THE RELATIONSHIP BETWEEN THE EMOTIONAL INTELLIGENCE DOMAINS AND DRIVER BEHAVIOUR IN ESKOM:

AN ADULT EDUCATION PERSPECTIVE

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By

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ACRONYMS

AB	: Attitude behaviour
CR	: Conditional response
CS	: Conditional stimulus
divPFC	: Dorsolateral PFC
EI	: Emotional intelligence
ET	: Education and training
ETD	: Education training and development
EQ	: Emotional quotient
IQ	: Intelligence quotient
NWR	: North western region
PFC	: Prefrontal cortex
SAQA	: South African Qualifications Authority
VIR	: Vehicle incident rate
vmPFC	: Ventromedial PFC

DECLARATION

I, **JOHANNES G.A du Preez**, solemnly declare that the thesis herby submitted by me for the **Master's** degree in **Higher Education Systems** at the University of the Free State is my own and independent work through the professional guidance of my promoter, Prof SM Niemann. I have not previously submitted this thesis at any other university/faculty. I furthermore cede copyrights of this dissertation in the favour of the University of the Free State.

CANDIDATES NAME: **JOHANNES G.A DU PREEZ**

SIGNATURE: **----------**

DATE:

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SUMMARY

Emotions are one of the factors that define us as human yet, many people do not truly understand the extent to which our emotions are influenced by the external environment and how we allow emotions to control our behaviour which often translates into physiological and physical risk. The ability to recognise and manage our emotions is central to how we perceive and react to everyday life.

Eskom as an organisation is totally committed to providing a safe environment for all their employees and no cost is spared in provided what they believe to be the best education and training to support their ZERO HARM philosophy. The question is however, with the unquestionable commitment to safety from management and staff alike; why is the vehicle incident rate (VIR) remaining at unacceptably high levels?

This study was intended to identify the degree to which emotional intelligence, with specific reference to self-awareness, self-management, social awareness and managing relationship's impact on driver specific attitude and behaviour.

Emotional self-awareness allows individuals to start understanding how and why they react to specific external stimuli. Only once individuals recognise and acknowledge their emotions, will they be in a position to control how they react to these emotions. Understanding one's emotions is only the starting point in learning how to control your emotions but without this first step, no meaningful change will be possible.

Emotional self-management is more of a process than a change in one's personality. It is the ability to accept one's shortcomings and manage the observable external responses to stimuli for the benefit of self and others. self-management is essentially a skill and as such, must be learned and practiced before it can be perfected

Social awareness and managing relationships are possibly the more difficult emotional domains to master from a driver perspective, as it may be considered strange to think of social reactions with other road users as one's own responsibility. The social domains however, do have serious implications as to how these incidental relationships ultimately affect the behaviour of road users. It is clearly documented that road rage is common place in our driving culture.

Analysis of the qualitative and quantitative data clearly indicates that emotional inelegance has a significant impact on driver behaviour. The participants in this study sited driver related emotional behaviour to include characteristics associated with road rage and general emotional incompetence. The quantitative data was less significant in determining the impact of emotional intelligence (EI) and driver behaviour in regard to age, gender and race; the fact remains however that the data identified a significant relationship between persons with a low EI and vehicle incidents. The analysis of the quantitative data relating to group, age, gender and race, when viewed against the same participant's qualitative response, as well as the theoretical arguments presented in this study, would suggest that the qualitative data may be influenced by response bias. The degree to which response bias may have contaminated the quantitative data will need to be established through further research.

The recommendations in this study should be addressed in order to test the theories discussed in the study with the view of authenticating how customised education and training can positively impact on driver behaviour and how such education and training should be structured.

Key words: emotional control, relationships, response bias, self- management, self – awareness, social- awareness, vehicle incident rate, VIR.

OPSOMMING

Emosies is een van die faktore wat ons as mense definiëer en tog besef baie mense nie die omvang waarmee die eksterne omgewing ons emosies beinvloed , en hoe ons toelaat dat die emosies ons gedrag beinvloed nie, wat dan baie keer in ‘n fisiologies of fisiese risiko omsit.

Die vermoë om ons emosies te herken en dit te bestuur is sentraal tot hoe ons elke dag ervaar en daarop reageer.

Eskom as organisasie is daartoe verbind om ‘n veilige omgewing vir al sy werknemers te skep. Geen koste word ontsien om werknemers te voorsien van, wat hulle glo, die beste opleiding en opvoedings programme is, om hulle filosofie van GEEN BESERING te ondersteun nie. Die vraag is egter, waarom die voertuig insident koers, ten spyte van hierdie onwrikbare verbintenis tot veiligheid, steeds op onaanvaarbare hoë vlakke bly.

Hierdie studie het ten doel om te bepaal tot watter mate emosionele inteligensie met spesifieke verwysing na self-bewustheid, self-bestuur, sosiale-bewustheid en die bestuur van verhoudings, voertuig bestuurder gedrag en houding beinvloed.

Emosionele self-bewustheid stel individue in staat om te verstaan hoe en hoekom hulle tot ‘n eksterne stimulus reageer. Slegs wanneer individue hul emosies kan erken en definiëer, sal hulle in ‘n posissie wees om beheer uit te oefen oor hoe hulle teenoor die emosies reageer. Om jou emosies te verstaan is slegs die begin punt van om te leer hoe om jou emosies te beheer en te bestuur. Sonder die erkenning van hierdie eerste stap, sal geen betekenisvolle verandering in gedrag of houding moontlik wees nie.

Emosionele self-bestuur is eerder ‘n proses as ‘n verandering van persoonlikheid. Dit is die vermoë om jou eie tekortkominge te aanvaar en jou sigbare, uiterlike reaksies to ‘n stimulus so te beheer en te bestuur dat dit tot voordeel van ander en jouself sal strek. Self-bestuur is ‘n vaardigheid wat aangeleer en geoefen moet word om dit sodoende effektief te kan toepas.

Sosiale bewustheid en die bestuur van verhoudings is moontlik die moeilikste velde om te bemeester uit ‘n voertuig bestuurder se oogpunt, omdat dit vreemd is om aan sosiale interaksie met ander padgebruikers as jou verantwoordelikheid te dink. Die sosiale veld het egter ernstige implikasies op hoe hierdie toevallige verhoudings uiteindelik die gedrag van padgebruikers beinvloed. Padwoede word opgeteken as algemene gedrag in die voertuig bestuur kultuur

Analisering van kwantitatiewe en kwalitatiewe data toon duidelik dat emosionele inteligensie ‘n belangrike rol speel in die gedrag van voertuig bestuurders. Deelnemers aan hierdie studie het dan ook bevestig dat bestuurder verwante emosionele gedrag met padwoede en emosionele wangedrag ge-assosieer word. Die kwantitatiewe data was minder belangrik in die bepaling van die impak van emosionele inteligensie en bestuurder gedrag in verband met ouderdom, ras en geslag; feit bly egter staan dat die data ‘n noemenswaardige verband tussen persone met ‘n lae emosionele inteligensie vlak en voertuig insidente toon.

Analisering van die kwantitatiewe data met verband tot ouderdom, ras en geslag, dui daarop dat die kwalitatiewe data beinvloed is deur respondent vooroordeel wanneer dit met dieselfde respondente se kwalitatiewe reaksies en teoretiese argumente in die studie vergelyk word. Die mate waarin die respondent vooroordeel die kwantitatiewe data besoedel het sal in verdere navorsing bepaal moet word.

Die aanbevelings in hierdie studie moet aangespreek word ten einde die teorië soos in die studie bespreek te toets met die oog op verifiering van hoe spesifiek aangepaste opvoeding en opleiding ‘n positiewe impak op bestuurder gedrag kan uitoefen en hoe hierdie opvoedings en opleiding gestruktureer behoort te word.

Sleutel woorde: emosionele beheer, self-bestuur, self-bewustheid, sosiale-bewustheid, verhoudings, vooroordeel, voertuig insident koers, VIR.

CHAPTER 1

BACKGROUND AND ORIENTATION

1.1 INTRODUCTION

Benchmarked against international best practices, the South African educational system relies on formal education and training providers such as colleges, universities as well as accredited industrial training providers to deliver the required education, training and development (ETD) interventions. These ETD interventions are focused on adult learning and are to a large degree, supportive to the South Africa skills development strategy however, it seems as if there are other variables that play a role in adult learning. Goleman (1995) suggests that emotional intelligence (EI) can in fact matter more than IQ Goleman provides further arguments in support of this theory where he once again discusses the relationship between EI and IQ (Goleman, 1998: 317) During the learning process, the standard ETD practice in South Africa is to subject adult learners to a predetermined learning curriculum which culminate in some form of certification or award. Successful graduates from this system may then present such certificate or award as evidence of achievement (RSA SAQA National skills 2010/11: 228-354).

The ETD system can be described as logical and effective when measured against the primary objectives of the national skills development strategy (South Africa Department of Higher Education and Training, 2011), and is primarily related to the development and measurement of an individual's cognitive abilities (IQ); It is however lamentable that very little effort if any, is made to measure or develop the learners' Emotional Intelligence (EI), considering that the actual application of knowledge and skills may to a large extent, depend on a person's emotional attributes. An IQ/EI imbalanced in the ETD system may offer an explanation as to why apparently competent people often fail to perform according to reasonable performance expectations. If poor performance cannot be attributed to an individual's cognitive ability, then logic would suggest that the most probable reason for such

poor performance may be that of attitude behaviour (AB) which this study will argue, is more of a EI factor that that of IQ.

It is important to note that the terms EI and EQ will be synonymous throughout all discussions in this study.

Goleman (1998, 26-27) set the foundation for further research into emotional intelligence where he identified five domains of emotional EI, namely:

- Knowing your emotions
- Managing your own emotions
- Motivating yourself
- Recognising and understanding other people's emotions
- Managing relationships (managing the emotions of others).

There has since been many other publications relating to the domains of emotional intelligence some of which suggest that there are only four domains and combine, recognising and managing other emotions into one domain, but the message remains fundamentally the same.

There are a number of options when considering education and training in EI. The options discussed by Goleman (1995), Stein and Book (2006), Sparrow and Knight (2006), Singh (2006), Lynn (2005), Bar-on, Maree and Elias, (2007) are all fundamentally the same with slight variations in focus and process.

Stein and Book (2006: 35-53) in their publication "The EQ Edge", propose a self-coaching approach to EI training, applying what they term the A,B,C,D,E principle. The approach suggests that an individual who wishes to improve his or her EI should firstly (A) identify the event or events which activate given emotions. This would then be followed by stage (B) where the individual relates the event to his or her beliefs in order to better understand why and how this event is influencing their emotions. Once having recorded and considered stages (A) and (B), the individual would then enter stage C were he/she would be required to actively consider the possible consequences of reactions to his/her emotion. Stages (D) and (E) is the rationalisation and decision stages in the process. Stage (D) requires that the

individual debates and discards untruths about the events, whereas (E) involves the acknowledgement and noting the effect of stage (D) on one's emotional state.

Lynn (2005: 48) suggests a seven step approach to developing one's EI competency and encompasses most of the EI development suggestions offered by Goleman (1995), Stein & Book (2006) Sparrow & Knight (2006) Singh (2006) and Lynn (2005), as well as Bar-On et al.

(2007). These steps will be discussed in depth in chapter 2.

As already mentioned, Goleman (1995), Lynn (2005), Stein and Book (2006), Sparrow and Knight (2006), Singh (2006), Bar-on et al. (2007) all offer similar training solutions to improving an individual's EI. but what has become apparent is the need for a total approach. In order for EI training to impact on Eskom's vehicle incident rate (VIR), training and development should be supported by an organisational environment that provides the vision of the future (V) dissatisfaction with the present (D) and the first steps in the process (S) as described by Stein and Book (2006) which is perceived by employees as an expressed strategy of the business. Eskom management do to a large extent, express both their vision for the future and dissatisfaction with the present VIR, but there would appear to be questions regarding the effectiveness of present strategy in providing direction on how to address the VIR phenomenon

Any education and training strategy adopted by Eskom may be more effective if the improvement of the staff's EI were to included and supported by management.

1.2 PROBLEM STATEMENT AND PURPOSE OF STUDY

Various adult directed education training and development (ETD) initiatives such as basic driving skills, advanced driver training and regular driver evaluations (IQ focused), have been introduced over recent years in an attempt to reduce the Eskom

North Western Region's (NWR) Vehicle Incident Rate (VIR), but has regrettably not had the desired results. This situation raises the question: is the problem the driver competence (IQ: cognitive and technical ability) or emotional competence (EI)?

Current ETD initiatives at Eskom focused on addressing driver knowledge and skills (Cognitive and technical skills) do undoubtedly contribute to the fundamentals of driver competence, however, it is clearly not the only ETD initiative required.

Arguments put forward by Goleman (1995), Lynn (2005), Stein and Book (2006), Sparrow and Knight (2006), Singh (2006), Bar-on, Maree and Elias (2007) suggests that emotional intelligence education and training could have a positive influence on adult performance in the workplace.

Adult education and training initiatives in the Eskom North Western Region (NWR) are failing to reduce the high vehicle incident rate (VIR) in the region, leaving the region at a loss as to what can or should be done to address this phenomenon.

The problem is that trained and experienced drivers at Eskom NWR are still frequently involved in vehicle incidents which bring forth questions such as:

- What are the key variables of EI that may be influencing attitudes and performance?
- What is the possibility that the EI of drivers have an influence on their driving?
- How do the identified performance variables relate to the EI domains
- How could the inclusion of EI education and training positively influence the driving performance of adult learners at Eskom NWR?

The purpose of this study is to explore the possible relationship between EI and driver behaviour in the Eskom NWR in view of making recommendations in terms of how education and training in EI may be integrated in the driver training strategy.

In addressing the ultimate purpose of the study, the following objectives are set:

- To provide a foundational study on EI; to explore the possible linkages between the various EI domains and how they may be impacting on the vehicle incidents rate.

- To determine to what extent EI may influence driver attitude and performance.

- To make recommendations on the inclusion of EI in the training of adult learners in the Eskom NWR

1.3 RESEARCH DESIGN

In order to achieve the stated objectives of this study, the researcher employed a mixed-method approach. According to Creswell (2008:29) the combination of quantitative and qualitative research provides a better understanding of the research problem than either form of research by itself. Creswell continues to suggest that a mixed method study will present the researcher with an opportunity to make a more convincing argument when viewed from different perspectives.

A pragmatic perspective was adopted for the quantitative research which following a hermeneutical process of data collection analysis and interpretation in order to determine possible correlations between driver attitude and performance against specific EI domains. Hesse-Biber (2010: 8-20) and Creswell (2007: 53-100) suggest that by implementing both quantitative and qualitative measures in researching a phenomenon is a better option than viewing the issues from a single perspective. The use of a mixed method approach as illustrated in Figure1.1 would present a more balanced representation of the phenomenon and support method validity to the findings and conclusions.

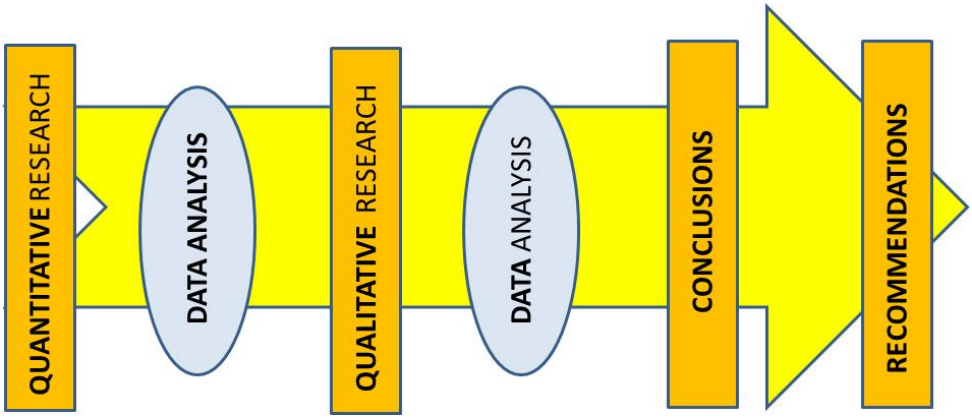


Figure 1.1: Research process flow

Source: (Own diagram)

Phase one employed quantitative research methods in order to determine the EI of the sample group and determine if there are any correlations between the participant's EI scores and their driving performance. This phase of the research was conducted from a positivistic stance where the researcher facilitated the completion of an EQ test (EQ- Map) from all 60 participants after which the data was analysed in order to identify any significant differences between the EQ scores and driver performance. The analysis included possible differences between EI scores and individual VIR statistics, groups (A= accident prone; B= accident free) age, gender and race.

This phase of the study was intended to test the hypotheses with the view of exploring possible EI development as part of the Eskom's training programmes.

Phase two of the research employed a qualitative (constructivist / interpretive) research approach making use of interactive focus group discussion, narratives and personal interviews and followed a hermeneutical process of data collection analysis and interpretation in order to develop a theoretical model concerning performance variables that may be impacting on the driver performance. The research assumed a methodological process where the researcher worked with particulars (details) before generalisation, describes in detail the context of the study and continually revises questions from experience in the field (Creswell, 2007: 17).

1.3.1 Research methods

A literature review provided foundational knowledge of the problem as well as to provide supplementary data.

Empirical investigations were conducted through the voluntary participation of 25 Eskom NWR employees from the Bloemfontein operational area who have been involved in vehicle incidents within the last two years (Group A). The remaining 35 vehicle incident free participants were allocated to “Group B” and were excluded from the empirical investigations.

The investigation included both quantitative and qualitative methods of data collection:

(a) Quantitative investigation

The purpose of the quantitative investigation was to identify possible relationship between the EI of Eskom NWR drivers and their driver performance. The researcher subjected all 60 participants to a standardised self-reporting EI test (Cooper and Sawaf: 1997) in an attempt to identify possible correlations between EI and driver behaviour based on individual EI scores and VIR history as well as the difference between groups in terms of, age, gender and race variables.

(b) Qualitative investigation

The purpose of the qualitative phase was to investigate, describe and conceptualise the lived experiences of the participants in so far as it pertains to their perceptions of how their emotions may influence their driving behaviour. This phase of the study employed both focus group discussions and personal interviews. The participation in the focus group discussions and personal interviews was influenced by economic considerations and personal preferences. A standardised discussion guide was used in the facilitation of both the focus group discussions and personal interviews.

1.3.2 Sampling

Sampling for this study followed a convenience sampling approach (O'leary,2004: 108) for the selection of the participants from the Eskom NWR Bloemfontein operational area, who qualify to participate by virtue of their job descriptions requiring them to drive a vehicle in the execution of their duties.

The Eskom NWR staff numbers for the Bloemfontein area of operation exceeds 800, but this study is directed only at staff who are required to travel as part of their job descriptions. Although it is appreciated that many of the excluded staff may drive vehicles in a private capacity, such staff are excluded from this research as there is no process or requirement to monitor their private driving performance and no authority to implement remedial actions for improvement of private driving practices.

Participation in this study was approved but not mandated by management; consequently participation was totally voluntary. An invitation to participate was directed to all qualifying staff of which 60 of a possible 580 indicated their willingness to participate.

1.3.2.1 Sampling for the quantitative phase

Sampling for the quantitative investigation followed a stratified random sampling approach (O'leary, 2004: 108) for the selection of the participants from the Eskom NWR Bloemfontein operational area, who qualifies to participate by virtue of their job descriptions requiring them to drive a vehicle in the exaction of their duties. As discussed in 1.3 above, 60 staff members volunteered to participate in the study, all of whom took part in the quantitative phase of the study.

1.3.2.2 Sampling for the qualitative phase

The qualitative phase of the research adopted a convenience sampling approach due to the limited number of qualifying participants. 25 participants (group A) deemed to be the best qualified to provide the richest and most descriptive data relating to vehicle incidents were selected for the group discussion and interview

phase. These 25 participants were considered to be unique in so far as they had all been involved in a vehicle incident over the past 24 months, whereas the reaming 35 participants had not. The allocation of participants to focus groups or personal interviews was subject to economic considerations and personal preference. Six of the twenty five participants took part in focus group discussions whilst the remaining nineteen participated in the personal interview phase.

Cooper and Schindler (2008: 165) suggest that it is not possible to accurately pre-determine the number of participants required because qualitative interviews and focus group investigations should continue until theoretical saturation had been reached. Although this sampling could lead to bias, the intention of this study is not to generalise, but rather to develop new theory based on the relationships between variables through developing an in-depth understanding of the personal experiences of reality by the participants in this qualitative phase.

1.3.3 Data analysis

The quantitative data was collected through the application of a standardised self-report questionnaire EQ Map: (Cooper and Sawaf: 1997: 273-288) intended to measure the EI of participants. The data was analysed by the Department of Statistics at the University of the Free State who also advise on the data however, the final accountability for the analysis of the data remains with the researcher.

Qualitative data was collected though the uses of individual interviews and focus group discussions. The data was analysed, synthesised and coded to formulate a theoretical model which describes how EI impacts on driver behaviour and if educational interventions can help to address the phenomenon.

1.3.4 Ethical considerations

Cooper and Schindler (2009: 34) state that ethics are the norms or standards of behaviour that guide moral choice about our behaviour and relationships with others. In this vain, the following ethical considerations where applied to the study:

- Voluntary participation:
  Participation in this research will be on a voluntary basis. Measures will be taken to ensure that participants are not mislead or coerced into participation.

- Informed consent:
  All participants will be fully informed as to the purpose, process, rights and benefits of the research and will be required to sign a consent form indicating their understanding and acceptance of the process.

- Confidentiality and respect:
  The researcher will ensure the confidentiality of participants and their responses as well as respecting the autonomy of participants.

