact that a driver has a legal driver license does not mean that he or she is a safe driver. Van Vuuren (2010: 1) further states that a driver may be a good driver, but not necessarily a safe driver. Van Vuuren (2010: 1) thus points out that there is a need to teach drivers to become, not only good road users but also safe road users. "Road safety training helps to minimise health and safety risks to haulage and transport workers by making them better informed and qualified and raising their awareness levels" (On the Move, 2011: 3). "Moreover, traffic accidents generate costs for businesses in sectors, thereby impacting on their competitiveness. "Road safety education for people involved in these fields is thus vital and computer-based training can support this effectively" (On the Move, 2011: 3). "The purpose of driver training is to provide persons with sufficient competence to drive safely, considerately and at the same time efficiently" (Anonymous, 2011: 2). "Driver education must be seen as a major component of civic education, in which road users are asked to be personally responsible for the safety of themselves and others" (Boulet, 2007: 3).

REFRESHER TRAINING AS A STRATEGY FOR REDUCING ACCIDENTS

According to Peters, Nyberg and Strand (2010: 1) functional abilities used for driving decline as persons get old and this increases potential risk. Peters *et al* (2010) further indicate that experience and careful behaviour can to some extent compensate for degraded abilities although

functional degradation can develop slowly and in disguise. Furthermore, Peters *et al* (2010) indicate that changes in traffic and vehicle design could increase the demands on the aging driver. Thus, there is a risk for both over and under confidence in driving performance. Peters et al (2010: 1) thus recommend Refresher courses as a means to improved safe mobility.

The Royal Society for the Prevention of Accidents (2005: 2) indicates that the only drivers who are required to take any further training after having passed their driving test are ones who have been ordered to do so by the Courts, or ones whose employer requires it as part of the terms and conditions of employment. Yono (2003: 15) suggests that there should be a combination of policies and procedures requiring refresher drivers training and effective training program aimed at reducing deaths caused by vehicle crashes. As part of the National Road Safety campaign, the South African Road to Safety Strategy 2001-2005 (2001: 1) requires bus operators to appoint personnel with appropriate qualifications, training and experience and who had a satisfactory knowledge of the job to manage training. The code also requires the operators to provide refresher courses and continuous training for its entire staff

WHY DRIVER TRAINING HAS FAILED TO REDUCE ROAD ACCIDENTS

According Robinson (2001: 30) traditionally driver education has been taught solely at the entry level of driving and licensure. Robinson (2001: 30) therefore argues that the knowledge, skills, and attitudes needed for a safe driver to emerge, are impossible to teach at the entry level and can only be developed after the student has been exposed to various scenarios. Robinson (2001: 30) thus indicates that there is a need to renovate the way driver education is taught. American Research Institute (2008: 24) revealed that although most training programs employ similar instructional methods, there is not general agreement on the subject matter. The results of the study conducted by the American Research Institute (2008) also indicates that while most programs cover very similar topics, it is important to note that there is no national standard for commercial motor vehicle safety training curriculum. Finally, the American Research Institute (2008: 25) indicates that while many of the various training entities within the industry have come to an informal consensus on the subject of commercial driver training topics, it has been nearly 20 years since a formal curriculum design for commercial drivers was systematically developed. Christie (2001: 5) indicates that promoting driver training as a means of improving driving skills and knowledge assumes that there are deficiencies in the skills or knowledge of drivers, and that these can be improved via training. It also assumes that these skill deficiencies

increase the risk of crash involvement. These assumptions are largely false and based on beliefs not supported by research evidence. Christie (2001) pointed out that it may be unreasonable to expect driver training to deliver crash reductions. Christie thus argues that improving knowledge and skill does not always lead to a change in behaviour among drivers. Furthermore, Christie point out that a driver trainer has little control over the post course behaviour of trainees, the motivation of trainees to apply what has been learned or the many other risk factors that may contribute to crash causation. "Drivers, particularly young drivers, can and do take risks that have little to do with how much skill and/or knowledge they have, but much to do with motivation and psychological factors" (Christie, 2001: 6) . According to Chiduo and Minja (2001: 239) most driver trainings are directed more at encouraging compliance with laws than conveying information about rules and procedures. These training programs provide drivers with skills, which are then rehearsed again and again in the traffic stream