- Data Integrity:
  A Data management system was implemented to ensure the ethical protection of participants during and beyond the data collection phase of the research project.

1.3.5 Validity and reliability

Fishbein and Ajzen (1975: 107-109), Marczyk, Festinger and De Matteo (2005: 65-196) suggest that reliability refers to the extent to which a measure is free of variable error, whereas validity refers to how well the measurement instruments measure the true score. To this end the research study employed the following measures to ensure reliability and validity. The greatest threat to the quantitative data was that of instrument error. In order to reduce instrumentation effect on internal validity, only standardised psychometrically sound measurement instruments were used to measure the variables of interest; EQ-Map (Cooper and Sawaf :1997: 273-288).

1.4 DEMARCATING THE FIELD OF STUDY

The study was mainly in the sub-field of Education Management with the primary objective of determining if education and training in EI may be able to influence the driver behaviour of employees in the Eskom NWR. The study of EI is also applicable to organisational phycology and as such, can also make a contribution to the field of organisational management.

1.4.1 Adult learning theories.

According to Galbraith and Fouch (2010) there are five fundamental learning theories that are the focus of most literature relating to adult learning, these are namely, the sensory stimulation, cognitive, reinforcement, facilitation and andragogy theories.

The significance of these adult learning theories to the development of EI education and training initiatives may be as described as follows:

- Sensory stimulation theory
  Education and training (ET) in EI is no different to any other adult learning programme in so far as adults will adapt and relate better to learning objectives when the delivery of such ET involves all the senses through the application of a variety of techniques. These applications could include such issues as the use of audio visual training aids and simulations which relate as close to the real thing as partially possible.

- Cognitive theory
  Cognitive theory involves the development of an adult's critical thinking and problem solving in relation to a specific subject or event. Adult education in EI should therefore not be restricted to theoretical presentations but rather supported by the hands on problem solving of the emotional impact on specific driving situations and scenarios.

- Reinforcement theory
  The reinforcement theory is based on behavioural stimulation and response. This is significant to any EI development programme in so far as it suggests that such

programmes should be afforded the opportunity for learners to actually experience their responses to emotional triggers; then to analyse and reinforces desired behaviour.

- Facilitation

  Facilitation is preferable to instruction as it provides opportunities for adults to systematically resolve problems or acquire new perspectives though the integration and guidance of a facilitator. Facilitation is based on the presumption that if the self-acquisition of knowledge and skills will be far more meaningful to the adult learner than that of instructor lead learning and that the skills acquired by self-acquisition could be transferable to other learning situations.

- Andragogy

  According to Galraith and Fouch (2007: 36) adult learning is a process where the learning facilitator should accommodate the learner's life experience from a barrier and positive trait perspective. EI education and training should also be goal orientated, relevant and self-directed. Abela (2009:11) suggests the explanations relating to andragogy do not give adequate enfaces on reflection and motivation, although it may be argued that the reinforcement theory discussed above could also be relating to reflection. Motivational issues relating to process theory suggest that the adults will expect the outcomes of learning to produce desired results and that the outcomes should be within the learners capability.

  Merriam (2008:93) states that adult learning in the twenty-first century is constructed as a much broader activity than the cognitive processes of the past and would now involve the body, emotions, spirit as well as the mind. This view towards adult education and training would complement the EI theories which are discussed in this chapter (cf. 2.3).

  The success of any EI education and training programme would in all probability be dependent on the how well the development programme integrates the adult learning theories discussed above.

1.5 LIMITATIONS

1.5.1 Management mandate

Although Eskom NWR management approved of the study, they did not provide a direct mandate. The lack of a mandate limited the cost, time and commitment of the intended target population.

1.5.2 Researcher

The EI driver performance phenomenon is a complex issue requiring sophisticated data gathering and analysis tools. The researcher has limited experience in this regard which could lead to instrumentation error.

1.5.3 Resources

This study has limitations in terms of financial resources which may result in the researcher using only affordable resources.

1.6 VALUE OF RESEARCH

The results of this research will be used to inform future education and training design as to the relevance of EI as a possible component of adult education.

1.7 LAYOUT OF THE STUDY

CHAPTER 1: Background and orientation

CHAPTER 2: Emotional intelligence and driver behaviour

CHAPTER 3: Research design

CHAPTER 4: Quantitative investigation

CHAPTER 5: Qualitative investigation

CHAPTER 6: Synthesis of findings

CHAPTER 2

EMOTIONAL INTELLIGENCE AND DRIVER BEHAVIOUR

2.1 INTRODUCTION

The purpose of this chapter is to provide a foundational study to EI and explore possible linkages between the various EI domains and how they may be impacting on the vehicle incident rate at Ekom NWR.

Standard ETD practice in South Africa subjects adult learners to a predetermined learning curriculum which culminate in some form of certification or award. Successful graduates from this system may then present such certificate or award as evidence of achievement (The national skills, 2010/11: 228-354).

The ETD system may be described as logical and effective when measured against the primary objectives of the national skills development strategy (South Africa Department of Higher Education and Training, 2011) but could also be viewed as being more closely related to the development and measurement of an individual's cognitive abilities (IQ). It is however, lamentable that very little effort if any, is made to measure or develop the learners' Emotional Intelligence (EI), especially when considering that the application of those learned skills are greatly dependent on a person's emotional attributes. An IQ/EI imbalanced in the ETD system may offer an explanation as to why apparently competent people often fail to perform according to reasonable performance expectations. If the failure to perform cannot be attributed to the individual's cognitive ability, then logic would suggest that the most probable reason for such non- conformance may be that of attitude behaviour (AB) which this study will argue, is more of an EI function than that of IQ.

To explore the influences of emotional inelegance (EI) on driver behaviour, a review of the neurological bases for EI, emotional contagion and personality theories was conducted in order to explain the relationship between emotions and behaviour. This

chapter will also define EI and its impact on human behaviour in order to answer the question as to whether EI may impact on education and training and what the effect may have on behavioural performance.

2.2 THEORISING DRIVER BEHAVIOUR AND DRIVER PSYCHOLOGY

The review of driving psychology presented below is intended to provides a plausible explanation as to how emotions may be translated in actual driving performance

2.2.1 Driving Psychology

James (1996-2007: 5-9), in an article entitled “Principles of Driving Psychology” identified three levels of driver behaviour namely: affective, cognitive and sensory-motor. He suggests that these three domains are interdependent and should all be addressed when developing an individual’s driving competence.

The “affective level” refers to the “behaviour of will”. This level is the one that mostly strongly relates to an individual’s EI in so far as it involves feelings, motives, needs and other issues pertaining to goal-directed actions.

The second level, “cognitive level” refers to the “behaviour of understanding” which includes issues such as thought, reasoning and decision-making. This level essentially relates to an individual’s cognitive development (one’s driving skills).

The third and final level, “sensory-motor” refers to experience that is mediated through the sensory-motor channels and would include the following aspects of driver behaviour:

- Automatized habits (unselfconscious or unaware of one’s style and risk habits)
- Errors of perception (distance, speed, initiating wrong actions)
- Lapses in attention or performance due to fatigue, sleepiness, pain, drugs, boredom, inadequate training or preparation.

This study will show that current driver training and evaluation in the Eskom NWR tends to concentrate on the cognitive level whereas the EI domains receive only casual reference.

Other reasons for vehicle incidents were also identified in James (1996-2007: 11-13) and include:

- Bad road conditions
- Design of cars
- Ineffective law enforcement
- Lack of diver safety education
- Bad transport management systems
- Lack of driver incentives
- Driver aggression

Of the above reasons for vehicle incidents; only education, driver aggression and incentives would relate directly to EI; although one may argue that the ability to recognises and analyse the other factors is indirectly a function of emotional intelligence.

According to James (1996-2007: 14-15), emotionally intelligent driver personality traits can be divided into two distinct driver behaviour patterns namely, “aggressive” (negative driving) or “supportive” (supportive driving). He further proposes a formula for both negative and positive conditions which may impact on a driver’s behaviour and which has a direct link to an individual’s EI:

a) Formula for **negative** driving behaviour:
More driver interaction (more cars, less space), greater diversity of drivers
+
Cultural norms of disrespect **conditioning hostility**
=
Aggressive driving and road rage battles

b) Formula for **Positive** driver behaviour:
More driver interaction (more cars, less space), greater diversity of drivers
+
Cultural norms of respect promoting **civility and community**
=
Supportive, safe and sane driving

As can be deduced from the above formulae, the level of negative driver behaviour may be influenced by the volume, space, hostility and diversity of other road users which in turn may result in aggressive driver behaviour. Driver behaviour, when faced with similar driving conditions may remain positive when the cultural norms of respect reflect civility and community. In this context emotional intelligence can be linked to positive and negative driver behaviour as follows:

i. **Oppositional driving**: aggressiveness, road rage and habit.
   Oppositional driving could be linked to a lack of emotional self-awareness where the driver allows circumstances to negatively influence his/her driving behaviour

ii. **Defensive driving**: is positive in that it ensures that the driver is on guard and assumes the worst (not only driving for self). Defensive driving would suggest good emotional self-management and translates into safe driving practices.

iii. **Supportive driving**: act with tolerance, be forgiving and be helpful.
   Supportive driving would suggest a strong awareness of other road user's needs and would in all probability translate into a courteous driving attitude.

Martin (2006: 19) suggests that the time course of emotions is a stimulus followed by an emotion followed simultaneously by physiological reaction and behaviour.

Figure 2.1 is a graphical representation of the emotional behaviour flow process.

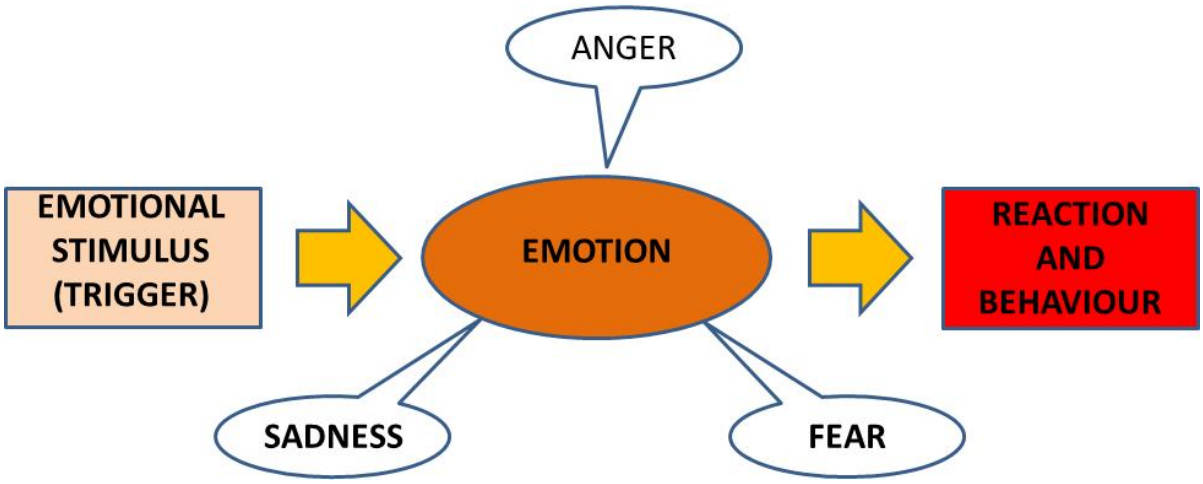


Figure 2.1: Time course of emotions

(Source: Adapted from Martin, 2006: 19).

The time course of emotions is a natural process however, logic would suggest that the better you understand your emotional triggers (emotional self-awareness and self-management) the better you will be equipped to manage your reactions and behaviour towards the emotional stimulus. Some may argue that the above is an oversimplification of human behaviour and that other issues such as personalities, situational impacts and emotional contagion, to name a few, have an influence on how an individual or group may react to any give situation. This may be true, but a fundamental understanding of the impact and management of one's emotions seems like a logical starting point. According to Bar-On (2007: 1-14), adults can be educated and trained to better manage risk and to regulate their own emotional behaviour.

As already suggested in the introduction to this chapter, Eskom has introduced policy, procedures as well as education and training in an effort to promote defensive and supportive driving behaviour. The policies and procedures are focused on regulating driver behaviour such as the compulsory use of seatbelts and regulated speed limits on gravel roads or vehicle classification as well as regular driver competence testing. The enforcement of these measures can be argued to be reliant

on observable behaviour and their impact and influence on emotionally triggered "Oppositional driving" type behaviour is uncertain.

2.3 EMOTIONAL INTELLIGENCE (EI)

This section will review EI related theories such as the neurological basis for EI, emotional contagion, personality theories, and EI theory, all of which contribute to the broader understanding as to how EI may influence driver behaviour.

There is no universally accepted definition for emotional intelligence (EI), however EI is generally described as the ability or capacity to perceive, access and manage the emotions of oneself and understanding that of others. Emotional Quotient (EQ) on the other hand refers to how EI is measured.

Ajzen and Cote (2008: 302) discus the "*Cognitive Foundation of Behaviour"* where they state that the theory of planned behaviour assumes that human social behaviour is reasoned or planned in the sense that people take account of behaviour's likely consequences (behavioural beliefs), the normative expectations of important referents (normative beliefs), and factors that may facilitate or impede performance.

Be this as it may, it still does not explain why drivers tend to make bad decisions that lead to vehicle incidents. One can only surmise as to the extent to which the emotional condition or rather emotional intelligence plays a role in these decisions.

According to Bar-On (2007: 7-9) there is a statistically significant relationship between workplace performance and emotional intelligence (EI).

The need to explore the possible correlation between driver performance and EI justifies research into this phenomenon.

2.3.1 Background to emotional intelligence

The concepts of emotional intelligence can be traced back to 1920 when Edward Thorndike first spoke of "social intelligence", but the concept of Emotional intelligence was first brought to prominence by Goleman (1998) through the

publication of his book titled “Emotional Intelligence; *why it matters more than IQ*. To this point many believed that intelligence could only be measured by IQ and that this was a genetic trait that could not be improved by experience.

The Bar-On model (2006: 22-24) of emotional intelligence identifies six realms to emotional intelligence namely intrapersonal, interpersonal, stress management, adaptability, general mood and effective performance. Other authors such as Goleman (1995), Lynn (2005), Stein and Book (2006), Sparrow and Knight (2006), Singh (2006) and Bar-on, et al. (2007) all subscribe to the basic concept proposed by Bar-On (2005) with some variations in interpretation. An example of these variations can be found in Sparrow and Knight (2006: 10) *Applied emotional intelligence* where it is suggested that emotional intelligence is composed of two distinct areas namely, intrapersonal and interpersonal intelligence. Intrapersonal intelligence addresses issues of self-management whereas interpersonal management concerns itself with how well one manages relationships. The effective application of these areas would lead to effective performance.

Emotional intelligence seems to be fundamentally concerned with feelings, how one notices, pays attention, thinks and acts on these feelings. Sparrow and Knight (2006: 32-35) suggest that emotional intelligence is the habitual practice of using emotional information from ourselves and other people, integrate these feelings with our thinking, which in turn informs our decision making. Most people have the potential to behave with emotional intelligence, but so much of the time do not because of interferences – internal interferences mostly resulting from false beliefs and limiting habits adopted in childhood and retained unwittingly in adulthood. This theory is supported by Freud (2005), Cattell (2005), and Rogers (2005), who’s theories are discussed in paragraph 2.3.4.

Singh (2006: 53) suggests that human beings are not only motivated by reason and intelligence, but are also subject to passions, desires, and a range of other feelings which can motivate them strongly, often in a direction different from that of reason. (EQ + IQ = Intelligence). Humans operate in two minds namely the emotional mind (EQ) and the cognitive mind (IQ) but as suggested in the above formula for intelligence, it is a union between EQ and IQ that really defines intelligence. It may be just as well to note that emotions (EQ) take precedence over thoughts (IQ) in

decision making due to the fact that the rational mind takes a little longer to register and respond than does the emotional mind; therefore it may be argued that emotional intelligence may be even more important than IQ.

Arguably, one of the most important intrapersonal factors is that of impulse control. Although it would be unwise to only focus on one element when considering the total concept of EQ, it is also important to note that action based on impulse (without rational thought) can be the most damaging to one as an individual and to others. It is possible to control one's impulse if one can recognise in time the situations that cause the impulsive decisions. According to Singh (2006: 56) research and experience clearly demonstrate that while some aspects of your personality are fixed, one may however, choose the way one wants to react to them.

Probably the most challenging issue presented by the EQ theories is that of change. Research suggests that one can improve one's emotional competence. Many organisations such as Eskom have embarked on emotional intelligence awareness training without significant impact mostly because individuals are not prepared to take the necessary steps to improve their emotional competence due to their internal resistance to change. Sparrow and Knight (2006: 187) proposed a formula for change (V,D,S) > R, which suggests that for change to take place, one's vision of the future (*V*) plus our dissatisfaction with the present (*D*) plus one's knowing of the first steps to take (*S*) must be greater than the cost of the transition and one's inertial resistance to change (*R*). Although businesses may accept that improving the EQ of their employees would in all probability have a profound effect on their overall business performance, they fail to commit sufficient resources and management commitment into making this a reality, and only providing superficial training, leaving the actual change process to the individual employee. Although in the long run it is up to the individual to make the conscious effort to improve his/her EQ, this would in all probability only happen if the support structures and incentives are in place.

Business must provide strategy that ensures that the cost of resisting change is greater than the effort to change, be it reward or negative consequences. Singh (2006: 78) suggests that if business & Individuals are willing to accord top priority to supporting people, they will be blessed with results beyond their dreams. He further

suggests that organisations are realising that encouraging emotional intelligence skills are a vital component of management philosophy.

2.3.2 Neurological bases for EI

Krueger, Barbey, Mc Cabe, Strenziok, Zamboni, Solomon, Raymont and Grafman (2009) in an article entitled "*The neural bases of key competencies of emotional intelligence"* suggest that EI refers to a set of competencies that are ess`ential features of human life. Although the neural substrates of EI are virtually unknown, it is well established that the prefrontal cortex (PFC) plays a crucial role in human social emotional behaviour. According to Krueger et al. (2009: 6), EI should be viewed as complementary to cognitive intelligence. Ventromedial PFC (vmPFC) is hypothesized to mediate knowledge and manage emotionally relevant information which would influence an individual's ability to interact with others.

According to Sparrow and Knight (2006) the dorsolateral PFC (difPFC) is more closely associated with cognitive intelligence but supports the perception of emotionally relevant information which would encompass such issues as fairness of observed behaviour, morality and decision making. It has also been determined that diPFC plays a significant role in social cognation.

According to Sparrow and Knight (2006: 23) humans are capable of acting with emotional intelligence through good communications between the thinking brain (prefrontal cortex) and the feeling brain (Limbic system) Figure: 2.2

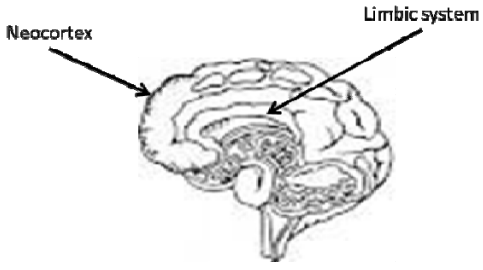


Figure 2.2: The human triune brain.

Source: (Sparrow & Knight 2006:23)

According to Lynn (2005:24) the limbic system is the storehouse for our emotional data, and consists mainly of the amygdala and the hippocampus. The limbic system is essential to, or survival in so far as it serves to record fear and danger which induces a fight or flight response to given stimuli. Emotional events are stored in the hippocampus whereas feelings created by the event are stored in the amygdala. The limbic system, neurons transmit messages from the brain through an electrical and chemical system. A subsystem called peptides is the chemical components of emotions which are responsible for triggering emotional responses.

The cortex and neo-cortex are often referred to as the rational brain and is responsible for one's cognitive responses. It facilitates the rational decision making and analysis process. Although the cortex is considered the higher order brain, the limbic system response is said to be between eighty to one hundred times faster than that of the cortex and as such is well positioned to hijack the rational thinking process.

The relationship between the limbic system and cortex serves to strengthen the argument that emotional management is critical to behavioural responses. If an individual is not sensitized to his/her emotional triggers, then regardless of how rational such person is considered to be, the risk of emotions overriding rational thinking remain high (Lynn 2005).

2.3.3 Emotional contagion

Emotional contagion is an important concept when trying to understand human behaviour. Emotional contagion is basically the tendency to catch and feel emotions that are similar to and influenced by those of others and to mimic these emotions. Hatfield, Cacioppo and Rapson (1994: 129-146) suggest that emotional contagion is a process in which a person or group influences the emotion and consequent behaviour of another person or group through the conscious or unconscious induction of emotion state and behavioural attitude. The workplace is an emotionally loaded environment which can through emotional contagion (cognitive contagion), lead to undesirable behaviour being displayed by individuals or groups. Negative emotional contagion, can be intentional in order to gain support for individuals or groups

dissatisfaction with given situations. Recognizing the emotional influences of individuals, groups, authorities or even corporate culture, is essential in learning how to managing one's own emotions and avoidance of the possible negative influences of emotional contagion.

Unlike cognitive contagion, implicit emotional contagion is less conscious, It associates mostly with non-verbal communication and has been described by Hatfield *et al*.,(1994: 128) as a primitive, automatic and unconscious behaviour where the receiver automatically mimics emotional expressions resulting in an emotional convergence between the sender and receiver. Hatfield *et al*., (1994: 3) proposes an emotional hierarchy (Figure: 2.3) where he suggests the emotions can be separated into emotional categories. The first category, "super ordinate category" is where emotions are said to be either positive or negative. The second category identifies the "basic emotions" namely; love, joy, anger, sadness and fear. The final category identifies some of the subordinate emotions which relate to the basic emotional categories.

Many theorists may argue the hierarchy principles reflected in Figure 2.3 may be an oversimplification and that emotions are complex, organised and adaptive action systems which may produce a different response to different or same stimuli. It is generally accepted however, that emotions fit into families within which all members share a family resemblance.

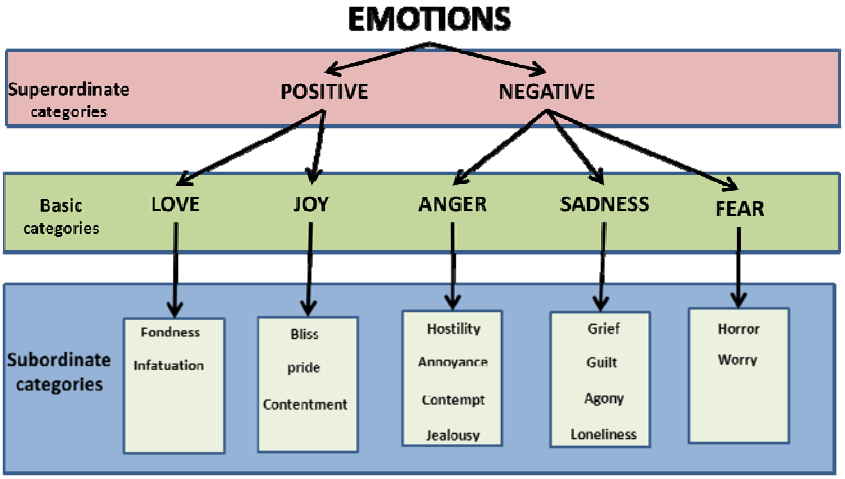


Figure 2.3: Emotional hierarchy

Source: (Hatfield *et al*., 1994:3)

The super ordinate category of emotions is at the top of the hierarchy of emotional and can be related to an individual's dominant emotion in a given situation e.g., the person is perceived to be a positive or negative person. The so-called basic category level suggest that love, joy, anger, sadness and fear make up the five basic emotions experienced by humans. The subordinate emotions link specifically to the basic emotions which in turn link to the superordinate level of emotions. Given the emotional theories already discussed, it could be argued that a person who is not emotionally self-aware or unable to manage personal emotions may be subject to continual emotional turbulence.

The ability to identify one's present or dominant emotional state and how this reflects on one's behaviour is critical to the development of emotional intelligence.

Evolutionary theorists' view on emotions would argue that emotions function to help humans adapt to social situations. If so it would be logical to assume that one person's emotion would affect another. Evolutionists claim that "just *as a herd of animals would benefit from rapidly passing messages about risk and reward, emotional contagion seems to be adaptive for humans to function in groups and adapt to social rules and norms such as maintaining harmonious interaction with powerful allies"*

Intra-group emotional contagion within organisations can transpire through the introduction of work teams, where the group's emotional state would have an influence on factors such as cohesiveness, morale, rapport and team performance. In this process one should note that leaders (natural or appointed) are more likely to be emotionally contagious than others. Although this study cannot conclusively claim to prove that the role emotional contagion may be playing in Eskom NWR vehicle incident report (VIR), logic would suggest that the possibility may well exist. Further investigation into emotional contagion and its impact on specific behaviours could prove to be a critical factor in understanding the Eskom NWR driver phenomenon.

2.3.4 Theories underpinning EI

An individual's personality can be said to be the basis of all human behaviour, the foundation of which is developed in the early childhood years. Individual

personalities have a profound impact on how adults behave in given situations. Any attempt to change or adapt an adult's personality would prove to be extremely difficult and impractical when viewed from an organisational performance perspective. Although adult personalities are basically set, this does not imply that an individual's behaviour cannot be modified.

Personality theorists interpret the definition of personalities from their specific viewpoint, for example Freud (cited in Schultz and Schultz 2005:45-91) adopts a psychoanalytic view, Cattell and Eysenck are theorists (2005: 249-250), who have a generic view, whereas Rogers (2005:322-351) pursues a humanistic view. Skinner (2005: 379-401) on the other hand follows a behaviourist view. All however, relate to the generic definition of personality offered by Schultz, D. P. & Schultz, S. P. (2005:10) which describes personality as "*The unique, relatively enduring internal and external aspects of a person's character that influence behaviour in different situations"*

The various theories mentioned above will now be discussed in more detail.

2.3.4.1 Freud : Structures of personality

Freud (2005: 45-91) in his structure of personality introduced three levels of personality, the conscious, preconscious and the unconscious. Freud also proposes that there are three basic structures in the anatomy of personality namely; the id, the ego and the super ego (Figure 2.4).

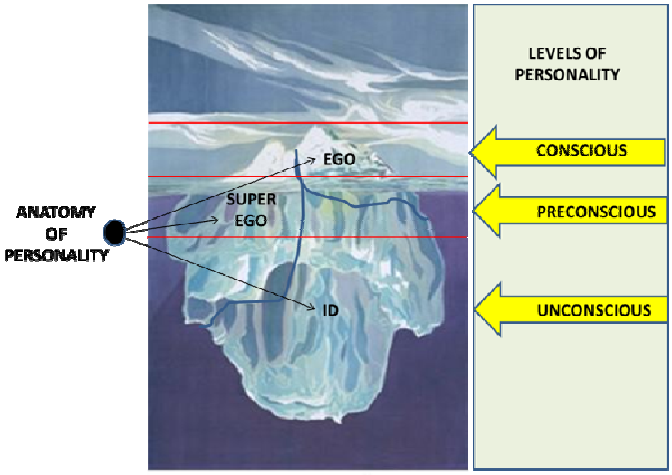


Figure 2.4: Structure of personality

Source: (Adapted from Weiten cited in Freud, 2005:54)

The “ego” is the conscious and rational aspect of the personality, responsible for directing and controlling the instincts according to the reality principle. The ego postpones delays or redirects the pleasure principles according to realities of given situation. Murray (2005: 194-215) suggests that the conscious organizer is a broader concept than that offered by Freud (2005: 45-91), it is the conscious reasoning between the ego and id that decides and wills the direction of behaviour. The ego and id interaction can help us to better understand why people behave in different ways to different stimuli. Further research into the impact of ego on driver behaviour, may help us to better understand and manage driver performance. The “super ego” is essentially formed during adolescence and integrates our ideas of what we are and what we want to be, it internalises the moral, values and social aspects of personality and is not only shaped by parents and authoritative figures, but also by peer groups and culture.

Anxiety represents a threat to the ego and can be classified as follows:

- **Reality anxiety**

  Reality anxiety serves a positive purpose in so far as it makes us aware of real dangers and should result in an individual adjusting his/her behaviour accordingly.

- **Neurotic anxiety**

  Neurotic anxiety on the other hand has its bases in childhood and is influenced by the internal conflict between instructional gratification and reality. The neurotic anxiety is develops from an unconscious fear of being punished for impulsively displaying id-domain behaviour.

- **Moral anxiety**

  Unlike neurotic anxiety, moral anxiety has some bases in reality. The shame and guilt caused by immoral behaviour arises from within, but it is the conscience that causes the fear and anxiety. Moral anxiety can be a powerful tool in understanding and managing behaviour.

The id is fundamentally the survival part of personality. Freud, (2005: 55) suggests that the "id" operates according to the pleasure principle, that is basically focused on the avoidance of pain and maximisation of pleasure. Freud (2005: 55) further states that the id serves as the reservoir for the instinct and libido (the psychic energy manifested by the instincts) and supplies the energy for the ego and superego components of personality. The id is directly related to the satisfaction of bodily needs. Murray (2005: 195) on the other hand argues that the id is not only a self-satisfaction function but also has positive attributes such as empathy and love.

2.3.4.2 Cattell: Generic trait view

Cattell (2005:249-250) peruses a generic view to personalities and suggests a hierarchy of traits with specific traits derived from more fundamental, general traits. Cattell further suggests that personality is developed through the unfolding of a genetic blueprint with maturation as inherited predispositions interact with learning experiences. This view would suggest that personalities are developed through a series of life experiences and although founded on an inherited predisposition, is a process that will continue throughout a person's life.

The significance of the generic trait view is that it suggests that personality is an evolutionary process which can only experience meaningful change if influenced over extended periods of time (Table 2.1).

Table 2.1: Stages of personality development

STAGE	AGE	DEVELOMENT5
Infancy	Birth–6	Weaning; toilet training; formation of ego, superego, and social attitudes
Childhood	6–14	Independence from parents and identification with peers
Adolescence	14–23	Conflicts about independence, self-assertion and sex
Maturity	23 - 50	Satisfaction with career, marriage, and family
Late maturity	50–65	Personality changes in response to physical and social circumstances
Old age	65>	Adjustment to loss of friends, career, and status

(Source: adapted from Cattell 2005: 282)

The target population for this study would include adolescence, maturity,

late maturity stages and EI development programmes should be alert to the fact that personalities may influence the techniques required for effective learning.

2.3.4.3 Rogers: Humanistic view

Rogers (2005: 332) presents a humanistic view to personality development where he proposes a theory of self-concept and discusses a personality structure that illustrates the influences of self-concept and actual experience (Figure 2.5). Rogers proposes that personality disorders may result from an incongruence between the self and actual experience

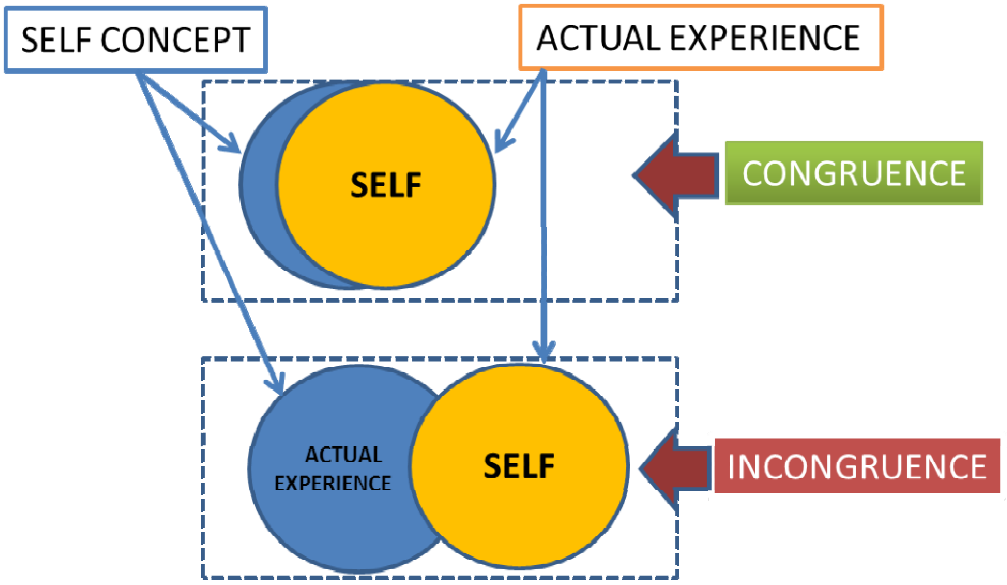


Figure 2.5: Congruence/incongruence between thyself & experience

(Source: adapted from Rogers 2005: 332)

The significance of the humanistic view to behavioural performance (driving) is the degree to which an individual's emotional state is influenced by the incongruence between self and actual experience. It may be reasonable to assume that an individual experiencing emotional conflict represents a greater driving risk than those who are not.

2.3.4.4 Skinner: Behavioural view

Another view on personality is offered by Skinner (2005:377) who follows a behavioural view where he suggests that a person's behaviour is as a result of a collection of responses tied to specific stimulus situations (Figure 2.6). Fundamentally skinner is suggesting that behaviour which produces desirable results would in all probability be repeated. The responses to specific behaviour is as perceived by the individual and may not necessarily correlate with what society view as acceptable behaviour.

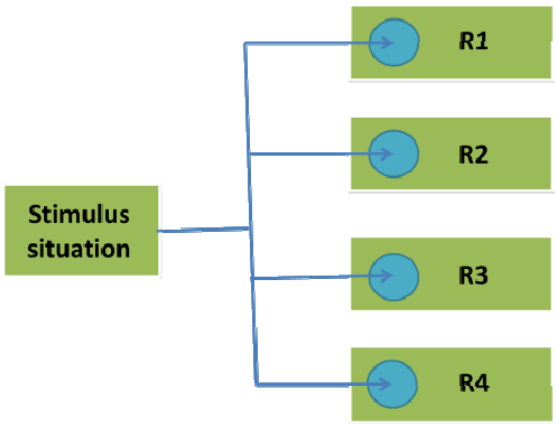


Figure 2.6: Operant response tendencies

Source: (Skinner, cited in Schultz and Schultz 2005: 379)

The significance of the behavioural theory is that it implies that individuals who are continuously subjected to responses of their behaviour; positive responses to desired behaviour over time may become an instinctive behaviour and incorporated into one's personality traits. Kelly (2005: 355) follows a cognitive approach which fundamentally supports Skinner's arguments on response behaviour. Kelly suggests that in the cognitive approach, needs, drives, or emotions as separate activities of the personality are not found. Instead, they are aspects of personality under the control of the cognitive processes.

The behavioural / cognitive views on personalities are significant to any analysis of driver behaviour in so far as it helps to understand how and why certain behaviour are performed. These views suggest that behaviour is less affected by factors discussed in the psychoanalytic, humanistic and genetic views, and that behaviour can be controlled by the individual.

2.3.4.5 McCrae and Lockenhoff: Self-regulation

McCrae and Lockenhoff (2010: 149) offer another perspective to personality with specific reference to self-regulation. This suggests that people are not always in control of their physical and social environment leading to discrepancies between

their identities and ego. These discrepancies create internal conflict which in turn may affect an individual's emotions and associated behaviour.

2.3.4.6 Shaffer: Conditioning

Shaffer (1998:55) suggests that personality is also shaped though mere exposure, classical conditioning, instrumental conditioning and observational learning. Continuous exposure may develop favourable attitudes towards objects, activities or persons when encountered on a regular basis. It would be reasonable to conclude that the more favourable the exposure is, the greater impact such exposure would have.

Shaffer (1998: 55) continues to explain classic and instrumental conditioning as well as observational learning as follows:

- Classic conditioning is basically a conditioned response (CR) to an initially neutral or conditioned stimulus (CS). Conditioning becomes an unconscious response to given stimuli.

- Instrumental conditioning basically refers to how individuals experience the consequences of their actions (reinforcement and punishment). This would eventually result in the acceptance or rejection of situational behaviour.

- The observational learning or personality development is a process where through listening to others' reasoning or observed behaviour, such person may acquire a negative or positive attitude towards persons, groups of situations and over time this may be internalised into the individuals personality.

An individual's cognitive, social and physical competence may determine how he or she reacts to given stimuli. It is hypothesised that an individual with a high self - esteem is more likely to react in emotional intelligent manner to given situations.

The degree to which self-esteem influences driver behaviour is uncertain and may pose interesting research proposal.

2.3.4.7 Implications to EI

The key components of the various theories are reflected in Figure 2.7 below and their implications to the development of emotional intelligence will be discussed.

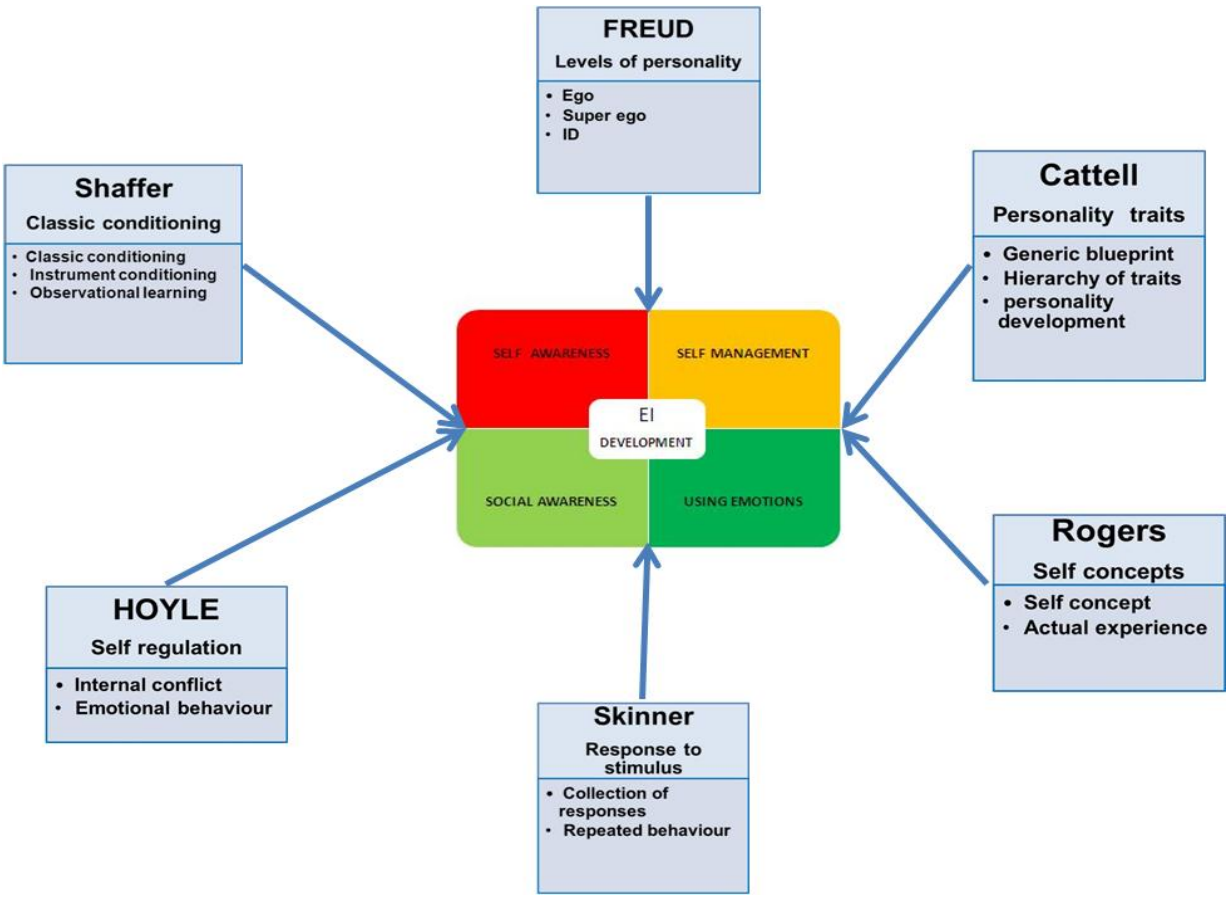


Figure 2.7: Implications to EI

In terms of Figure 2.7, the various theories contributed to the existence of the EI concept as follows:

- **Freud**

  Freud (cited in Schultz and Schultz 2005) proposes that personality is made up of three primary levels, the conscious level with is fundamentally the ego,

the preconscious level which represents the super ego and the unconscious which represents the ID

The implications of Freud's theory to EI development is that any education and training (ET) initiative would have to take into account that adults have already developed personalities which would be difficult, if not impossible to change in the short term. The most plausible ET approach in regard to personality structures may be to focus on the effects of the pleasure principle through self-awareness and self-management interventions.

- **Cattell**

  Cattell (2005) proposes that personality is an evolutionary process and can only experience meaningful change if influenced over extended periods. Cattell's view on personality would suggest that EI development is a long term commitment however, short term impact on behaviour may be possible if the focus of development initiatives are on self-awareness in the adolescence stage and social awareness, at the maturity stage.

- **Rogers**

  Rogers's theory (2005: 332-251) is very similar to that of Hoyle in so far as behaviour is often influenced by incongruence between self-concept and actual experience. This theory is significant to the development of EI in so far as adults must be aware of their reactions to any incongruence. Once again this theory is applicable to all the EI domains.

- **Skinner**

  Skinner (2005: 379 - 401) suggests that behaviours are a response to specific stimulus. This theory has significant implications to EI development in so far as any ET initiative should encourage and assist adult learners to identify their reactions to given stimulus, specifically in the driving environment. The EI initiatives in this regard should address all the EI domains.

- **Robert, McCrae and Lockenhoff**

  McCrae and Lockenhoff (2005:145-168) suggest that self-regulation has significance implications in the development of EI in so far as adults need to learn how to recognise and control their emotional responses to which result from discrepancies between their ID and ego. This skill would need to be practiced over time until it becomes a habit. This theory would possibly be most significant in the EI domains of self-awareness and self-management.

- **Shaffer**

  Shaffer (1998: 55) suggests that personality is also shaped by classic conditioning, instrument conditioning and observational learning. The implications of this theory to the development of EI are that organisational values, behaviour and consequences of non-conformance should be accommodated in any ET intervention.