RESEARCH METHODOLOGY

The methodology employed is qualitative from phenomenological perspective. According to Wikipedia, quantitative design is a method of enquiry employed in many different academic disciplines, traditionally in social science but also in the market research. Qualitative research aims to gather an in-depth understanding of a phenomenon. It is on the basis of this definition that the researcher has employed qualitative design from phenomenological point of view. Patton (2002:1) outlines the characteristic of qualitative design as follows:

Naturalistic enquiry which means studying real world situations as they unfold naturally, non-manipulative and openness to whatever emerges,Emerged flexibility in that openness to adopting enquiry as understanding deepens and or situations change. This also means that the researcher avoids getting locked into rigid design that eliminates responsiveness and pursue new paths of discovery as they emerge.Purposeful sampling. This means people, organizations, communities, cultures, events, critical incidents are selected because they have rich information and they offer useful manifestation of a phenomenon of interest.The research strategy used is case study and exploratory in nature. Hussey and Hussey (1997: 65) define case study as an extensive examination of a single instance of a phenomenon of interest and is an example of phenomenological methodology. This definition is supported by Saunders, Lewis and Thornhill (2003: 93) who quote Robson (2002: 178) to define case study as a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its

real life context using a multiple sources of evidence. Therefore this design took into consideration the background information provided by previous studies in this field of study as well as new data collected in order to develop a theory. According to Saunders *et al* (2003: 96) exploratory studies are valuable means of finding out what is happening, to find new insights, to ask question and to assess phenomena in a new light.

TARGET POPULATION

A population of five Operations managers was identified to take part in the investigation. This group was chosen on the basis of their expertise and experience in handling accident ratings and management of accident stats on daily basis. The decision for electing 5 Operations Managers is based purely on their expertise as supported by Saunders *et al* (2003: 97) who indicate that there are three principal ways of conducting exploratory research which include talking to experts in the subject. PUTCO LTD has only five Operations managers therefore because of the size of this group; the whole population was selected for sampling purpose. Furthermore, a focus group interview of 5 drivers was conducted to establish how drivers perceive the refresher training. Hussey and Hussey (1997: 155) indicate that focus groups are normally associated with a phenomenological methodology and they are used to gather data relating to feelings and opinions of a group of people who are involved in a common situation. In addition to the abovementioned source of data, the researcher investigated the following documents to extract secondary statistical data.

Accident registers of all Business units to compare monthly accidents trends on monthly and yearly basis per Business Unit for the period between July 2008 and June 2010. A total of 5 registers was investigated.

The researcher also drew 5 personnel file per Business Unit to investigate accident records of drivers who have already attended the refresher training. A total of 25 files was drawn and investigated.

Monthly driving related public complaints was obtained from Drive report call Centre to investigate driving related complaints that may lead to road accidents. The data collected covered the period between August 2010 and May 2011. The Call Centre started to operate in August 2010 thus the investigation covered the whole period.

These are sources of secondary data available in the company. Webster's online dictionary defines secondary data as data acquired from published sources as opposed to data acquired from

direct observation or measurements such as survey. This definition is in line with the web definition which defines secondary data as a data collected by someone other than the user.

The reason why the researcher has chosen the period from July 2008 to June 2010 for the purpose of this study is that during this period the Refresher Training program had been fully implemented. On the other hand, it was during this period when PUTCO was accused by media and Government of having many accidents. Statistical comparison of accidents was done on monthly and year on year basis taking in consideration seasonal change like summer time which normally accounts for more accidents because of rain. The Business Units in which this study was conducted are:

Greater Soweto; Comuta;Mamelodi;Tshwane and Mpumalanga Soshanguve

SAMPLING STRATEGY

Non-probability and judgmental sampling strategy was followed in the research. Wegner (1995:170) defines nonprobability sampling as any sampling method in which the observations are not selected randomly. As such the criteria other than randomness are the basis for selecting observation from the population. According to Hussey and Hussey (1997: 148) in a judgmental sampling, participants are selected by the researcher based on the strength of their experience of the phenomenon under investigation. It was therefore appropriate for the researcher to employ this sampling strategy in order to select the participants for this case study.