Perceptions of an individual's personality may be influenced by the observable behaviour displayed by such individual. EI development should provide a process which enables individuals to recognise and manage the influences of their emotions on their behaviour

2.3.5 Domains of emotional intelligence

Goleman (1995:43) set the foundation for further research into emotional intelligence. Goleman identified five domains of emotional intelligence as:

- Knowing your emotions
- Managing your own emotions
- Motivating yourself
- Recognising and understanding other people's emotions
- Managing relationships (managing the emotions of others)

There has since been many other publications relating to the domains of emotional intelligence some of which suggest that there are only four domains and combine

recognising and managing other emotions into one domain, but the message remains fundamentally the same. Bar-on (cited in Stein & Book, 2006:22) presents a model that proposes five realms of emotional intelligence which in turn encompass all five of the EQ domains proposed by Goleman (1998: 26-27). These are reflected in Figure 2.8

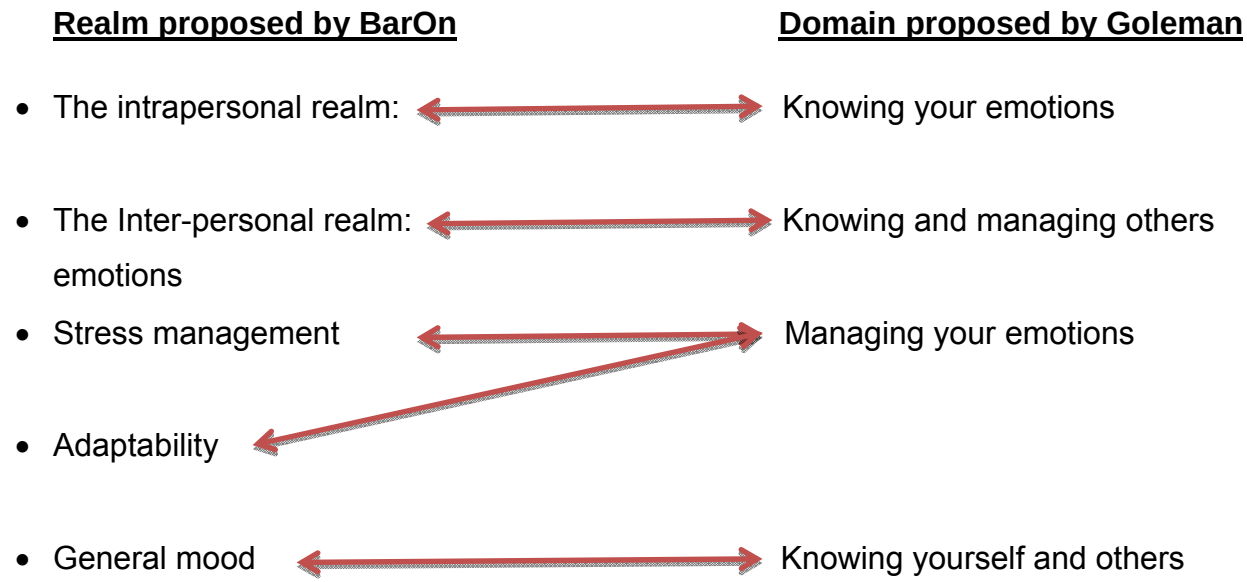


Figure 2.8: Domains and realms

The intrapersonal domain "knowing yourself" or "self-awareness" deals with what could be termed as 'self-relationship". Lynn (2005: 39) suggests that the interpersonal domain would be the ability to fully understand oneself and to use that information to manage one's emotions in a productive way. Sparrow & Knight (2006: 10) also support the idea that EI can be divided into two unitary concepts namely Interpersonal and the intrapersonal. Stein and Book. (2006: 55) define this dimension as the "inner self" and suggest that it determines how in touch we are with our feelings and how we are able to express these feelings.

This dimension addresses the following intra-personal issues:

- Emotional self-awareness
- Assertiveness
- Independence
- Self-Regard
- Self-actualisation.

The intrapersonal concepts of emotional self-awareness, assertiveness, independence, self-regard and self-actualisation will be discussed in greater detail In the following paragraphs.

Sparrow and Knight (2006: 120) suggest that self-awareness is highly dependent on self-regard – if you are secure in your "OK-ness", you can afford to be aware of whatever you are feeling without your value being threatened.

Stein and Book. (2006: 57) define emotional self-awareness as "the ability to recognize your feelings, to differentiate between them, to know why you are feeling these feelings and also to recognise the impact your feelings have on others around you". Emotional self-awareness is the first step in improving one's emotional intelligence and forms the foundation on which all the other elements of emotional intelligence are built.

In the emotional intelligence realm, assertiveness refers to one's ability to express feelings, beliefs and stand up for your rights without being aggressive or abusive. Assertiveness is all about communication; in the way that we verbally and non-verbally express our feelings. People who lack communication skills would be well advised to develop effective communication skills through training or actively seeking feedback about their communication skills. Assertiveness is not unique to the emotional intelligence domain but is a common philosophy throughout business. The understanding and effective application of assertiveness would in all probability have to be balanced with the other factors such as self-awareness, self-esteem and independence to truly manifest desired results.

Independence in the EQ context refers to being free from emotional dependency and in many ways can be seen as a by-product of emotional self-awareness and assertiveness. Emotional independence is fundamentally taking responsibility for

your decisions and well-being. Sparrow and Knight (2006: 11-14) discuss what they term “the three layered cake where they suggest that independence has more to do with the relationship with ourselves rather than that of being empowered through interpersonal relationships. It would appear that true emotional independence, or at least the level of independence would have a direct correlation to our self-awareness.

According to Sparrow & Knight (2006: 85), “Having high self-regard enables you to have high regard for others, and so genuinely to understand and accept others, even when they are very different from you”. Having a high self regard will help you to react with others in a positive manner, you will be more likely to be able to give and take criticism in a positive manner. Stein and Book. (2006: 57) refers to self-regard or self-esteem as accepting yourself as basically good. If we accept the concept that EI is both intrapersonal and interpersonal then it is difficult to believe that true EI can be achieved without first accepting yourself. Eleanor Roosevelt once stated “No one can make you feel inferior without your consent” (cited in Stein and Book. (2006:103). Only in mastering one’s assertiveness, independence and self-regard can one hope to realise self-actualisation

Self-actualisation is the ability to realise your own potential, it is your ability to follow your passion and to live life to its fullest. Although this may seem to be somewhat idealistic in today’s world it is never the less, what we all striving for. Singh (2006:128) refers to emotional maturity as the balanced state of heart and mind. He suggests that it is a state of psychological satisfaction and being adaptable and flexible. Stein and Book. (2006:112) suggest that individuals with healthy self-actualisation are pleased with the location they find themselves at on life’s highway.

Theory would suggest that the one must first come to terms with the issues discussed in the intrapersonal domain before you can hope to develop interpersonal competencies.

Sparrow and Knight (2006) subscribe to the theory that emotional intelligence should be viewed from both the interpersonal and intrapersonal (Figure 2.9) and the relationship between these two domains. Intrapersonal competency concerns itself with managing self, whereas interpersonal addresses the issues of managing

relationships. However, when viewing emotional intelligence in its totality, one comes to realise that these domains are mostly interdependent.

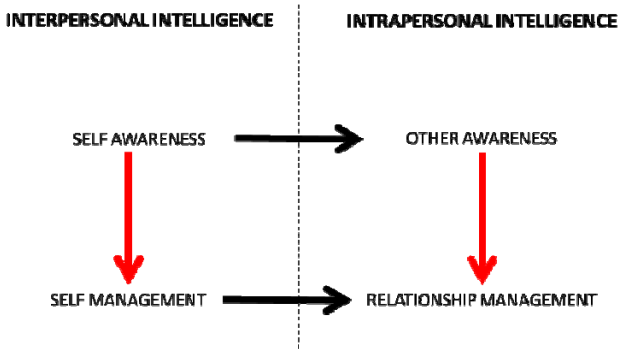


Figure .2.9: Managing relationships with self and others

(Source: adapted from Sparrow and Knight 2006:10)

Stein and Book (2006: 123) define the interpersonal domain as people skills, to understand and interact with others in a variety of situations.

The interpersonal domain would address the following elements:

- Empathy
- Social Responsibility
- Interpersonal relationships

Empathy is fundamentally the ability to understand and be sensitive to the feelings of others (understanding and managing relationships). It is the art of asking questions in order to better understand how and why others are feeling the way they do. Empathy requires good listening skills in order to obtain accurate data about the situation so that you can act accordingly. Empathy should also be a sincere process and not simply an activity.

Sparrow and Knight (2006: 132) suggest that in order to be truly empathetic to others one needs to "Empty yourself". You need to distance yourself from your own concerns for the time being so as to enable you to concentrate on the situation at hand. You need to psychologically put your concerns up on a shelf, out of sight, to

be picked up later. Empathy is also about “active listing” and acknowledgement of what someone else is saying.

Social responsibility mainly addresses one’s involvement in social groups. It is a process where you interact with social groups giving meaningful contribution without expecting to be remunerated or rewarded for your efforts. It is essentially the act of giving back. John F. Kennedy (cited in Stein and Book, 2006: 140) once stated “If a free society cannot help the many who are poor, it cannot save the few who are rich” There are many examples in human history that would bear testimony to these words.

Stein and Book. (2006: 150) define this domain as “the ability to establish and maintain mutually satisfying relationships that are characterised by intimacy and by giving and receiving affection”. Meaningful relationships would be dependent on one’s ability to remain honest, trustworthy and consistent in behaviour. One can appreciate that the elements of self-awareness and self-esteem would play an important role in the establishment and maintenance of meaningful relationships.

Stein and Book (2006: 123) define adaptability, self-management domain as “the ability to size up and respond to a wide range of difficulties”. This realm will address the following elements:

- Problem solving
- Reality testing
- Flexibility

Where problem solving is primarily concerned with the effective analysis of a problem, reality testing and flexibility determine how we react or adapt to a situation.

Problem solving is basically the ability to effectively analyse problem areas and determine strategy to address the problems. This may be a typical business approach to problem solving, but one can appreciate that the focus may be somewhat different when viewed from an EI perspective, for example the business approach is focused on immediate business performance and profitability whereas

EI focus on such issues such as empathy and relationships as equally important to the longer term business performance. One can only imagine what would happen if the relationship between management and organised labour were to break down. Recent examples of failed relationships in the public sector of South Africa illustrate this point.

Stein and Book (2006: 123) define reality testing as “the ability to assess correspondence between what is experienced and what objectivity exists”.

Reality testing requires that one be objective about perceptions and learn not to fear the worst in every situation. It may be useful to note that reality testing is not implying that your viewpoint is wrong, but rather that you also do not simply assume that your viewpoint is correct.

Sparrow and Knight (2006: 146) suggest that flexibility is the degree to which you feel free to adapt your thinking and behaviour to match changing situations. This explanation of flexibility would seem logical but it is also important to note that changing or adapting your thinking and behaviour should not result in you compromising your position simply to please, but rather a willingness to listen evaluate and compromise and adapt on logical considerations.

Stein and Book (2006: 181) define flexibility as “the ability to adjust your emotions, thoughts and behaviour to changing situations and conditions”. One can appreciate how the intra-personal domain, with specific reference to “self-regard and emotional self-awareness would play a big role in one’s willingness to be flexible. After all if you do not understand your own emotions and have a poor self-regard you are in all probability not even going to recognise changing conditions and how these changes affect you.

People often stress because they often do not move towards their long term goals (example saving money) because they give in to impulses (take credit) which offers short term satisfaction. Stein and Book (2006: 189) define this domain as “ the ability to withstand stress without losing control” and would encompass the issues of stress tolerance and impulse control.

Stress tolerance is basically the ability to effectively cope with stress. In order to achieve this, one needs to be able to evaluate stress. Stress is the human's response to situations that are perceived to be threatening to one's safety or well-being. It is a deep seated biological impulse ranging from fight to flight. It is important to remember that stress is not always negative and can serve to keep one sharp and alert to physical and psychological situations which are inevitable. Stress however becomes a problem when the situation becomes too much for an individual to control and may cause physical and/or physiological damage to a person. In order to handle stress, it is important that one keeps perspective on a situation and takes the necessary remedial action. The danger of stress is that it is not always apparent and some people only realize this when the damage is done, it is therefore important that individuals familiarise themselves with the symptoms or indicators of stress.

Singh (2006: 24) suggest that impulse control, or rather delayed gratification is a master skill, a triumph of the brain's reasoning power over its impulsive one. Impulse control is basically how we react to feelings; it is very much a reactive action without rational thought. As already suggested in the background discussion, it is possible to control one's impulse if one can recognise in time the situations that cause the impulsive decisions. According to Singh (2006: 56), research and experience clearly demonstrate that while some aspects of your personality are fixed, you may however, choose the way you want to react to them.

Stein and Book, (2006: 215) defines the adaptability domain as "your outlook on life, your ability to enjoy yourself and others and your feeling of contentment or dissatisfaction". This realm addresses two elements namely happiness and optimism. Happiness can be argued to be a state of mind, the active pursuit of truth and love. True happiness cannot be measured in terms of material wealth alone (I would like to give it a try) but rather the wholehearted participation and dedication to your belief and values. Optimism on the other hand, is the act of maintaining a positive attitude even in the face of adversity. There is a tendency with some people to adopt a blind optimism failing to fully appreciate the situation and running the risk of being overtaken by prevailing circumstances. Although optimism is a good trait, it

should be tempered with a certain degree of flexibility. Optimism can be measured by the ABCDE model presented by Stein and Book (2006: 35-53).

For the purpose of this study, the five domains proposed by Golman (*1995:43*) will form the foundation of the EI research.

2.3.6 Training in EI

There are a number of suggestions concerning education and training in EI. The options discussed by Goleman (1995), Stein and Book (2006), Sparrow and Knight (2006), Singh (2006), Lynn (2005), Bar-on et al. (2007) are all fundamentally the same with slight variations on focus and process.

Stein and Book (2006: 35-53) in their book "The EQ Edge" propose a self-coaching approach to EI education and training applying what they term the A,B,C,D,E principle which is reflected in Figure 2.10 below.

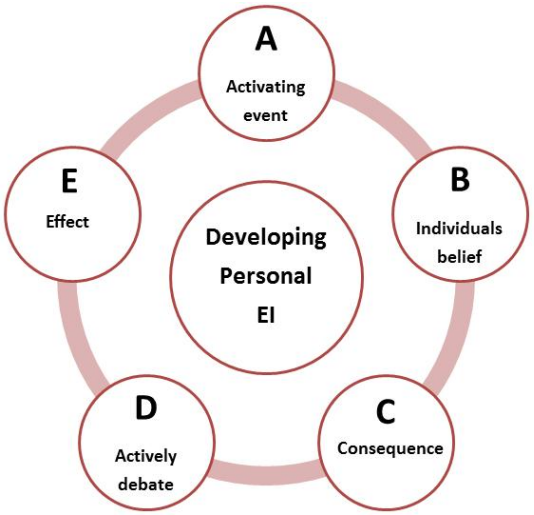


Figure 2.10: Self coaching approach to personal EI development

The self-coaching approach to EI development suggests that a person should record the A,B,C,D and E of his her emotional experiences whereas A = the activating event, B = the individuals beliefs about a particular event or situation, C = The

consequence of the reaction caused by B, D = to actively debate, dispute and discard untruths about B, E = noting the effects of D, this being a form of reinforcement. This approach seems logical and necessary however, its success would be subject to the resistance to change. Figure 2.11 reflects a resistance model that can be associated with the following formula (V,D,S) > R).

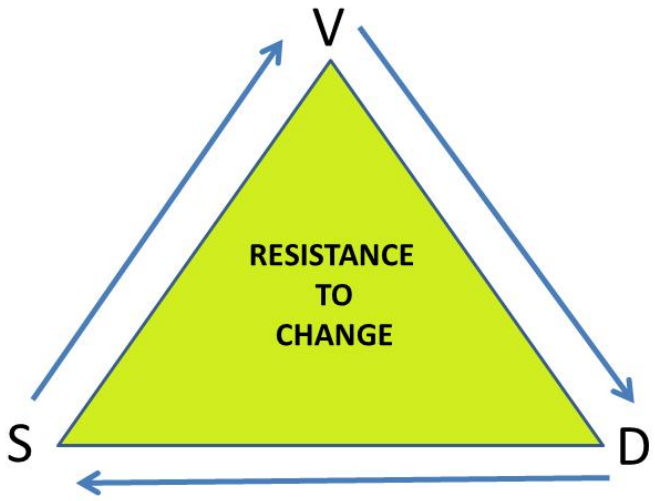


Figure 2.11: Resistance to emotional change

The V = vision of the future. For emotional change to take place it would be necessary for an individual to have a clear vision of what he/she would like to be. This would be closely linked to the EI domain of self-awareness which is arguably the first step in the change process.

A vision alone would probably not be enough to motivate the effort required in order to effect meaning full and sustainable change, an individual would also have to become dissatisfied (D= dissatisfaction) with his/her present emotional situation or reactions.

Finally (S = first steps) an individual must take the first steps towards change. Education and training should assist in this process. This stage could best be associated with the EI domain of self-management as it is an assertive step in taking control over one's emotions.

Lynn (2006: 48) suggests a seven step approach to developing one's EI competency and encompasses most of the EI development suggestions offered by Goleman (1995), Lynn (2005), Stein and Book (2006), Sparrow and Knight (2006), Singh (2006), Bar-on, et al.(2007). This seven step approach is reflected in Figure 2.12 below:

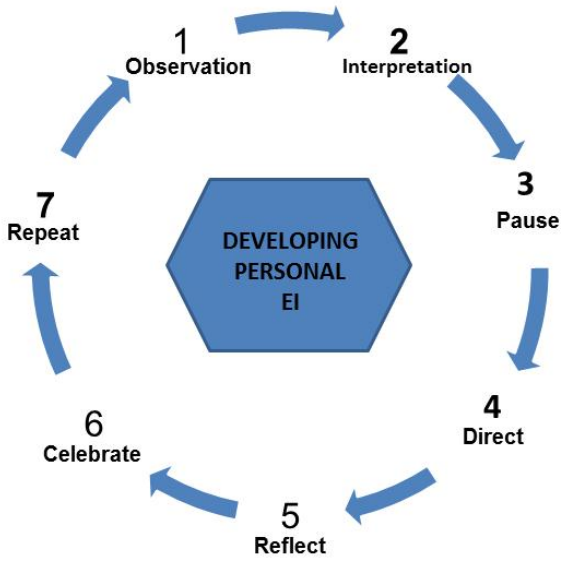


Figure 2.12: The seven step approach to developing EI

- Step 1: Observation

  Power of observation is the first essential skill that your self-coach requires in order to gain knowledge and insight of emotional behaviour in order to build an observation database which may prove to be useful during the refection stage. This step is also associated with the self-awareness domain;

- Step 2: Interpretation

  Step to concerns itself with the interpretation of the data base in order to take necessary steps to rectify weaknesses and to strengthen one's overall EQ. This step can be seen to be associated with the EI domain of self-management;

- Step 3: Pause

  Pause serves as a cooling-down period. It allows you to put on the brakes, shift gears, and eventually, regroup. This step associates with the EI domains of self-awareness and emotional self-management.

- Step 4: Direct

  This step fundamentally concerns itself with directing one's emotional impact to gain the desired results. It also applies the ABCD model as discussed. Directing emotions may best associate with the EI domain of self-management in so far as it addresses how one choses to react to emotions.

- Step 5: Reflect

  Reflection is the rain and the sunshine and the fertilizer that can turn life experience into wisdom. Without reflection, our promising seeds of wisdom will die. This step can also be seen to associate with the EI domain of self-awareness as it allows for the opportunity to reflect on how one reacts to emotional situations with the view of improving emotional response

- Step 6: Celebrate

  Some of life's other achievements truly represent milestones that have taken great effort.

- Step 7: Repeat

  Affirm the direction, then let go and follow the path. Life is a great teacher. It will provide the lessons if we are open to the learning.

As already mentioned, Goleman (1995), Lynn (2005), Stein and Book (2006), Sparrow and Knight (2006), Singh (2006), Bar-on et al. (2007) all offer similar training solutions to improving an individual's EI, but what has become apparent is the need for a total approach. For EI training development to be successful there

must be an environment created that provides the vision of the future (V) dissatisfaction with the present (D) and the first steps in the process (S) and is seen by employees as an expressed strategy of business. Employees will then come to realise that resisting change would be working against their self-interest. This should be a gradual and negotiated process with all necessary support such as trained EQ practitioners being in place. Such strategy should have perceived consequences for non-compliance. It should become part of the organisational culture to which employees would be expected to adopt.

Other approaches could be more aggressive when addressing specific situations that may have safety implications. This would involve high risk personnel being compelled to participate on EQ training programmes in order to protect themselves and their co-workers.

Another approach may be to drive awareness of the benefits of improving ones EQ and to provide training and support to those individuals who wish to participate on such programmes. There would be no need to reward these individuals as the programme suggests, improving ones EQ will be reward enough. The benefits of this approach are when others observe the changes in an individual, they would in all probability be interested in voluntarily participating on these training programmes.

2.4 SYNTHESIS OF EI DEVELOPMENT APPROACHES

The two primary approaches to EI education and training were presented by Stein and Book (2006) and Lynn (2005) (cf.2.3.6) Figure 2.13 reflects an integrated approach to the EI development of adults with specific application in the driving environment.

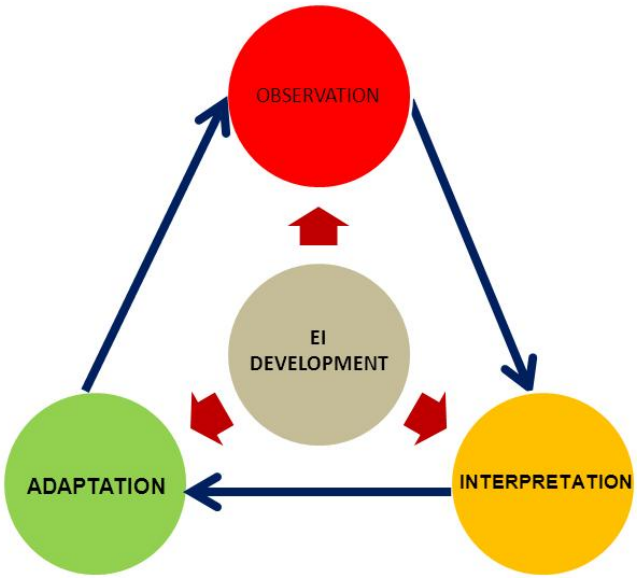


Figure 2.13: Integrated EI development approach

The integrated approach reflected in figure 2.13 above identifies three primary components or phases of EI development. These are as discussed below:

- **Observation**

  Observation describes the process by which an individual would become aware of his/her emotional triggers and related response. This phase in the EI development process relates strongly to the EI self-awareness domain and to a lesser degree, the social awareness domain. Observation should be the first step in any EI development programme as adults need to be emotionally self-aware before they can learn to accept and commit to improvement of their EI status. Adults must realise the consequences of their emotional behaviour for both themselves and others for example, if an individual behaves badly in traffic, he/she is increasing personal risk and in all probability causing stress to other road users.

  Most of the time and effort afforded to any EI education and training programme should be committed to observation as this forms the foundation for all future EI development initiatives.

One of the primary goals of the observation phase should also be to create a sense of discontent amongst the adult learners for dysfunctional emotional behaviours and in so doing, create the desire to change.

- **Interpretation**

  Once adults have achieved a fundamental working level of EI self-awareness they will continually need to interpret emotional messages and triggers which will naturally transpire from everyday relations and expectations. The adult learner will need to update his/her database of situations and events that trigger emotional responses and what typical behaviour responses transpire from such emotions.

  The interpretation phase could be said to be more closely linked to the EI domain of self-management as it is primarily a maintenance and reinforcement activity which follows self-awareness. Some may say that this phase is the coaching part of EI development and would encompass steps 2, 3, 5 and 7 of the training interventions proposed by Lynn (2005:48).

- **Adaption**

  Adaptation is the change process of the EI development programme. Success in the adaptation phase would probably be reliant on effectiveness of the observation phase. If the adult learner is not sufficiently discontent with his/her current emotional reactions to situations given the EI theories already discussed, then it would be highly improbable that any meaningful change would take place.

  The adaptability phase could best be associated with the EI domains of self-management and social awareness.

The adult learning theories discussed in chapter 1 (cf. 1.4.1) should also be integrated into any EI development approach with specific focus on the adult educational theories of sensory stimulation, cognitive, reinforcement, facilitation and andragogy.

2.5 CONCLUDING REMARKS

From the discussions pertaining to EI in this chapter it would be difficult to claim that any one EI domain is more important that the other. Developing an individual's EI is fundamentally a process of mastering ones interpersonal and intrapersonal management skills, whereas personality change is a more long term evolutionary process. Based on the discussions in this chapter, logic would suggest that mastering intrapersonal management could be the first step in addressing the driver attitude behaviour phenomenon. The personal development influences and opportunities relating to EI and its impact on driver performance will be discussed in chapters 3 and 4 of this study.

Although the VIR demographics are not conclusive in terms or the role EI may have played in these incidents, it does however provide a platform for a general understanding demographics of the VIR and highlights possible areas for further research.

CHAPTER 3
RESEARCH DESIGN

3.1 INTRODUCTION

This chapter is intended to describe and explain the research design employed in this study to address the research objectives. The research approach and methods employed for both the quantitative and qualitative phases of the research will be discussed as will the rationale and procedures for the design of this study.

3.2 RESEARCH APPROACH

When investigating a preconceived phenomenon, researchers work from a chosen paradigm and therefore have a specific orientation towards the investigation of the chosen issue (Mertens cited in Marais, 2009:18). The research adopted a particular ontological stance and epistemological assumptions to direct the methodologies used in this study. According to Girod-Seville and Perret (cited in Thietart, 1999: 14-19) epistemology is the study of knowledge and guides the research methodology employed to investigate the phenomenon. Lincoin and Guba (cited in Marais 2009:18) suggest that ontology refers to the nature of reality and in post-positivism, the ontological stance depicts critical realism. This research study aims to explain the social phenomenon using critical enquiry and interpretation. The research employed a critical enquiry methodology for the quantitative phase of the study (first stage; chapter 4) and an interpretative methodology for the qualitative study (chapter 5).

3.3 RESEARCH METHODS

In order to achieve the stated objectives of this study, the researcher employed a mixed-method approach. Hesse-Biber (2010: 8-20) and Creswell (2007: 53-100) suggest that by implementing both quantitative and qualitative measures in researching a phenomenon is a better option than viewing the issues from a single perspective. The use of a mixed method approach would present a more balanced representation of the phenomenon and support method validity to the findings and conclusions.

3.3.1 Quantitative investigation

3.3.1.1 Sampling

Sampling for this study followed a convenience sampling approach for the selection of the participants from the Eskom NWR Bloemfontein operational area
(O'leary, 2004: 108). Only participants who by virtue of their job descriptions are required to drive a vehicle in the exaction of their duties were considered for this study.

The Eskom NWR staff numbers for the Bloemfontein area of operation exceeds 800, but this study is directed at the approximately 580 staff who are required to drive a vehicle as part of their job descriptions. Although it is appreciated that many of the staff excluded from this study may drive vehicles in a private capacity however, such staff are excluded from this research as there is firstly no process or requirement to monitor their private driving performance and secondly there is no authority to implement remedial actions for improvement of private driving practices.
Participation in this study was approved but not mandated by management, consequently participation was totally voluntary. An invitation to participate was directed to all qualifying staff of which 60 of a possible 580 (Bloemfontein operational area) indicated their willingness to participate. The limitations associated with this

sampling approach are that the sample size cannot be considered as representative of the target population. The 60 voluntary participate represent 10.34% of the total target population. The demographic details of the sample group are as listed in Table 3.1 below.

Table 3.1: Demographic information of the sample group

	N	frequency	Percentage Of total sample
GROUPS A&B			
A= Accident		25	41.66%
B= Non-accident		35	58.33%
GENDER (GROUP A)			
Male		18	30%
Female		7	11.66%
GENDER (GROUP B)			
Male		16	26.66%
Female		19	31.666%
RACE (GROUP A)			
White Male		15	25%
Black Male		2	3.33%
White Female		7	11.66%
Black Female		0	0
Other Female		1	1.66%
RACE (GROUP B)			
White Male		10	16.66%
Black Male		8	13.33%
White Female		8	13.33%
Black Female		9	15%
Other Female		0	0
AGE (GROUP A)			
20 - 30			
Male		2	3.33%
Female		2	3.33%
31 - 40			
Male		1	1.66%
Female		3	5%
41 - 50			
Male		2	3.33%
Female		1	1.66%
51 – 60>			
Male		13	21.66%
Female		1	1.66%

AGE (GROUP B)			
20 - 30			
Male		4	6.66%
Female		7	11.66%
31 - 40			
Male		2	3.33%
Female		2	3.33%
41 - 50			
Male		2	3.33%
Female		5	8.33%
51 – 60>			
Male		8	13.33%
Female		5	8.33%

Table 3.1 also illustrates the distribution of the sample group in terms of group (Group A = Vehicle incident; Group B = No vehicle incident), gender, race, and age. The standard deviations in all items are reasonably small indicating an acceptable variance in the sample group.

3.3.1.2 Eskom NWR driver demographics

In an attempt to explain and analyse driver competence and behaviour it is critical to gain an overview of the demographics of the Eskom NWR drivers. Table 3.1 described the demographic breakdown of staff employed in the Eskom NWR and gives a further breakdown of the demographics of those expected to drive as part of their conditions of employment.

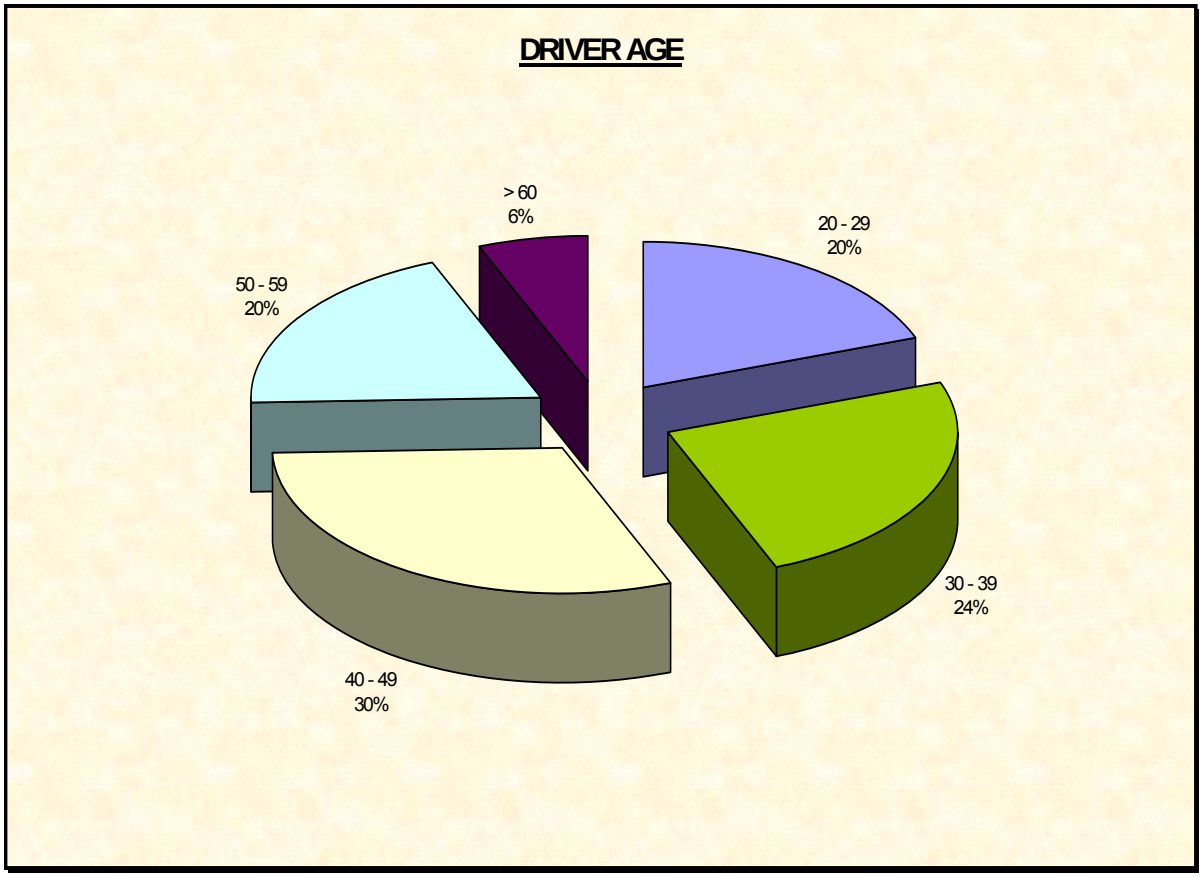
Table 3.2: Eskom NWR driver demographics

AGE GROUP	GENDER			
	MALE TOTAL	MALE DRIVERS	FEMALES TOTAL	FEMALES DRIVERS
18 - 20	4	4	2	2
21 - 30	167	167	174	167
31 - 40	292	223	180	144
41 - 50	618	465	101	48
51 - 60	476	357	60	45
61 - 65	54	40	7	5
TOTAL	1611	1256	524	411

3.3.1.3 Age

Figure 3.1 below indicates that 30% of accidents are attributed to persons between the ages of 40 – 49 closely followed by the age groups 30 -39. These statistics are significant in so far as the high vehicle incident rate (VIR) age groups would generally be expected to be persons with lot of driving experience and that the accident rate in these age groups could be expected to be reasonably lower.

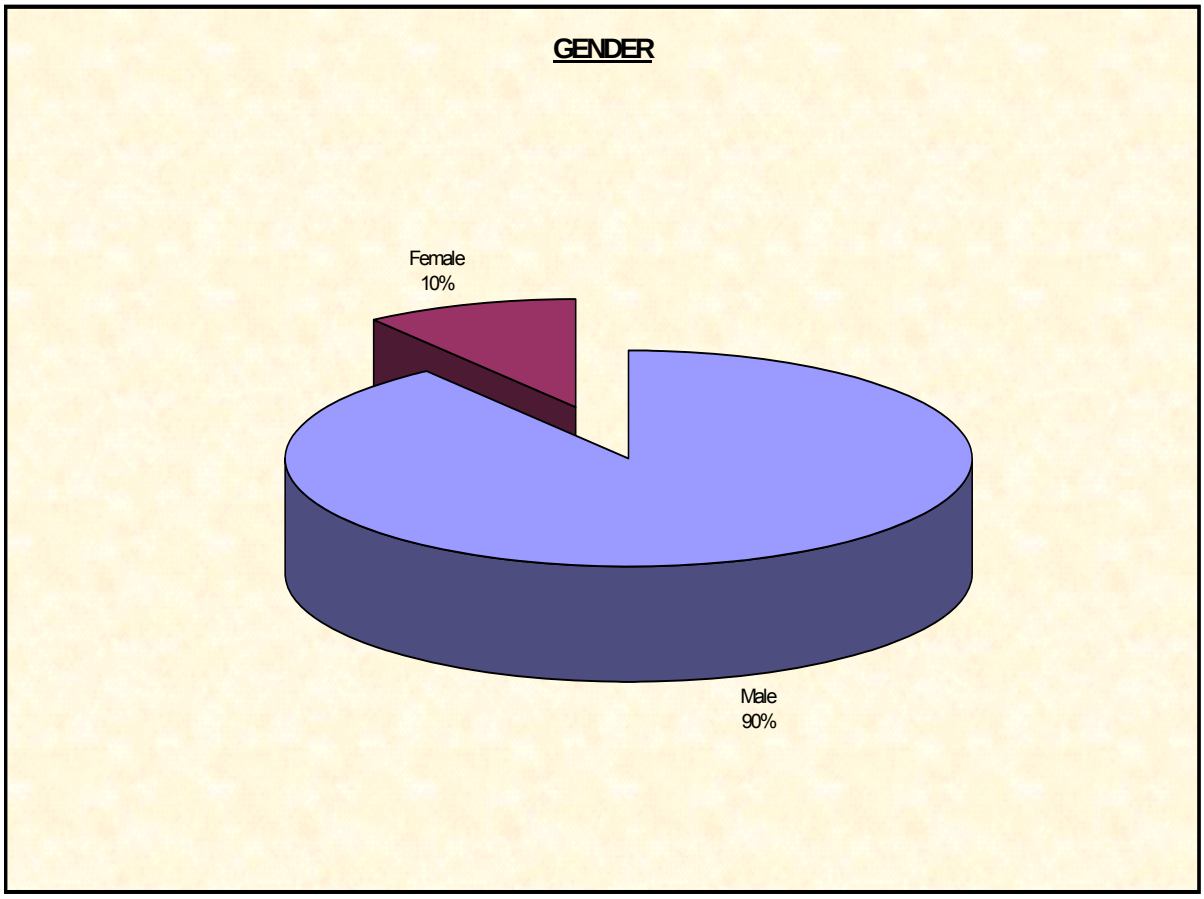
Figure 3.1: Driver Age



3.3.1.4 Gender

The gender statistics reflected in Figure 3.2 shows that 90% of vehicle incidents are attributed to male drivers who represent 75.34% of the driver population in the Eskom NWR. These statistics may suggest that driver attitude or EI may have a greater impact on the male population. This theory will be tested in the quantitative phase of the study.

Figure 3.2: Driver gender



3.3.1.5 Research instruments

This study made use of the EQ-Map to ascertain the EQ levels of the participants (cf. Addendum A). Each of the 60 participants were required to complete the standard EQ-Map test after which the researcher used the data to analyse both the individual and group EQ. This data was used to identify any correlations between the EQ score and age, gender, and group A & B within the sample group. The relationships between cause and effect were intended to explain relationships between variables, concepts, and propositions through inference and deductive reasoning in order to provide insight into the phenomena.

The EQ abilities that were evaluated by the EQ-Map were clustered by the researcher according to the EI domains shown in Table 3.2.

Table 3.3: EQ Map Cluster

EI DOMAINS	ABILITIES	NUMBER OF ITEMS
Emotional self- awareness	• Recognise your emotions and emotional triggers • Self- regard	8
Emotional social awareness (others)	• Emotional Awareness of others	8
Understanding & using emotions	• Compassion (Empathy) Interpersonal Connections • Trust	8
Managing your own emotions	• Creativity • Resilience • Personal Power • Integrity • Constructive Discontent • Emotional Expression	8

Source: (Adapted from Oosthuyse 2003:149)

The measurements of the EQ-Map are part of the quantitative approach, given that the results are numerical. The participants had to complete each scale of the EQ-Map by placing an X in the box which best describes their emotional response to each question; 1 = Never, 2 = Sometimes, 3 = Uncertain, 4 = Often, 5 = always. The final scoring was calculated by totalling the scores listed in each column. The column scores were then divided by 40 in order to ascertain an average percentage score for each of the domains. Each column represents one of the four domains and a score of 30 would suggest that the participant has an acceptable emotional intelligence level in that specific domain.

This numerical analysis of the data was conducted on both an individual and total sample basis. This approach enabled the researcher to review and compare responses from both an individual and group perspective. The degree of response bias could also be measured with participants of “Group A” by comparing their qualitative contribution to the quantitative response.

3.3.1.6 Rationale for the choice of instruments

According to Cooper & Schindler (2006: 292 - 294) reliability is the degree to which any specific measure, given the same conditions will consistently produce the same result. The EQ-Map is a standardised instrument for the measure of an individual’s EQ and has been used in numerous research studies.

The EQ-map was also selected for this investigation because it was the most practical instrument available. While scientific requirements call for measurements to be reliable and valid, operational requirements call for measurements to be practicable. Practicality is the economy, convenience and interpretability of instruments for psychological tests (Cooper & Schindler, 2006: 323).

- **Economy:** The EQ-Map is a self-reporting questionnaire and is efficient in terms of time, effort and money as it is readily available and easy to score.

- **Convenience:** The EQ-Map is simple to administer as it offers a relatively short time for participants to completion and the researcher to interpret.

3.3.1.7 Research procedure

This quantitative study was approached from a positivistic paradigm and focused on precise measurements in a systematic and standardised research procedure of specific controlled aspects of phenomena or events and people (Cooper & Schindler, 2006: 141). The results of quantitative studies are in numerical form and are statistically explained by the researcher who endeavoured to maintain objectivity of measures in order to ensure that the data was not contaminated through personal involvement (Jansen, 2007: 2; Thomas, 2003: 2).

The researcher used the quantitative results to present emerging theory, knowledge, attitudes and perceptions in a replicable research that attempts to eliminate the human factor as far as possible. The researcher attempted to remain fair, honest, unbiased and truthful. Theory in quantitative research is often causal if the relationship is one of cause and effect, and deductive, as it tries to explain relationships among variables, concepts, definitions and propositions through inferences and inductive conclusions advanced to explain and provide insight into phenomena (Cooper & Schindler, 2006: 47, 141, 152, 198).

In order to quantitatively establish the extent to which EQ may influence driver behaviour, an exploratory quantitative study was conducted. The purpose of this exploration was to gain insight into the phenomenon and identify areas which may require further research. (Cooper & Schindler, 2006: 139, 140, 143). This study was necessary as the researcher could not find any previous studies which specifically link the EI domains to driver behaviour.

Both inductive and deductive reasoning was used in this multi-method investigation. The deductive approach of this quantitative phase, started with an abstract, logical relationship among concepts of the theoretical framework regarding EI, and driver behaviour listed in Chapters 2 and 3, respectively. The inductive quantitative process of understanding and interpreting the phenomena in context will be presented in this chapter. The quantitative data will be analysed against theory in order to identify possible trends or relationships between EI and driver behaviour.

3.3.1.8 Statistical analysis

The quantitative data was collected through the application of a standardised self-report questionnaire EQ Map: (Cooper and Sawaf: 1997: 273-288) intended to measure the EI of participants. The data was analysed by the Department of Statistics at the University of the Free State who also advise on the data however, the final accountability for the analysis of the data remains with the researcher.

3.3.2 Qualitative investigation

3.3.2.1 Research setting and role of the researcher

The qualitative phase of this study included both personal interviews and focus group discussions. The focus group discussions where conducted in the Eskom Bloemfontein head office conference venue. The venue time and date for the focus group discussions were determined though a negotiated process where the participants interests, logistics and costs were considered. The participants were briefed both verbally and in writing as to the logistics and process of the focus group discussion. The focus group discussions commenced by once again discussing the purpose and process on the session where the participants were afforded an opportunity to question and influence the process of the discussion.

The personal interviews were mostly conducted at the participant's place of work at a time and date most convenient to the participant. This approach was adopted as a measure to ensure minimal disruption to the participants normal work commitments. Participants were briefed both verbally and in writing prior to the interview as to the intent and process of the interview. The purpose and process was once again discussed at the beginning of the interview where the participants were afforded the opportunity to influence the process.

3.3.2.2 Establishing roles

The intent to conduct this study into the Eskom North Western Region driver performance was discussed with the safety risk manager who agreed to the study under the proviso that participation would be on a voluntary bases and that information published in the study should not contravene the Eskom protection of information policy.

3.3.2.3 Selection of participants

A purposive approach was employed when 25 participants who were deemed to be the best qualified to provide the richest and most descriptive data relating to vehicle incidents were selected for the interview phase. Six of the twenty five participants took part in focus group discussions whilst the remaining nineteen participated in the personal interview phase. All 25 participants were Eskom NWR personal who have been involved in a vehicle incident over the past two years. Cooper and Schindler (2008: 165) suggest that it is not a requisite to accurately pre-determine the number of participants required because qualitative interviews and focus group investigations should continue until theoretical saturation had been reached. This sampling approach could be susceptible to bias because the intention of this study was not to generalise, but to develop new insight into the relationships between the variables, predominantly through an in-depth understanding of the personal experiences of reality by the participants, the participants were selected prior to the intervention.