SAMPLING TECHNIQUES

Wikipedia outlines judgmental sampling techniques as follows:

Nonrandom sample which is selected based on the opinion of an expert

Results obtained from a judgmental sample are subject to some degree of bias due to the frame and population not being identical

However, Lund Research LTD (2010) indicates that nonprobability sampling can also be particularly useful in an exploratory research where the aim is to find out about something for practical reason, and that it is often used because the procedure to select units for inclusion in a sample are much easier, quicker and cheaper. Lund Research (2010) further states that nonprobability sampling represents a valuable group of sampling techniques that can be used in a research that follows a qualitative mix method and even quantitative research design. It is on the basis of the above statements and guidelines that this sampling strategy was selected.

RESEARCH INSTRUMENT

Three types of data were collected during the study. Semi-structured questionnaire was used to interview operations managers and conducting driver focus group interview. On the other hand, accident registers of PUTCO Business Units were checked to investigate the total number of accidents for the period under investigation. Of the total number of accidents per Business Unit, rating 1 accidents (accident for which PUTCO driver were blamed) were recorded on a separate line to ensure accurate reporting. PUTCO LTD has contracted to the company called Drive Report to receive daily public complaints about driving behavior of its drivers. The statistical data available from this source covers a period of ten months (from August 2010 to May 2011). This information was collected from Drive Report call Centre and recorded as indicated in chapter 4. Data from each source was recorded and analyzed as indicated below.

DATA ANALYSIS

Time series analysis was used to analyze data obtained from accident registers. This involved tables and graphs as indicated in chapter 4. The purpose thereof was to reflect accident trends for the period between July 2008 and June 2010 chosen for the study.

Time series analysis method was also used to analyze driving related public complaints received by the Drive Report Call Centre.

Time series analysis was used to analyze data obtained from personnel files of drivers selected from those who attended the Refresher Training. Specific data analyzed was Rating 1 accidents (accidents for which PUTCO driver are to blame)

Thematic analysis as advocated by Virginia Braun and Victoria Clarke (2006:3) was used to analyze data collected through semi-structured questionnaire.

LIMITATIONS

The limitations of this study are:

- The researcher was transferred from Pretoria to Johannesburg by his employer during the process of the study. This has reduced the researcher's ability to complete the study on time as much of his study time was spent on the road to and from work.

- The employer delayed to grant permission for the researcher to conduct the investigation on the company premises. This resulted in a delay to submit the final report.

- The literature review supplied very limited data about refresher training. Most of the data supplied by the literature represent driver training from beginner driver and general perspective.

- The literature represent general driver training from global perspective than national point of view.

ETHICAL CONSIDERATION

This study was aimed at investigating the PUTCO Driver Refresher Training which has already been running for more than three years. Therefore a care had to be taken to ensure that the results of the study do not negate a good contribution the training program has already made. On the other hand, the researcher was aware of negative consequences that might have arisen if the study was not properly conducted to protect the integrity of the company and employees selected to take part in the study. It has therefore been the intention of the researcher to observe the following ethical issues when conducting the study:

Objectivity was maintained during the collection and analysis of data. The researcher therefore made it a point to ensure that data collected was free from any personal influence in order to maintain the validity and reliability of the data. The element of privacy was maintained throughout the collection and analysis of data. The researcher avoided any inference that may have led to the discovery of the actual source of the statement or utterance made. The researcher avoided misrepresentation of facts during the analysis of data. Therefore data analysis was conducted in such a way that subjectivity was avoided. Data collected was kept safely and utilized for the purpose of reporting the findings of the study only.

RESULTS, DISCUSSION AND INTERPRETATION OF RESULTS

Five PUTCO operations managers were interviewed through semi-structured questionnaire. All the operations managers interviewed confirmed the existence of the refresher training. Each manager indicated his role in support of the training and ensures that drivers attend the training. It has also emerged during the interview that majority of PUTCO Business Units have training registers used to manage drivers' attendance of the refresher Training. With regard to the benefits of this training program in terms of reducing bus accidents, the five operations managers gave different views. Two of the five operations managers believe that the Refresher Training has

contributed nothing towards reduction of bus accidents while three managers indicated that indeed this program has helped to reduce bus accidents in their respective Business Units.

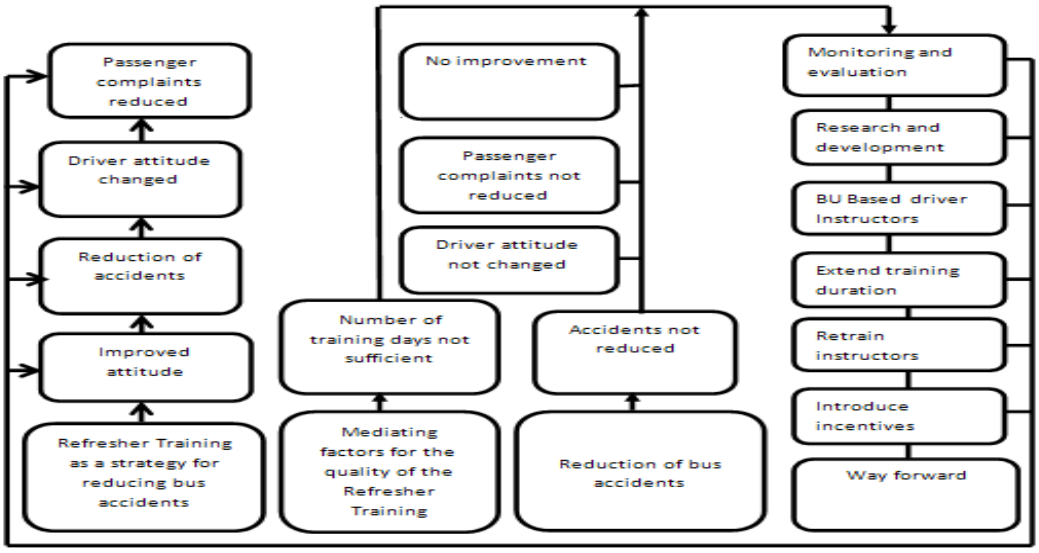
Table 4.2.1.1 below summarizes the themes detected from the semi-structured interviews.

SUMMARY OF THEMES FROM SEMI-STRUCTURED QUESTIONNAIRE

	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5
A	Aware of Refresher the Training	Aware of the Refresher Training	Aware of the Refresher Training	Aware of the Refresher Training	Aware of the Refresher Training
B	Arrange drivers to attend training	Ensure drivers attend training	Arrange drivers to attend training	Keeps training attendance register	Select drivers to attend training
C	Relies on the list supplied by Training department	Training register is available	Training register is available	Training register is available	Training register is available
D	Accidents have reduced and driver attitude improved	Partial reduction of accidents has been realised	No change from previous accident record	No change from previous accident record	There is reduction of Major accidents
E	Improved attitude and reduction of accident	85% reduction of accidents	No improvement	No improvement	Vast improvement in accident reduction
F	Accidents have reduced	Little reduction of accidents	No reduction	No reduction	Accidents have reduced
G	Driver attitude has changed	Driver attitude has changed slightly	Driver attitude has not changed	Driver attitude has not changed	Driver attitude has changed
H	Number of Complaints has reduced	Number of Complaints has not reduced	Number of Complaints has not reduced	Number of Complaints has not reduced	Number of Complaints has reduced
I	Reduction of accidents	Reduction of complaints	Nothing	Nothing	Driver attitude change
J	It is a good strategy	It is a good strategy	Difficult to say	It is a good strategy	It is a good strategy
K	Vast improvement	Vast improvement	Difficult to compare	Difficult to compare	Vast improvement
L	Inclusion of customer care	No recommendation	It must address different road	Training must be done on bus	Allocation of more practical driving time

			conditions	routes	
M	Introduce BU based instructors	Introduce incentive for good driving	Reduce driving time per shift	Increase practical training	Improve vehicle fitness
N	Refresher training is good	Refresher training is good	Refresher training needs improvement	Refresher training is good	Refresher training is good
O	Include attitude module in the programme	Research new tra ining methods	Introduce BU based instructors	Extend training duration	Retraining of instructors