This researcher placed a different focus on the number of participants in so far as participants were selected based on their experience and availability rather than information saturation. The reason for this approach was purely logistical and the researcher argues that if more participants were required then they could have been identified and included as the process progressed.

3.3.2.4 Data collection methods

The qualitative data collection methods used in this study included focus group discussions and semi-structured individual interviews, where the researcher attempted to capture the emotions, feelings, experiences and perceptions of the participants in order to better understand the phenomenon of driver behaviour and explore possible relationships between EI domains and driver behaviour, and the roles they may play in influencing driver behaviour.

According to Vanderstroep and Johnston (2009: 224-230), qualitative study involves the analysis of language and non-verbal communication through observations and interviews, analysis of current and historical documents and even the analysis of oneself . The researcher reports on the data he/she has gathered.

This process was particularly useful in obtaining data from reports on all vehicle incidents recorded in the Eskom NWR . This data provided information such as driver demographics, accident classifications, accident frequency, average accidents per kilometre travelled, weather conditions and so on. The data was used to inform both the qualitative and quantitative phases of the research as well as the data triangulation and analysis phase of the study.

- **Focus group discussions**

The focus group discussions were facilitated though the selection of **six participants** from the Eskom NWR who have been involved in a vehicle accident or incident over the past two years. The group discussion was conducted by the researcher who made use of a group discussion guide (Addendum B.) consisting of primarily open ended questions to guide the group though the process. Although a discussion guide was used, the researcher focused on a natural process and did not try and force pre-conceived ideas and concepts on the group. The researcher was sensitised to the disadvantages associated with the focus group approach and through the use of practiced facilitation and communication skills, ensured maximum participation of all participants (Brannen and Halcomb, 2009: 69). The focus group response proved to be useful in so far as as the participants first discussed the questions before reaching a conclusion. The same questions were posed to other participants in the personal interviews stage of the study; their reactions to the questions tended differ somewhat from that of the focus group.

- **Personal interviews**

The personal interviews approach used can best be described as a “guided interview” (Van der Stroep & Johnston, 2009: 225-233). The guided interview follows an outline of questions, but not all of the prescribed probes, transitions, and follow ups are established prior to the interview. The researcher had the freedom to deviate from the interview questions as needed to pursue serendipitous findings and fruitful directions.

The personal demographics of all participants were sourced from the personnel data base and pre-captured on the individual data records. The details where confirmed with participants at the beginning of the interview.

The interviews were conducted at the participant's workplace. Appointments were made for a time that was convenient to each participant and an explanation as to the purpose of the study was discussed with the participant..
On commencement of the interview, the participants were again reminded as to the purpose of the study and that the answers needed to reflect their personal experiences. Permission was asked from the participants to audio tape-record their responses for transcription and coding purposes.

The participants were assured of the confidentiality of their identity and the anonymity of their contributions, being referred to only by a number once recording started. Notes regarding non-verbal cues were also taken during the interviews. The participants were debriefed after the interviews by a brief discussion of uncertainties and the researcher's interpretation of their contributions, which gave them a chance to set misinterpretations right or elaborate on their contributions. The researcher furthermore expressed his appreciation for their contributions and assured them that the data would be referred back to them for confirmation that they had been interpreted correctly.

3.3.2.5 Recording of data and data analysis

The analysis of the qualitative data (interviews and focus group discussions) was an on-going process. The data were recorded and interpreted according to the participants' perceptions, values, attitudes, feelings, and experiences. Codes were allocated to phrases based on the contextual meanings of the phrases. Key factors, differences and/or dominant themes and relationships between themes that emerged were then inductively identified and categorised according to the interpretative philosophy (Creswell, 2007, 47-160) in order to understand how the participants interpreted driver behaviour

The different themes were *a priori* coded according to the topics investigated to analyse the content of the participants' reactions to the open-ended questions of the semi-structured interviews and focus group discussions to identify specific contributors to driver behaviour. The data analysis then proceeded from 'open' coding, to axial coding and then to selective coding and verification to generate an emerging understanding, explanation or substantive theory in line with the research question.

The following strategies where employed to ensure the quality of data:

3.3.3 Reliability by triangulation

The reliability of both sets of data gathered by the mixed-methods approach has been enhanced by triangulation. Two types of triangulation were applied:

- Method triangulation

  The use of **more than one data-collection method** to gather information. In this part of the investigation, focus group discussions and semi-structured interviews were used as qualitative approaches in conjunction with quantitative methods to yield reliable data.

- Data triangulation

  Data triangulation refers to the use of **two or more kinds of data sources**. In this study data triangulation involved the personal perspectives of participants obtained by focus group discussions as well as semi-structured interviews.

- Audit ability

According to Giddings and Grant (2009: 127) "Audit ability" is achieved by providing a clear account of the process of data collection and analysis. To this end the researcher has shown how the coding system was used to establish categories and how in turn these contributed to the concepts presented in the findings. The keeping of all recordings and transcriptions for a period of 1 year included;

- **Ethical considerations**

The rights and dignity of participants are always of paramount and should be protected in the design of the research. To this end the researcher has discussed the process and confidentiality issues with the participants where it was explained that the information recorded is confidential, and no one else except the principle researcher will have access to source information. For reporting purposes, no-one will be identified by name. The name of the participant will be replaced with a number and only the researcher will know what each participant's number is. The records of the interview and questionnaire will be stored under lock and key for a pre-determined period after which time these records will be destroyed. The participants will furthermore be protected by the researcher's strict adherence to the confidentiality agreements signed with the participants as well as the de-identification of any raw data that may be shared with other involved parties. Source information will be secured in a safe manner and will be destroyed after one year or any other term agreed to by relevant authoritative bodies.

3.4 CONCLUDING REMARKS

The research design will inform the methods and processes employed in the quantitative and qualitative phases of the research, the results of which will in turn direct the content and format of chapter 6 wherein the synthesis of findings and recommendations will be reported.

CHAPTER 4

QUANTITATIVE INVESTIGATION:

4.1 INTRODUCTION

The purpose of this chapter is to determine whether EI influences driver attitude and performance in the Eskom North Western Region (NWR) by presenting the findings of the quantitative empirical investigation. The chapter will discuss the quantitative methodology, instruments used and the processes followed by the researcher in the gathering and analysis of the quantitative data as well as reporting the findings and making recommendations.

In order to provide a substantial report on possible relationships between EI and driver behaviour, it was necessary to first undertake a literature study to provide a theoretical bases upon which the qualitative enquiry could be founded (Chapter 2). To achieve the objectives of the study, a pragmatic multi-method mode of inquiry was conducted. This multi-method study firstly employed a positivistic quantitative approach followed by a post-positivistic qualitative approach (described in Chapter 4). These approaches are complementary in so far as the quantitative phase of the study provides a statistical bases for the findings whereas the qualitative phase serves to provide a narrative perspective which helps the researcher to gain a better understanding of the phenomenon (Hesse-Biber, 2010: 1-24).

This chapter will provide a quantitative perspective regarding possible relationships between EI and driver performance in the Eskom NWR. The methodology, data collection instruments and data analysis that emerged from the quantitative study will also be presented in this chapter.

4.2 REPORTING OF DATA

4.2.1 Introduction

The focus of this quantitative study was to establish whether there is any correlation between EI and Driver Performance (VIR) in the Eskom NWR. The quantitative data findings, deductions and inferences will now be presented.

4.2.2 Results of EQ Map

The raw data from the EQ-Map for each of the 60 participants were analysed. The data were used to calculate the mean scores for each of the EI domains (Table 3.4). The totals of each of the EI domains of participants were calculated and converted to a mean score for comparative purposes. The data from the EQ score were used to determine the correlations between each of the EI domains, The statistical department of the University of the Free State applied the SPSS data processing program to calculate the correlations.

To compute the correlations in this exploratory study, the participants' EQ scores were used as the independent variable that was manipulated by the researcher. Linear regressions were then used to determine the correlation tendency between EQ and driver behaviour.

The results obtained from the EQ Map are presented in Table 4.1 below:

Table 4.1: EQ Scores of Eskom drivers

PARTICIPANT NUMBER	Gen.	P.G	AGE	Grp.	SELF AWARENESS	SOCIAL AWARENESS	USING EMOTIONS	SELF MANAGEMENT
1	M	W	55	A	29	23	25	29
2	F	W	44	A	29	31	29	31
3	M	W	57	A	21	27	25	30
4	F	W	30	A	31	27	29	31
5	M	B	62	A	22	23	29	28
6	M	W	45	A	28	30	28	28
7	M	W	55	A	22	16	23	28
8	M	W	55	A	35	37	38	39
9	M	W	36	A	38	39	37	34
10	F	C	38	B	33	33	34	35
11	F	W	47	B	23	33	20	32
12	M	W	53	A	30	27	27	30
13	M	W	62	B	28	26	28	32
14	F	W	41	B	27	26	26	29
15	M	W	51	B	33	21	23	31
16	M	B	54	B	26	23	19	26
17	F	W	38	A	39	29	29	35
18	M	W	55	B	31	29	32	33
19	M	W	47	B	35	30	34	36
20	F	W	54	A	28	32	31	32
21	M	B	56	A	29	23	28	33
22	M	W	63	A	31	30	34	32
23	F	W	30	A	32	29	34	32
24	M	B	36	B	31	32	31	32
25	F	W	50	B	31	33	29	29
26	F	W	51	B	28	24	28	30
27	M	W	54	A	28	32	28	31
28	M	B	52	B	39	34	39	38
29	F	W	37	B	26	29	28	23
30	F	W	51	B	29	34	31	27
31	M	W	50	A	35	38	39	40
32	M	B	28	B	17	24	31	30
33	M	B	26	B	30	30	29	29
34	M	W	29	A	24	28	29	26
35	M	W	29	B	34	30	33	35
36	F	B	49	B	25	31	23	25
37	F	W	41	B	25	26	22	27
38	M	B	55	B	28	19	22	34
39	F	W	58	B	31	28	27	32
40	M	W	55	A	33	27	23	31
41	F	W	36	A	26	27	38	28
42	M	W	53	A	31	32	31	34
43	M	W	37	B	39	38	37	40
44	M	W	56	A	32	33	30	35
45	M	W	26	A	28	25	29	23
46	M	W	56	B	34	31	35	33
47	M	W	51	A	24	24	25	27
48	M	W	55	B	31	32	33	31
49	F	W	53	B	31	37	31	30
50	M	B	55	B	34	30	32	35
51	F	W	56	B	28	33	23	31
52	F	W	36	A	27	19	20	25
53	F	B	20	B	29	29	27	32
54	F	B	21	B	33	33	31	32
55	F	B	21	B	32	33	31	31
56	F	B	21	B	37	29	26	34
57	M	B	20	B	31	25	26	31
58	F	B	21	B	33	33	32	37
59	F	B	22	B	38	38	32	40
60	F	B	23	B	28	24	25	32
					1800	1748	1748	1886
					75	72.83	72.83	78.58

4.2.3 Correlation between the EI levels of Group A and VIR

An analysis was conducted between the EI levels of the Group A participants, who are by virtue of their personal VIR consider accident prone, and the related number of vehicle incidents. This analysis was intended to determine if there is any relationship between EI and the likelihood of vehicle incidents. Table 4.2 presents the correlation analysis between EI vehicle incidents.

Table 4.2: Correlation between EI and vehicle incidents

	Self Awareness	δ	Social Awareness	δ	Emotional Awareness	δ	Self Management	δ
Number of incidents	-0.69683**	0.30245	-0.772509009**	0.27004	-0.641922252**	0.2958	-0.683575574**	0.2539

Significance: * (p = 0.05) (r ≥ 0.31)

** (p = 0.01) (r ≥ 0.42)

Table 4.2 indicates that there is a significant negative correlation (99%) between the EI domains and number of vehicle incidents. It can therefore be deduced from this data that the lower the EI, the higher the likelihood there is of vehicles incidents.

This EQ level assessment is significant in so far as it supports the concept that adult education in emotional intelligence could improve an individual's EI level and in so doing may reduce the risk of vehicle incidents.

4.2.4 Gender analyses

A gender analysis was conducted to determine if there is any difference between gender groups in terms of EQ. Figure 4.1 suggests that there no significant difference between gender and EQ. This deduction is supported by the t-Test presented in Table 4.3

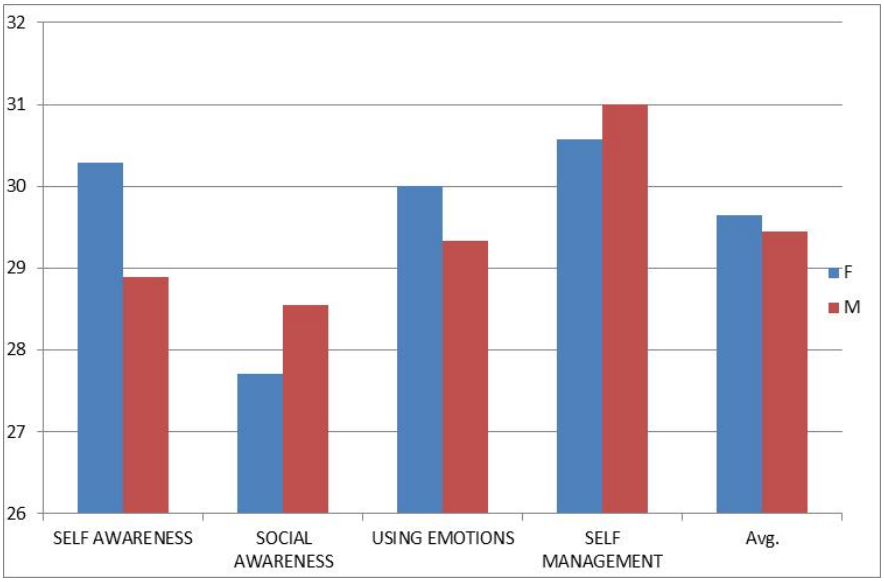


Figure 4.1: Gender analysis

Table 4.3: t-Test (Male – Female)

Group Statistics					
	gender	N	Mean	Std. Deviation	Std. Error Mean
Self-Aware	Male	34	30.03	5.120	.878
	Female	26	29.96	4.005	.785
Social-Aware	Male	34	28.47	5.462	.937
	Female	26	30.00	4.243	.832
Use Emotions	Male	34	29.76	5.105	.876
	Female	26	28.31	4.398	.862
Self - Management	Male	34	31.88	4.013	.688
	Female	26	30.85	3.749	.735

Significance: * (p = 0.05)

** (p = 0.01)

The significance of the gender analysis is that there is no need to adapt EI education and training to accommodate gender.

4.2.5 Race analysis

The analysis between race groups was intended to identify if there is a significant difference between driver race groups in terms of EQ. As indicated in Figure 4.2 below there is no significant difference between race groups and EQ and as such it may be deduced that race is not a significant contributor to the VIR.

As with the gender analysis, the race analysis suggests that there is no need to differentiate between race when developing an education and training initiatives to address EI development.

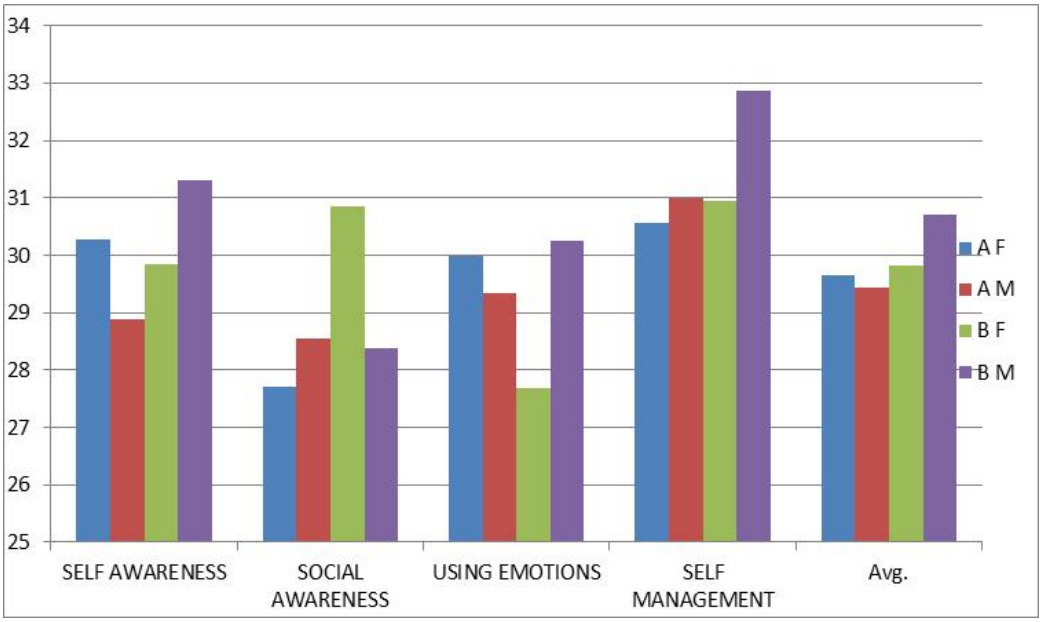


Figure 4.2: Race analysis

4.2.6 Age analysis

The age correlation analysis was conducted to determine the difference between the EQ of the various age groups and whether or not this factor may be a contributing to the VIR. As can be deduced from the One Way analysis ANOVA (Table 4.4) there is

no significant difference between age and EQ. One can deduce from this analysis that age would probably not play a significant role in the VIR.

Table 4.4: One way ANOVA for the differences between age groups and EI

Descriptives										
							95% Confidence Interval for Mean				Between-Component Variance
			N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Min	Max	
SelfAware	20-35yrs		15	30.47	5.125	1.323	27.63	33.30	17	38	
	36-50yrs		17	30.41	5.233	1.269	27.72	33.10	23	39	
	51-65yrs		28	29.50	4.069	.769	27.92	31.08	21	39	
	Total		60	30.00	4.632	.598	28.80	31.20	17	39	
	Model	Fixed Effects			4.688	.605	28.79	31.21			
		Random Effects				.605[a]	27.40[a]	32.60[a]			-.803
SocAware	20-35yrs		15	29.13	3.944	1.018	26.95	31.32	24	38	
	36-50yrs		17	30.82	4.965	1.204	28.27	33.38	19	39	
	51-65yrs		28	28.11	5.370	1.015	26.02	30.19	16	37	
	Total		60	29.13	4.990	.644	27.84	30.42	16	39	
	Model	Fixed Effects			4.940	.638	27.86	30.41			
		Random Effects				.826	25.58	32.69			.762
UsEmot	20-35yrs		15	29.60	2.720	.702	28.09	31.11	25	34	
	36-50yrs		17	29.65	6.194	1.502	26.46	32.83	20	39	

	51-65yrs		28	28.57	4.872	.921	26.68	30.46	19	39	
	Total		60	29.13	4.827	.623	27.89	30.38	19	39	
	Model	Fixed Effects			4.882	.630	27.87	30.40			
		Random Effects				.630[a]	26.42[a]	31.84[a]			-.810
SelfManagement	20-35yrs		15	31.67	4.082	1.054	29.41	33.93	23	40	
	36-50yrs		17	31.12	5.048	1.224	28.52	33.71	23	40	
	51-65yrs		28	31.50	3.073	.581	30.31	32.69	26	39	
	Total		60	31.43	3.903	.504	30.43	32.44	23	40	
	Model	Fixed Effects			3.965	.512	30.41	32.46			
		Random Effects				.512[a]	29.23[a]	33.64[a]			-.751
a. Warning: Between-component variance is negative. It was replaced by 0.0 in computing this random effects measure.											

Figure 4.3 offers a graphical representation of the EQ score between age groups. As can be seen, there is no significant difference of score between the age groups and the EI domains.

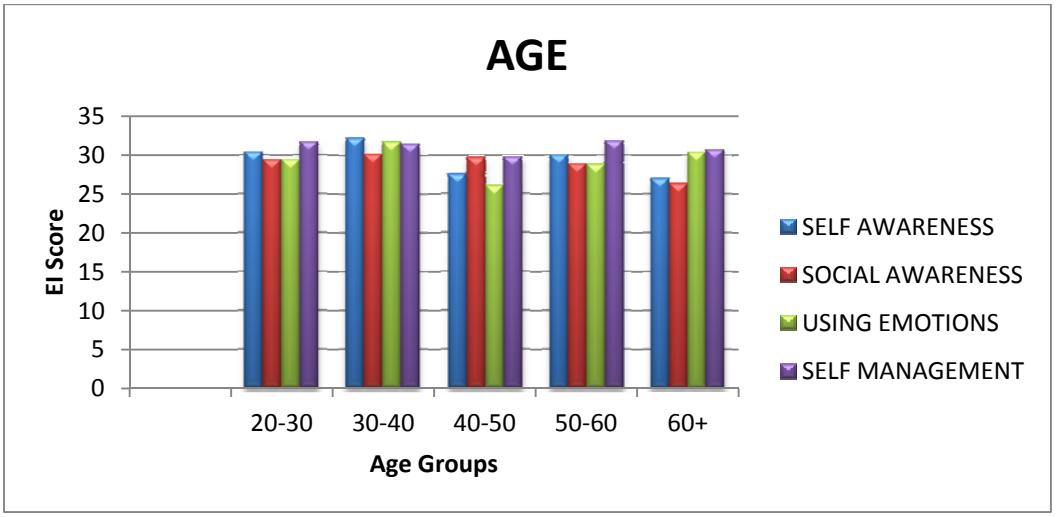


Figure 4.3: EI - Age comparisons

The significance of the age group analysis is that it suggests that there is no need to differentiate EI development on the bases of age.