FIGURE4.2.1.1: CONCEPTUAL FRAMEWORK FOR DRIVER REFRESHER TRAINING AND REDUCTION OF BUS ACCIDENTS: OPERATIONS MANAGERS' PERSPECTIVE



RESULTS OF THE SEMI STRUCTURED INTERVIEWS

This study was developed from grounded theoretical frame. Therefore the themes emerged from the semi-structured interviews were not based on a preconceived theoretical framework. The points raised by the five operations managers participated in the interviews were linked with the main research question as opposed to a theoretical framework. As such, the five operations managers interviewed raised a number of different views about the refresher training. However, a popular view raised was that the refresher training programme has improved driver attitude and reduced bus accidents. On the other hand, the participants suggested that the following items

should be included in the training module to strengthen the quality of the refresher training. The suggested items are:

- Customer care

  The participants indicated that while the refresher training is meant to reduce bus accidents, it should also emphasise on customer care

- Further research should be done to improve the refresher training

  The participants believe that the techniques applied by driver instructors to deliver the refresher training are outdated thus suggest that an intensive research be conducted in order to search for modern systems for delivering driver training.

- Extension of training period

  The participants suggested that the training period be extended from 5 day to a number of days that will give drivers sufficient time for practical training

- Retraining of driver instructors

  The participants suggest that driver instructors be trained to ensure that they too are familiar with new training methods available in the market.

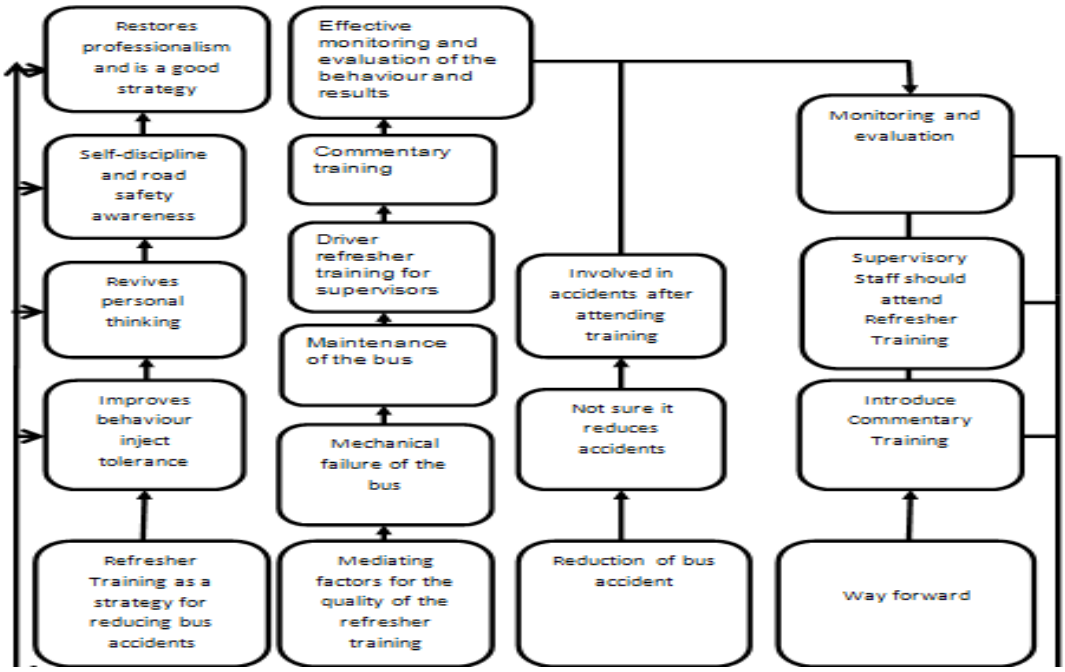
- Introduction of incentive scheme for accident free drivers.

  One of the interviewees suggested that there be an incentive scheme to encourage drivers to drive with care.

- Business Unit based driver instructors

  The participants argue that there is no follow up and evaluation of drivers' compliance after they have completed the refresher training. Therefore it is suggested that each Business Unit of PUTCO be allocated with a driver instructor to evaluate driver compliance on daily basis.

FIGURE 4.2.2.1: CONCEPTUAL FRAMEWORK FOR DRIVER REFRESHER TRAINING AND THE REDUCTION OF BUS ACCIDENTS: DRIVERS' PERSPECTIVE



RESULTS OF THE GROUP INTERVIEW

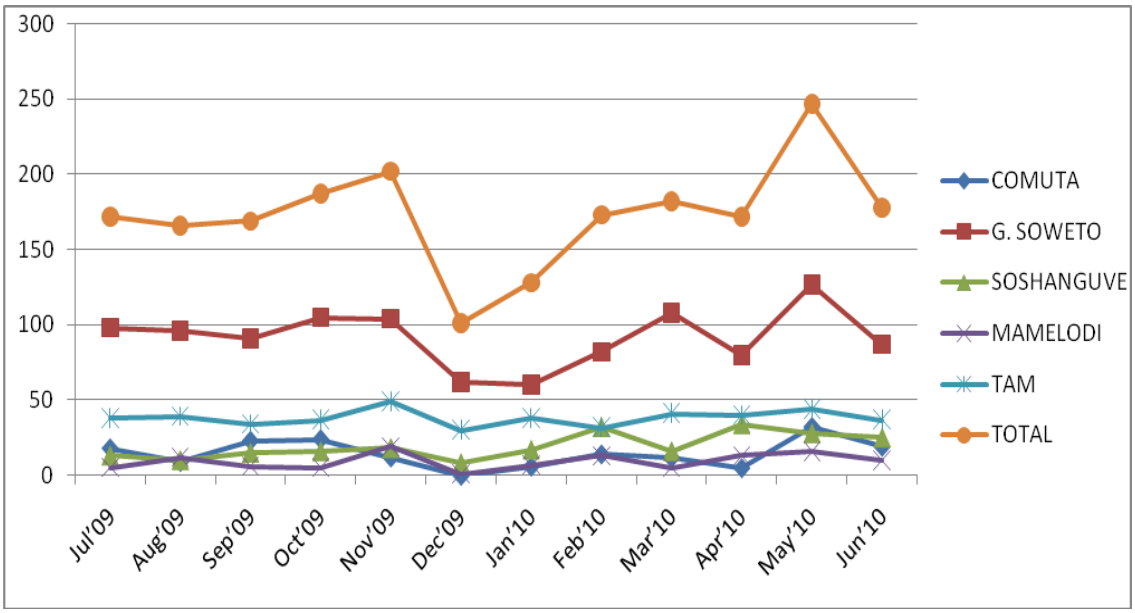
Both the coding and thematic mapping were based on the recommendation of Braun and Clarke (2006) on how to analyse qualitative data from inductive approach. According Braun and Clarke (2006: 87) the process of analysis starts when the analyst begins to notice patterns, meaning of the patterns and issues of potential interest in the data, and this may be done during data collection. Based on the data collected, the group of drivers interviewed highly support the refresher training based on an individual experience of how they benefited from this training. However the interviewees could not confirm whether or not the Refresher Training helps to reduce road traffic accidents. Two of the interviewees indicated that they got involved in road traffic accidents after they had attended the training. However, one interviewee attributes his accident to mechanical problem of the bus which cannot be linked to the training. On the side, the other driver attributes his accident to the fault of the third party involved. Finally the interviewees recommended that the refresher training should include commentary driving. The interviewees reckon that this will help drivers to memorise what they have learned. Furthermore the

interviewees recommend that PUTCO supervisors should also be arranged to attend this training for them to be able to monitor compliance of drivers.