4.3 SUMMARY OF QUANTITATIVE DATA

Table 4.5 SUMMARY OF QUANTITATIVE FINDINGS

EI DIMENSIONS MEASURED BY THE QUANTITATIVE INVESTIGATION	FINDINGS
COMPARATIVE ANALYSIS BETWEEN EQ LEVELS AND NUMBER OF INCIDENTS	
The EQ levels of Group A participants, who are by definition of this study, deemed to be accident prone were analysed to determine if there is any correlation between EQ levels and vehicle incidents.	➢ The results of this analysis show that there is a significant correlation between EQ levels and vehicle incidents. This is significant in so far as it can be deduced that should education and training improve the levels of EQ, the risk of vehicle incidents may decrease exponentially.

COMPARATIVE EI ANALYSIS BETWEEN GENDER	
IE –GENDER COMPARISONS This measure was intended to identify if there is any correlation between EQ and gender that may help to identify its significance to driver behaviour. The EQ dimensions measured and purpose are listed below:	➢ The overall EI – Gender comparisons (Figure 4.1; Table 4.3) indicate that there is no significant difference between EQ – and gender. This data suggests that gender would not have a significant influence on driving behaviour and VIR.
➢ **Emotional self-awareness** Participants rating of their emotional Self-awareness.	➢ Females scored marginally higher than males on the social awareness scale (Figure 4.1; Table 4.3). This would tend to suggest that females are generally more in touch with their self-emotions as are their male counterparts. The difference between EQ and gender however is insignificant and should not have a significant contribution to the VIR.
➢ **Emotional social awareness** The ability to recognise, understand and react to the emotional needs of others.	➢ Males scored higher than females on the social awareness scale although the overall score in this domain was somewhat lower than the other domains (Figure 4.1). The difference between EQ and Gender however would suggest that gender EQ should not be

	a significant contributor to the VIR.
➢ **Using Emotions** The understanding and use of emotions to build and maintain good relationships with others.	➢ The overall score relating to "using emotions" was relatively high with males slightly outscoring the females. This data would suggest that the gender should not significantly influence the VIR
➢ **Managing own emotions** The ability to proactively identify and manage your own emotions and emotional triggers.	➢ The measurement of emotional management is arguably the most significant contributor of the four EI domains considering it's possible impact on driver behaviour. The emotional management or "EQ self-management" test as related to gender outscored the other EI domains. There were no significant correlations between EQ which suggests that gender should not have a significant influence on driver behaviour.
COMPARATIVE EI ANALYSIS BETWEEN POPULATION GROUPS	
EI – RACE GROUP COMPARISONS This measure was intended to identify if there is any difference between EQ and race that may help to identify its significance to driver behaviour. The EI dimensions measured and purpose are listed below:	➢ There is also no significant correlation between EQ and race (Figure 4.2) which suggests that the race EI measure within the sample group is not a contributing factor to driving performance.

➢ **Emotional self-awareness** Participants rating of their emotional self-awareness	➢ Although the self-awareness rating in regard to EQ - race shows no significant EQ difference between white and black female or male (Figure 4.2). It is interesting to note that white males score the lowest in this domain.
➢ **Emotional social awareness** The ability to recognise, understand and react to the emotional needs of others.	➢ There is no significant correlation between EQ and race indicating that this domain offers no evidence to support the concept that race could play a role in risk to the VIR
➢ **Using Emotions** The understanding and use of emotions to build and maintain good relationships with others	➢ The data analysis reflected in Figure 4.2 suggests that participants in the sample group scored fairly evenly with the possible exception of black females who scored were lower. There is no significant difference on this domain which suggests that the participants within the sample group would not impact on the VIR.
➢ **Managing own emotions** The ability to proactively identify and manage your own emotions and emotional triggers.	➢ The management of emotions when viewed from a EQ-Race perspective did not show any significant difference. This would indicate that managing emotions would not be a significant contribution factor to the VIR.

COMPARATIVE EI ANALYSIS AGE GROUPS	
EI – AGE GROUPS This measure was intended to identify if there is any correlation between EQ and age groups that may help to identify its significance to driver behaviour. The EI dimensions measured and purpose are listed below:	➢ There is no significant difference between EQ and age. It can therefore be deduced that age does not constitute a significant risk to the VIR. (Table .4.4)
➢ **Emotional self-awareness** Participants rating of their emotional self-awareness	➢ There is no significant difference between EQ and age (Table 4.3; Figure 4.3) it can therefore be deduced that the EI - emotional self-awareness domain offers no evidence that age would contribute to the VIR. It is however interesting to note that the EQ- emotional self-awareness scored the lowest of the domains
➢ **Emotional social awareness** The ability to recognise, understand and react to the emotional needs of others.	➢ As with the other domains, the EQ - social awareness shows no significant difference and provides no evidence that it may impact on the VIR.
➢ **Using Emotions** The understanding and use of emotions to build and maintain good relationships with others	➢ Using emotions scored high in the 51 and 55 age groups. All the other age groups also performed above average (Figure 4.3) however the one way ANOVA (Table

	4.4) indicates that there is no significant difference between EQ and the use of emotion domain that would suggest any significant influence on the VIR.
➢ **Managing own emotions** The ability to proactively identify and manage your own emotions and emotional triggers.	➢ As with "Using Emotions" emotional self-management is at its best between the ages of 51 and 55. The remaining age groups are fairly constant (Figure 4.3). Table 4.4 suggests that there is no significant difference between EI-age from a self-management perspective and that age is unlikely to impact on the VIR.

4.4 CONCLUDING REMARKS

This chapter addressed the quantitative analysis of the investigation conducted by means of a questionnaire in order to provide insight into the influence of emotional intelligence on driver behaviour, and how this may impact on the VIR.

The measure of the EQ levels between the participants in Group A and the VIR offers the most compelling evidence that emotional intelligence may in fact impact on the attitude and behaviour of drivers. This deduction is supported by the theory discussed in chapter 2 (cf. 2.2.) and qualitative findings discussed in chapter 4 (cf.5.2; 5.5.2

The measure between the accident prone group "Group A" and that of the incident free (last two years) group "Group B" provides important information when viewed against the EQ level measure in so far as it suggests that although high EQ levels may reduce the risk of incidents, it does not mean that the risk can be totally eliminated.

The lack of any significant difference between EI and gender, age or race virtually eliminates these factors in the design of an EI education strategy. Gender age and race issues need only be considered for programme design when considering any unique need such as access, language and fog index.

CHAPTER 5

QUALITATIVE INVESTIGATION REPORT OF DATA

5.1 INTRODUCTION

The objective of this chapter is to further explore whether the EI of divers may have an influence on their driving behaviour and performance. This chapter represents the qualitative investigation phase of this study.

The qualitative study had been applied in the belief that using only a single method approach to this research would not be sufficient to explain the full complexity of the experiences of human beings. By using the qualitative methods, the researcher attempted to develop substantive theory grounded in the experiences of Eskom employers who are expected to drive a vehicle as part of their duties, and explore the subjective worlds of multiple realities (Hesse-Biber, 2010: 17).

5.2 REPORTING OF DATA

5.2.1 Introduction

As already discussed in Chapter 1, the participants to this study were selected from a logistical viewpoint rather than a progressive theoretical situation approach due to the resource limitations posed by time, cost and the demographics distribution of the target population, This situation was further exacerbated by the fact that participation was totally voluntary and only 25 participants were available to take part on this phase of the study. This approach resulted in a high degree of feedback repetition. Although all participant responses were recorded, the researcher transcribed and analysed the voice recordings, and will hence report on the results that contribute to new knowledge rather than listing all statements.

5.2.2 Themes relating to driver performance

Chapter 2 provided a theoretical background on EI and other physiological influences that may impact on driver performance. This information influenced the development of the interview guide used in the qualitative group discussion and individual interview phases of the study (Addendum B). The following themes reflected in Figure 5.1 were identified and used to direct the focus group and personal interviews.

Table 5.1: Themes identified as possible contributors to the NWR driver performance phenomenon that were investigated qualitatively

DRIVER PERFORMANCE THEMES (IV)	CONTRIBUTING FACTORS (DV)
Driver competence	• **Training**: This addresses the range of basic training in specific vehicles and conditions that the employee would be expected to operate. • **Experience:** The relative driving experience of the employee within the range of vehicles and conditions. • **Evaluation**: The initial and continued evaluation of employees' driving competency.
Attitude	• **Accepting responsibility:** Accepting and taking responsibility for one's behaviour. • **Behaviour:** Displays behaviour not consistent with social or organisational values

Emotions	• **Self-Awareness:** The ability to recognise one's own emotion. • **Self-Management:** The ability to manage one's own emotions. • **Social Awareness:** The ability to recognise other's emotions and how your behaviour impacts on these emotions. • **Managing Relationships :** Managing relationships within a driving context and how this impacts on driver behaviour.
Values	• **Personal values:** Self values that impact on behaviour. • **External values:** Organisation and social values that may impact on driver behaviour in Eskom NWR

5.2.3 Driver competence

Driver competence is fundamental to driver performance. Any employee who is not competent to drive a specific class of vehicle, or is expected to drive in conditions for which he or she has limited experience, would increase the safety risk. The following comments were recorded from participants in both the personal interviews and focus group discussions:

5.2.3.1 Training

The questions relating to driver training was intended to identify to what extent driving competence is influencing the VIR in the Eskom NWR.

Focus group response:

People are sometimes confronted with conditions and circumstances they are not skilled enough to handle.

Participant 8:

Eskom driving statistics would suggest that there are a lot of drivers who need more training in unusual condition such as dirt road, rain, high speed and night driving.

The feedback would suggest that there is no real concern amongst the participants in regard to operating a vehicle in normal conditions. There is however, some concern as to driver competence in abnormal conditions such as rain, night, and high speed driving. Driver training would appear to have no real significance relating to the drivers EI other than the possibility that of emotional decision making (emotional self-management)

5.2.3.2 Experience

The issue of driver experience was intended to identify if the lack of experience may be a significant contributing factor to the VIR.

Focus group response:

We are not always practiced in the range of driving we may be subjected to like smoke from veld fires, rain and night driving. Yes, we may be competent in good conditions but less so in abnormal conditios.

Participant 4:

People are not always able to anticipate driver behaviour especially when you, a Bloemfontein driver find yourself driving in Johannesburg peak traffic and you sometimes don't, or can't adjust your diving behaviour to local conditions.

Participant 5:

New drivers sometimes lack confidence in their abilities mainly due to the lack of experience. This would present a higher risk than is normal.

Participant 7:

I believe my driving skills are adequate to handle any of the conditions I am expected to drive in. Some drivers however, tend to make the wrong decisions that place them in situations they are not skilled enough to handle.

Participant 42:

Yes I consider myself to be a competent driver however, having an accident is probably due to a series of events not all of which are under your control. Only in time will a person develop the instincts that will help you to avoid an accident.

In terms of the participants feedback it can be deduced that experience may well contribute to the VIR when a driver finds himself/herself in a unfamiliar situations. The question as to decision making may well indicate a lack of emotional maturity as it would appear that drivers allow themselves to be subjected to situations for which they are not familiar due to external influences such as work demands.

5.2.3.3 Evaluation

The purpose of addressing driver evaluation in this study was to determine if in fact the Eskom NWR drivers are competent, and if not, why do they still drive a vehicle.

Participant 9:

Both national and Eskom driving evaluations with the exception of specialised vehicles, only test the drivers competence at low speed and normally in ideal conditions after which they are declared competent to drive in all conditions. I find this a little strange.

Participant 12:

The reflexes of older people are sometimes slower which could result in an accident that may otherwise have been avoided. People should be evaluated on a regular bases.

Participant 44:

Yes I am competent to drive which does not mean I am immune to accidents. Black people sometimes get their drivers licence and do not have the opportunity to drive for extended periods which results in a situation where a person has a valid driver's licence but is no longer competent to drive.

Based on the above responses, it would appear that that although the Eskom NWR drivers have the basic driving competencies for normal and familiar circumstances but once confronted with vehicles and conditions with which they are not familiar there seems to be a decrease in overall competence and an increase in risk. Education and training initiatives should be preceded by a functional risk assessment.

5.2.4 Attitude

Driver attitude influences how drivers perceive their role and responsibility in the execution of their driving duties. Attitude may result in low or high risk driving behaviour. Attitude is also directly linked to all the EI domains as it determines how drivers would react to their emotions and their acceptance of change.

The participants responded to the question of attitude as follows:

5.2.4.1 Accepting Responsibility

Accepting responsibility for ones actions would be a firm indicator of emotional maturity. The purpose for measuring responsibility is to gain some perspective as regards the perceived levels of emotional maturity of the Eskom NWR drivers.

Focus group response:

Sometimes our attitude prevents us from considering the risk that bad driving practices have to ourselves and others.

Participant 1:

People should learn to better plan their trips rather than behave recklessly or irresponsibly to compensate for their bad planning.

Participant 4:

Some people are impatient and allow this to influence their driving behaviour. I think that a person's general attitude, if negative, will certainly increase the chances of accidents.

When you are feeling emotional for whatever reason, your job sometimes still requires you to drive; the trick is to balance your job requirement with the associated risk. Not too many people are able to do this.

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Participant 5:

I think that people who continually display a bad driving aptitude should not be allowed to drive until they receive some sort of sensitivity training as they are also putting me and others at risk.

Participant 6:

I do not understand the attitude of some drivers, they will say that they were speeding and took risks because they are under a lot of pressure and were late for a meeting. My point is that speeding and being reckless is not the only solution. What about better planning and communication to address these situations?

Some drivers also suffer from denial "it won't happen to me".

Participant 7:

I sometimes get irritated with other road users but I will not let this affect my driving behaviour. I am basically an introvert and as such I have no desire to interact with other road users by showing my irritation in any way. I take care of my own driving and I think that others should do the same.

Participant 9:

I will not drive a vehicle in conditions that I do not feel competent to handle regardless of what management or other may think of me.

Participant 20:

Often we do not follow good driving practice such as maintaining a safe following distance because we see other road users doing it.

Participant 34:

I sometimes react badly in traffic and afterwards wonder why I did what I did. I tend to justify my behaviour by arguing that others made me react that way.

Participant 40:

I want other drivers to know how I feel and for them to also experience the inconvenience or even danger they inflict on others. For example if a car overtakes and is in my lane; he will have to go off the road to take evasive action as I will stay in my lane regardless of the consequences to myself or the other vehicle, after all, it is him who created the situation.

The participants response to attitude and taking responsibility for one's own actions tends to be negative indicating a lack of emotional maturity when operating a vehicle. Attitude relates to all four of the EI domains and there appears to be a need for an IE intervention in this regard.

5.2.4.2 Behaviour

Behaviour may be viewed as the visible indication of a person's attitude towards an object of stimuli. This measurement of behaviour is intended to gain a perspective as to how driver behaviour is perceived in the Eskom NWR.

Focus group response:

I don't think you can always control how you feel but you may still be expected to drive; some people think that if they feel bad, then everyone else should feel bad as well. I think that that is a very negative attitude and will only serve to make matter worse.

Some drivers display a complete disregard to the safety and needs of other road users. These drivers need an attitude check.

I think that drivers with a bad attitude increase the chances of accidents.

Participant 3:

My behaviour towards other drivers will depend on how they treat me. If they have a bad attitude, then so will I.

Participant 4:

I am the type of person that if I am running late for a meeting; rather than speeding and getting all stressed about being late; I would rather phone and let people know I am running late or simple arrive late and explain why.

Participant 6:

Speed does not cause accidents; people do.

Participant 8:

I think that if you treat other road users with respect then they will generally return the complement. People enter short term relationships on the road and how you deal with this will generally influence one's driving behaviour.

Participant 9:

When people are inconsiderate and upset others I normally like to inconvenience them so they can see how it feels.

I suppose I should try and not react to negative emotions, but then again, how many of us can control our-self when we are in bad emotional state?

Participant 12:

I do not think of how I am going to react in specific circumstances, I just deal with the situations as they occur.

If something happens in traffic and it was my fault, then I would feel sorry that I have upset other road users, but if the fault was with them, I would go out of my way to make them feel bad.

Participant 17:

I generally don't allow what other people think of my driving behaviour to upset me too much. Hey, they all drive badly at times, why should I be any different?

Participant 21:

I generally stay calm in traffic even when others are being unreasonable. I actually feel sorry for drivers who allow others to frustrate them.

Participant 22:

I believe that all drivers are subject to distractions that take away their concentration on their driving, even for a short period, and this increases the risk of an accident. I am not certain as to what the answer to this problem is.

The response relating to driver behaviour in the Eskom NWR is generally negative which indicates that there may be a lack of emotional maturity.

The respondents' reaction to the overall question of attitude suggests a strong link to negative emotional behaviour. Most of the responses showed that under certain condition the drivers becomes angry (emotional triggers) and once this happens their attitude towards the situation becomes irrational and increases risk. Based on the responses it could be deduced that driver attitude may be largely situational and emotionally based.

5.2.5 Emotions

The ability to recognise and manage the role that emotions play in one's overall attitude and behaviour, and how these emotions impact and continually change behaviour is becoming very important. The participants responded to this matter as follows:

5.2.5.1 Self Awareness

Self-awareness relates to how well driver are aware of their emotional triggers and resulting responses when operating a vehicles.

Participant 2:

We are not always aware of our emotional state and only become aware when we are reacting to a situation, then it is too late to think rationally. I think people should recognise their emotional triggers and avoid these situations.

Participant 4:

Some people like myself suffer from road rage. I often get very upset in traffic and then react in a totally unreasonable manner. This condition seems to be limited to my reaction to traffic as I don't get so cross in other unpleasant situations.

Participant 6:

Emotions caused by losing someone close to you or even losing a dog would affect my ability to concentrate on my driving and in so doing increase my risk of an accident.

Participant 8:

I really am not aware of what triggers my negative emotions or how it happens, as there does not seem to be any consistent pattern I can identify with other than possibly my mood at any given time.

Participant 9:

I don't think about my emotional state, it simply is what it is.

Based on the participants response to emotional self awareness it may be deduced that there is a relatively low competence rating regarding this emotional domain.

5.2.5.2 Self-Management

Self-management relates to an individual's ability to manage known emotional responses to known stimuli. The purpose of this measure is to determine if and how emotional self-management may be a contributing factor to the VIR.

Participant 1:

I can sometimes control my emotions but often not. For example when experiencing loss I cannot always control my emotions but I may still be expected to drive.

Participant 2:

I believe that we are all subject to emotions, however, if we give conscious thought to what upsets us, and decide beforehand how we are prepared to react, we will be better equipped to deal with these emotions.

Participant 3:

My ability to manage my emotions will depend on my mood at the time. I sometimes am very good at it, but mostly not.

Participant 7:

People who display bad driving manners on the road do upset me but I tend to control my response to these situations. I seldom feel the need to acknowledge my emotions as I generally practice self-control.

Participant 8:

I generally don't allow the behaviour of others to influence my driving behaviour.

Participant 9:

I don't actually try and recognise my emotional state and then plan as to how I should react to that emotion. I simply react according to how I feel. I don't think that I would be very good at purposefully pre-managing my reactions to my emotions.

Participant 20:

I am mostly aware of my emotions but I seldom manage to control how I react to these emotions. I agree that this could influence my driving risk profile.

Based on the participant's responses it would appear that the ability to control ones emotions would be situational and also determined by the driver's general mood at the time. It would appear that very little proactive thought is exercised in controling driver emotions.

5.2.5.3 Social awareness

In this study, social awareness refers to a driver's ability to interact with other road users. This measure is intended to identify the perceptions of Eskom NWR drivers as to how they feel about social awareness issues.

Participant 8:

I am not particularly sensitive to the needs of other road users. I tend to believe that we should all manage our own situation.

Participant 20:

I don't really think of how my diver behaviour will impact on the wellbeing of other road users.

Participant 27:

I believe that the way you treat other road users will have a ripple effect on society and will influence how drivers behave on the road. One only has to look how the taxi industry is negatively affecting most road users. We see normal people now doing what taxies are doing and accepting this bad behaviour as the norm.

5.2.5.4 Managing Relationships

Participant 8:

How do you manage relationships with other road users? I really do not know. I would imagine that the best one can do is to try not to upset other road users and spoil their day.

Participant 9:

Unreasonable behaviour by other road users can put me in a bad place and my reaction to such situations can upset others.

Participant 12:

I have enough of a time trying to control my own feeling; others should take responsibility for their emotions the same as I do.

Participant 20:

I get cross with some drivers and land up hooting and shouting at them to show my annoyance, fortunately this does not happen too often.

Participant 21:

If you show your frustration to other road users, I believe that you are becoming part of the problem rather than calming the situation.

Participant 23:

Some people like myself, simply cannot stay calm when we continuously see other road users behaving badly. It upsets me and this is normally reflected in my behaviour, on and off the road. Having said this, I must add that I really do try not to get too cross.

From the participants' response to the question of social awareness, it may be deduced that this domain presents a high risk to the VIR.

The participant's responses to discussions pertaining to all of the EI domains suggest that education and training in emotional intelligence may significantly contributor to reducing risk associated with inappropriate emotional behaviour. Considering the comments it can be deduced that the risks associated with emotional behaviour cannot only be associated with the actual VIR but also potential VIR. Some may argue that it is only luck that is making the difference.

5.2.6 Values

Personal and organisational values may play a role in an individual's perception of what is acceptable behaviour and as such may translate into inappropriate behaviour. The ability to recognise appropriate values and associated behaviour is critical to the individual's attitude and performance. Imprinting appropriate organisational values as

could influence personal values over time. This is critical to the management of driver behaviour and associated risk. The participants responded to this point as follows:

5.2.6.1 Personal values

The purpose of this measure is to gain a perspective as to how the participants perceive personal values as a contributor to driver behaviour.