TABLE4.2.3.2: RATING 0 ACCIDENTS PER BUSINESS UNIT FOR 2009/2010 FINANCIAL YEAR

	Jul' 09	Aug' 09	Sep' 09	Oct 09	Nov' 09	Dec 09	Jan' 10	Feb 10	Mar' 10	Apr 10	May 10	Jun' 10
COMUTA	18	9	23	24	12	0	6	14	12	5	32	19
G. SOWETO	98	96	91	105	104	62	60	82	108	80	127	87
SOSHANGUVE	13	10	15	16	18	8	17	32	16	34	28	25
MAMELODI	5	12	6	5	19	1	7	13	5	13	16	10
TAM	38	39	34	37	49	30	38	32	41	40	44	37
TOTAL	172	166	169	187	202	101	128	173	182	172	247	178

GRAPH: 4.2.3.2 RATING ZERO ACCIDENTS PER BUSINESS UNIT FOR 2009/ 2010FINANCIAL YEAR



RESULTS OF RATING ZERO FOR 2009/2010 FINANCIAL YEAR

Table 4.2.3.2 and Graph 4.2.3.2 indicate that in 2009/2010, total rating zero (0) accidents were 173 per month average. Of the 173, Greater Soweto accounted for an average of 92 accidents per month. Tshwane and Mpumalanga accounted for an average of 38 accidents per month followed by Soshanguve which accounted for an average of 15 accidents. Comuta and Mamelodi accounted for an average of 15 and 9 accident respectively.

TABLE 4.2.4.1: LIST OF DRIVER DISCIPLINARY FILES CHECKED

Driver number	Business unit	Date of training	No- of accidents after training
44415	Soshanguve	25.02.2008	1
48982	Soshanguve	27.11.2009	0
50000	Soshanguve	03.07.2009	0
48875	Soshanguve	13.03.2008	0
49244	Soshanguve	02.12.2009	1
29625	TAM	07.01.2008	2
48956	TAM	02.06.2008	0
48407	TAM	21.07.2008	0
29436	TAM	29.01.2010	0
49092	TAM	13.03.2009	1
48876	Mamelodi	03.12.2007	1
29534	Mamelodi	03.11.2008	0
29731	Mamelodi	19.06.2009	0
48950	Mamelodi	30.10.2009	2
49593	Mamelodi	13.03.2009	0
43879	Comuta	09.10.2009	1
300237	Comuta	27.03.2009	1
46920	Comuta	13.10.2008	1
750817	Comuta	22.05.2009	0
22995	Comuta	15.11.2008	1
44012	G Soweto	12.03.2010	0

41018	G Soweto	26.05.2008	0
48390	G Soweto	09.05.2008	0
48799	G Soweto	01.07.2008	1
24422	G Soweto	12.05.2008	0

RESULTS OF DISCIPLINARY FILE CHECKED

On the 25 files checked, 9 drivers were involved in one a rating (1) accident each after attending the Refresher Training. Furthermore, two drivers were involved in two rating (1) accidents each after attending the Refresher Training. Therefore of the 25 files checked, 11 drivers have involved in accidents after attending the Refresher Training. This indicates that 44% of the drivers investigated were involved in accidents after they had attended the refresher training.

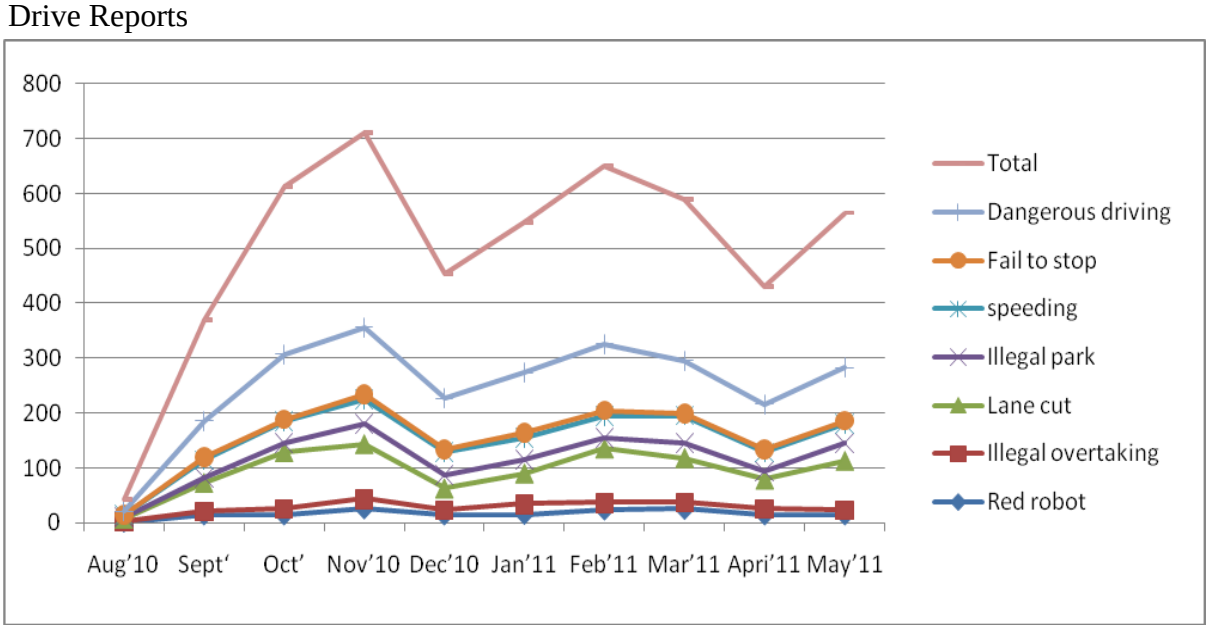
DRIVE REPORT DATA

Drive report data for the period between 1st August 2010 and 30 May 2011 was collected to establish statistical trend of driving related complaints received by the Drive report call centre. The following table reflects the number of calls received by the call Centre. This statistical trend represents all PUTCO business Units per month.

TABLE 4.2.5.1: NUMBER OF DRIVING RELATED INCIDENTS REPORTED PER MONTH

INCIDENT	Aug'10	Sept'10	Oct'10	Nov'10	Dec'10	Jan'11	Feb'11	Mar'11	Apri'11	May'11
Red robot	1	14	14	25	14	15	23	24	14	14
overtaking	2	7	12	19	10	19	14	14	12	10
Lane cut	5	52	103	99	39	56	98	80	53	89
Illegal park	1	9	15	37	23	24	19	26	14	32
speeding	5	32	41	45	43	40	40	51	35	35
Fail to stop	1	6	4	10	5	11	11	4	6	7
Dangerous driving	6	65	117	120	92	108	120	95	81	95
Total	**21**	**185**	**306**	**355**	**226**	**273**	**325**	**294**	**215**	**282**

GRAPH: 4.2.5.1 NUMBER OF DRIVING RELATED INCIDENTS REPORTED PER MONTH



RESULTS OF DRIVE REPORT INVESTIGATION

The graph indicates that for the period between August 2010 and May 2011, average drive reports per month were as per table 4.2.5.2 below:

TABLE 4.2.5.2: AVERAGE DRIVE REPORT PER MONTH

Red robot	16
Illegal overtaking	12
Lane cut	67
Illegal park	20
speeding	37
Fail to stop	7
Dangerous driving	90
Total	248

RESULTS

Table 4.2.5.2 indicates that on monthly basis PUTCO LTD has:

- 16 drivers driving through red robot
- 12 drivers overtaking illegally
- 67 drivers cutting lanes
- 20 drivers parking at unauthorised parking places
- 37 exceeding speed limit of areas where they drive
- 9 drivers failing to stop at stop streets
- 90 drivers driving dangerously

CONCLUSION AND RECOMMENDATION

CONCLUSIONS

The results of this study have provided no evidence to confirm the safety benefits of the refresher training. The statistical data collected indicate that the refresher training has yielded no positive results in terms of reducing bus accidents and improving safe driving behaviour of PUTCO drivers. However, the data also indicate that driver refresher training can influence the reduction of bus accidents provided a number of mitigating factors are considered.

RECOMMENDATIONS

The recommendations are as follows:

- Focus on the up keep and maintenance of the buses. Put in a system that monitors and checks the mechanical condition of the buses.
- Revise the training (extend the duration of the training, include driver commentary, test re-test model, etc.)
- Supervisors to attend the Refresher Training
- Put in place a monitoring and evaluation framework to assess the impact of the training on driver behaviour and results (use the Kirkpatrick model)
- Incentivise bus drivers if there are no accidents
- Future research. The impact of a monitoring and evaluation system on the reduction of bus accidents

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