Participant 17:
I am committed to practicing good driving behaviour but I would answer my cell phone whilst driving. It simply does not make sense and is against my values, but I just don't seem to be able to resist it.

Participant 21:
I do not get easily upset. It would take a lot to get me in a negative state. I generally stay calm and even feel sorry for frustrated and stupid drivers.

Participant 22:
I think that all relationships will influence the way you feel at any given time, but in my case, I try not to allow these feelings to negatively influence my behaviour.

Participant 44:
My behaviour would often reflect my rebellious nature. I dislike hypocrisy especially from management who often say one thing and then do another. I would deliberately behave in an opposite manner when confronted with these hypocritical situations.

The participant's response to discussions pertaining to personal values appears to support the deduction that there is not a problem with these values that would significantly contribute to a negative VIR.

5.2.6.2 External values

In this study external values refer to the stated lived values prescribed by management with specific reference to how these values impact or relate to driver behaviour.

Participant 3:
Management in the Eskom NWR live up to their commitments to safe driving practice. They even reward good practice and punish bad driving behaviour that is not constant with the Eskom values. I appreciate this demonstration of "lived values" otherwise I don't know if I would be able to accept all the organisation's values.

Participant 7:
People are generally influenced by the so called role models; this can be other people or even the organisation itself. For example, if the organisations values state that they value good driving behaviour and then do not take action against those who ignore these values; will send a message that people can ignore the business values. The same can be said for individuals setting examples.

Participant 9:
Friends and associates can influence the way I drive as it can put me in a bad mood and this would reflect on my driving performance. I generally get along with people and have a friendly nature, but that does not mean that I don't sometimes get upset and behave in a way that could damage relationships.

Participant 17:
I allow the general behaviour of individuals and the business to influence my emotional state and consequently my driving behaviour. My attitude then is "well if everyone else is doing it then why can't I?"

Participant 20:
I get very upset when managers make unreasonable work demands on staff. I sometimes wonder if they know what I do. The demands sometimes cause me to take risks I would ordinarily not take.

Participant 31:

I believe that management in the Eskom NWR are committed to encouraging and even enforcing good driving behaviour, I sometimes think that they don't balance work expectations with their expressed driving values as these tend to contradict each other at times. For example, management would state "No work is worth your safety" but if you don't perform your job will be at risk.

From the participants; response it can be deduced that practical execution of "external values" would influence how they as individuals would react to and adapt their personal values. The seemingly high dependence of external factors may suggest a weakness in the EI domains of self-awareness and self-management.

From the above responses it can be deduced that that values would fulfil an emotional maintenance role and would relate to the EI domain of emotional management. The significance of values is that drivers can within the concepts of EI, learn how to recognise and manage their personal values "value management" however, sustainable value management is dependent on the broader environment such as management living the organisational values.

5.3 SUMMARY OF QUALITATIVE FINDINGS

This section represents a summary of the qualitative findings. The driver variables and resulting participant responses are summarized into a single table. Only the responses pertaining to EI are reported in the summary.

Table 5.2 below represents a summary of the qualitative findings

Table 5.2: Summary of qualitative findings.

DRIVER PERFORMANCE VARIABLES	SUMMARY OF PARTICIPANT'S RESPONSE
Driver competence:	
• **Training**: This addresses the range of basic training in specific vehicles and conditions that the employee would be expected to operate.	➢ There is a need for more advanced training specifically in the area were the drivers lack experience in conditions they may be expected to function such as off road, rain, night and high speed.
• **Experience:** The relative driving experience of the employee within the range of vehicles and conditions.	➢ Drivers mostly lack experience in conditions they may be expected to function in such as off road, rain, night and high speed diving.
➢ **Evaluation**: The initial and continued evaluation of employees driving competency.	➢ Evaluations of drivers should be made more objective and not only based on the K53. Evaluations should be based on more specific categories such as off-road, high speed, abnormal conditions and even age and experience.
Attitude: Attitude will inevitably translate into behaviour. The question is how Eskom NWR driver attitude impacts on the VIR and risk.	
• **Accepting responsibility:** Accepting and taking responsibility for own behaviour.	➢ There is a tendency for driver to look for excuses rather than accept or learn from their experiences.

	➢ The general attitude of drivers displays a lack of thought and planning relating to trips resulting in unintentional bad driving practice.
• **Behaviour:** Displays behaviour not consistent with social or organisational values.	➢ The attitude behaviour (AB) of some drives can best be described as dangerous. This behaviour may also be as a result of emotional immaturity.
Emotions: The Eskom NWR driver's ability to identify and manage his/her emotions relating to driving a vehicle may in all probability influence the risk factors associated with the region's VIR. The purpose of this study was to indentify the current emotional influences that may be making a negative contribution to driver risk.	
• **Self-Awareness:** The ability to recognise one's own emotion.	➢ There is a need for development in this domain with specific reference to an understanding as to how emotions impact on behaviour.
• **Self-Management:** The ability to manage one's own emotions.	➢ There is a general lack in the ability to manage emotions. The drivers tend to react to rather than manage emotions.
• **Social Awareness:** The ability to recognise other's emotions and how	➢ This domain has a generally low importance rating among the Eskom drivers and may be

your behaviour impacts on these emotions. • **Using Emotions :** Managing relationships	impacting on negative driver behaviour ➢ There is a general lack of commitment and bad execution in regard to this domain. The attitude and lack of commitment in this domain may be contributing to negative stress that may translate in bad driving behaviour. Eskom driver may lack the ability to predict general driver behaviour.
Values: Personality theories suggest that values may well influence attitude and behaviour. The purpose of this study was to determine if and how values are currently perceived by Eskom NWR drivers. • **Personal values:** Self venues that impact on behaviour. ➢ **External values:** Organisation and social values that may impact on driver behaviour in Eskom NWR	➢ Generally acceptable ➢ Relationships have a significant impact on emotions and translate to driving behaviour. ➢ Organisational values are generally seen to be appropriate and well managed.

5.4 CONCLUDING REMARKS

The Driver competence variable suggests that there is an acceptable level of basic training and evaluation and that this variable is probably not the main contributor to the vehicle incident rate (VIR) in the NWR.

The attitude domain indicates a need for development in driver responsibility in regard to the acceptance of responsibility and learning experiences. The feedback suggests that drivers are inclined to look for excuses and pay little attention to the learning experiences.

As regards attitude behaviour (AB), feedback suggests that drivers do not pay sufficient attention to the details of their journey such as time, conditions and contingencies. This lack of planning can place the driver in a situation where he or she feels pressured, which in turn may result in uncharacteristic driver behaviour. It would be just as well to note that continual pressure caused by lack of planning may lead to bad driving behaviour becoming the norm. It would be prudent to consider training in this domain

The feedback on the emotional domain in regard to self-awareness, self-management, social awareness and using emotions revealed the following:

- Emotional self-awareness: although there is a general acknowledgement of this domain there seems to be a lack of understanding amongst the participants as to its significance.

- Emotional self-management: the feedback suggests that there is a tendency for drivers to react to emotionally based situations rather than to be proactive in this regard. Although the drivers acknowledge the role of emotions in their behaviour, they generally do not know how to manage these emotions.

- Social awareness: This matter seems to be a mute issue amongst the Eskom NWR drivers as they do not understand how the interaction between themselves and other road users may impact on overall driving behaviour.

- Managing relationships: There is a general lack of commitment relating to this domain. Drivers are failing to recognise the implications of managing relationships within a driving context.

- In view of the fact that all our behaviour is to a significant degree influenced by our emotions and our ability to recognise and manage these emotions, educators would be well advised to consider further research into this matter.

The values domain suggests that there are very few problems relating to personal or business values in so far as they may impact on driver performance. The personal value feedback indicates an understanding of the importance and role that relationships can have on attitude and behaviour. The organisation stance and values relating to driver behaviour is generally seen to be positive. There are some discrepancies noted from some participants between the value statement and management behaviour although these examples are limited.

The conclusion drawn by the researcher is that all the domains discussed above can have a significant impact on driving behaviour in the business, and that none of them can be left unattended? All of the domains can in some way or other relate back to emotional intelligence (EI), which can be considered as the root cause of driver behaviour. Only by addressing EI can all the other variables be integrated.

Chapter 6 will present a consolidated summary in which both the qualitative and quantitative data will be presented in a synthesis of findings and recommendations.

CHAPTER 6

SYNTHESIS OF FINDINGS AND RECOMMENDATIONS

6.1 Introduction

The South African educational system is highly focused on cognitive education and training and very little is done to address the emotional aspects which underline how effectively people apply these cognitive competencies (c.f 1.1;1.2) . This study considers why seemingly competent Eskom drivers sometimes act in an irrational manner and what part if any of EI domains could be used to self-manage negative behaviour.

The purpose of this research was to investigate how EI may be impacting on driver behaviour and its possible impact on the VIR. This research would also consider if Education and Training in EI could help to negate negative driver behaviour.

Although the study was primarily focused on EI variables, other contributing variables were also noted in terms of their impact on EI and possible need for further research projects.

The purpose of this chapter is to synthesise the findings from this research in view **of** making recommendations on the inclusion of EI in the training of adult learners in the Eskom NWR

6.2 Overview of the study

The purpose of this study was to explore the possible relationship between EI and driver behaviour in the Eskom NWR in view of making recommendations in terms of how education and training in EI may be integrated in the driver training strategy.

The research was viewed from a mixed method perspective which included both post-positivistic qualitative and positivistic quantitative research methods in order to address the research questions.

Chapter 1 provides the background and problem statement which highlights the need for this study. This chapter also provides details as to the study objectives, background to EI, research methodologies, limitations and outline of this study.

Chapter 2 focuses on the influences of emotional intelligence on behaviour and provides a theoretical bases on how EI is developed, driving psychology and personality development in order to inform the study and provide a theoretical bases for data analysis, deductions and recommendations. This chapter also reviews the actual driver VIR statistics in the Eskom NWR in order to gain a broader perspective of the problem.

Chapter 3 is intended to describe and explain the research design and methods employed in this study to address the research objectives.

Chapter 4 applied a positivistic quantitative approach in order to quantify the driver phenomenon from an EI domain perspective. This phase of the study made use of a standardised EQ test (EQ-Map) from which the data sets were analysed to determine any possible relationship between EQ and groups, age, gender and race with the purpose to inform possible remedial adult education initiatives.

Chapter 5 provides a qualitative perspective on the driver phenomenon where the researcher makes use of interviews and group discussions to gain a narrative perspective of the phenomenon and identify key variables that may be influencing diver behaviour. The qualitative data also served to validate and gain an enhanced perspective of the quantitative data.

6.3 An overview of how the objectives were reached

6.3.1 Objective 1

- To provide a foundational study on EI; to explore the possible linkages between the various EI domains and how they may be impacting on the vehicle incidents rate.

The summary of the quantitative and qualitative data was sufficiently conclusive to deduce that EI does in fact impact on attitude and driver behaviour (cf. 5.6.3; 4.7;4.8;5.6; 5.7;5.8). The theoretical discussions offered by the EI theory (cf. 2.2.5) and associated theories relating to driver psychology, neurological bases for EI, emotional contagion and personality theories (cf. 2.2.1;2.2.2; 2.2.3; 2.2.4) would also support this deduction.

The actual extent to which the various EI domains impact on driver behaviour could not be fully established in this study, as there are too many dependent variables, the effect of which can only be measured through a longitudinal study.

6.3.2 Objective 2

- To determine to what extent EI may influence driver attitude and performance.

Both the quantitative and qualitative data suggests a strong relationship between the EI domains of self-awareness, self-management, social-awareness, managing relationships (cf.5.6.5.1; 5.6.5.2; 5.6.5.3; 5.6.5.4) to driver behaviour and performance. The findings are corroborated by the driving psychology and personality theories (cf. 2.2.1; 2.2.4). Theories relating to reasoned action (TRA) suggests that individuals consider the consequence before performing the particular behaviour which requires a manageable degree of emotional stability (cf. 2.2.5). The qualitative data (cf.5.6.3) indicates fairly low EQ levels, which in turn suggests that Eskom drivers may not always be in full control of their reasoning abilities due to

inadequate situational analysis and emotional management. Theory supports the idea that training in the EI domains will help drivers to appreciate the intrinsic and extrinsic dynamics associated with emotions and in so doing improve the their attitude to the avoidance of negative behaviour (cf. 2.2.5).

6.3.3 Objective 3

- To make recommendations on the inclusion of EI in the training of adult learners in the Eskom NWR

The theory of driver behaviour and driver psychology, as well as the model depicting the time course of emotions (cf. 2.2) and associated discussions would suggest that there is a link between emotions and driver behaviour. The theories relating to EI (cf.2.3) further explore possible influences and approaches to EI training as proposed by Stein and book (2006), Goleman (1995), Sparrow and Knight (2006), Singh (2006), Lynn (2005). These training approaches when viewed against the Eskom NWR diver demographics (cf. 3.3.1.2) and the qualitative data provided in chapter 4, influenced the recommendations and conclusions relating to EI training of adult learnes in the Eskom NWR (cf. 6.5: 6.6).

6.4 Synthesis of findings

Although other variables which may impact on driver risk were discussed in chapters 2,3, and 4 of this study, the synthesis will only be reporting on data which relates specifically to emotional intelligence and its possible impact on driver performance. Table 6.1 reflects the syntheses of findings

Table 6.1: Synthesis of findings

EI PERFORMANCE DOMAINS	QUANTITATIVE FINDINGS	QUALITATIVE DEDUCTIONS	IMPACT ON ON ADULT EDUCATION
1. Self-awareness (cf. 2.3.5; 2.3.6)	The analysis of the data sets specifically that of EQ levels (cf 4.2.3) suggest a strong correlation between EQ and the VIR. The correlations between EQ and age, gender and race were less significant indicating that these factors would not have a significant impact on the VIR. It would appear that response bias may have contaminated the qualitative data specifically to the measurements pertaining to the differences in groups. The data would support the deduction that there is a positive need for education and training in this domain	The qualitative enquire reveals a strong relationship between this self-awareness and driver behaviour. Qualitative deductions suggest that there is a need for development in this domain with specific reference to an understanding how emotions impact on an individual's behaviour (cf.5.2.5.1). The comparative views between group A's quantitative and qualitative results tend to suggest that response bias may be present in the quantitative data.	Any adult educational and training intervention relating to the EI domain of "self-management should be customised on driver attitude and behaviour rather than a broader EI development approach. Adults need to become aware of their emotional triggers specific to the act of driving. Only once they learn how to identify their driving related emotions will they begin to learn how to manage these emotions. There are many documented suggestions as to how education in self-awareness can be approached (cf. 2.3) but none of these suggestions address the unique requirements related specifically to driving.

			Although a holistic approach to the development of an individual's EI may have a positive impact on driver attitude and behaviour, this could in all probability be viewed as a long term solution rather than immediately addressing the problem at hand. Customised training would in all probability produce more desirable results within reasonable timeframes. The contradicting message between the qualitative and quantitative data would suggest that more research data in all the EI domains is required before a meaningful educational programme can be developed to effectively address the driver phenomenon.
2. Managing own Emotions. (cf. 2.3.5; 2.3.6)	Managing emotions can be viewed as the ultimate objective of any EI adult education	There appears to be a general attitude where the reaction to emotion is largely dependent on	The study indicates a need for adult education and training in the EI domain of "managing

	programme. The EQ level test tends to suggest that there is a need for education and training in this domain.	extrinsic influence and there is limited self-management measures exercised in the participants driving behaviour. (cf. 5.4.5.2; 5.5) The qualitative enquiry did not reveveal any significant differences between age, gender and race in this domain however, the responses from the females tended to indicate a greater self-control than their male counterparts. This deduction is once again in contradiction to the quantitative response. The researcher however tends to side with the qualitative data in so far as the observations of the emotional responses tend to be more realistic than that of the possibly bias presented by the dispositional characteristics of the respondent.	emotions". The research findings both on the qualitative and quantitative analysis suggest that any education and training relating to managing emotions in the driving context, need not necessarily be sensitised according to for age, gender or race.
3. Social Awareness (cf. 2.3.5; 2.3.6)	The analysis of the social awareness	The overall response to the	The qualitative data suggests that

	domain revealed much the same results as did self-awareness and managing emotions above.	social awareness domain was fairly negative (cf.5.2.5.3). Participants could not appreciate the significance of social awareness in the context of driving and generaly felt that each person should take accountability for their own emotional state in this regard. Once again there was no noticeable distinction between age, gender or race relating social awareness.	there is a strong need for adult education and training in the social awareness domain. The design of any educational intervention in this regard would be well advised to consider the influence of personal value on driver behaviour.
4. Using emotions (cf. 2.3.5; 2.3.6)	The analysis of this EI domain revealed much the same results as did self-awareness and managing emotions above. Once again response bias is expected to have influenced the accuracy of the data.	The "using emotions" or "managing emotions" domain in the driving context was considered by most participants to be the responsibility of other road users (cf. 5.2.5.4) and that they would be able to manage their attitude provided other drivers did not upset them. Managing relationships with other road users was mostly a foreign concept to most of the	Both the quantitative and qualitative data give sufficient indication that there is a need for education and training in this domain. This deduction is supported by related theory. As with social awareness, educators would be well advised to focus on driver values when addressing this domain.

		participants. As with the other domains, no distinctions could be identified relating to age, race or gender.	

6.5 DISCUSSION OF FINDINGS

The summary of the quantitative and qualitative findings relating directly to EI are as discussed in 6.1 above. These finding are significant in so far as they directly address the stated objectives of the study. Findings associated with the qualitative study however, extend beyond the primary scope of the and revile other variables that may have an indirect impact on driver emotions, behaviour and performance. These variables are as listed below:

- **Driver competence**

  Driver competence is fundamental to driver performance. Any employee who is not competent to drive a specific class of vehicle, or is expected to drive in conditions for which he or she has limited experience, would increase the safety risk. The specific participant's responses to driver competence are listed in chapter 5 (cf. 5.2.3.1; 5.2.3.2; 5.2.3.3).

- **Attitude**

Driver attitude has an influences on how drivers perceive their role and responsibility in the execution of their driving duties. Attitude may result in low or high risk driving behaviour. Attitude is also linked to all the EI domains in so far as it may influence how drivers would react to their emotions and their acceptance of change. The participants reaction to attitude are recorded in chapter 5 (cf. 5.2.4.1; 5.2.4.2).

- **Values**

Personal and organisational values may play a role in an individual's perception of what is acceptable behaviour and as such may translate into inappropriate behaviour.

The ability to recognise appropriate values and associated behaviour is critical to the individual's attitude and performance. Imprinting appropriate organisational values over time could influence personal values. This is critical to the management of driver behaviour and associated risk. The participant's responses to this point are listed and recorded in chapter 5 (cf. 5.2.6.; 5.2.6.1; 5.2.6.2).

6.6 Recommendations

6.6.1 Recommendations for future training of drivers in Eskom NWR

- Education and training in EI should be customised to focus on typical driving scenarios which invoke driver emotions and explore proactive measures as to how individuals may recognise and manage the emotional influences on their driving attitude, behaviour and overall performance.

- A strong emphasis should be placed on self-awareness and self-management and the development of education and training initiatives should be based on the theoretical principles discussed in this study (cf.2.3.6).

- Any education and training programme should also take cognisance of the fact that the target audience will be adults and as such the design of training material and delivery strategies should accommodate the fundamental principles of adult learning (cf. 1.4.1).

6.6.2 Recommendations for further research

Further research is required in order to answer the following EI related questions:

- How would an individual's personality influence their ability to benefit from a generic approach to EI training?

- Should EI education and training be customised to address specific environments or would a general practice approach be more sustainable?

6.7 Limitations of study

This study was limited to drivers in the Eskom NWR Bloemfontein operating area. The sample size was relatively small and only involved one of the six operational areas within the Eskom NWR, this prevents any claim to the generalisation the findings to Eskom as a national organisation

6.8 Concluding remarks

The study indicates that EI may well impact on driver attitude and behaviour specifically in the EI domains of self-awareness and self-management. The remaining domains of social awareness and managing relationships are also identified as being significant to the development of an individual's EI , but it is proposed that immediate impact on driver behaviour is more probable if the education and training initiatives focus was to be centred on immediate EI actions an individual can take in order to identify his/her EI status and related remedial actions. This theory will need to be further researched in order to substantiate this claim.

Proposed EI education and training programmes would be well advised to incorporate the theoretical discussions presented in this study (cf.2.2.5.8) however, further research will be required to test the actual impact of EI development on driver performance.

Other variables identified in this study (cf.6.5) would in all probability also impact on a driver's emotional state and ultimately influence driver behaviour. Any EI development programme would be well advised to integrate this variable into their training in so far as identifying possible relationships and impacts on the dependent variables.

In conclusion, all literature on emotional intelligence suggests that emotions do in fact influence behaviour. This study has taken a look at how driver emotions

may negatively impact on driver behaviour and how this would increase risk to the VIR. What remains to be done is the customisation, implementation and evaluation of driver specific EI development programmes.

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ADDENDUM A

EQ MAP

EMOTIONAL RESPONSE

QUESTIONNAIRE

SUMMARY OF PARTICIPANTS RESPONSE

GROUP A

AGE: 50 >

	QUESTIONS	**1** NEVER	**2** SOMETIMES	**3**	**4** OFTEN	**5** ALWAYS
1.	I know when to speak about my personal problems to others					
2.	When I am faced with obstacles, I remember times I faced similar obstacles and overcame them					
3.	I expect that I will do well on most things I try					
4.	I can understand the non-verbal messages of other people					
5.	Some of the major events of my life have led me to re-evaluate what is important and not important					
6.	When my mood changes, I see new possibilities					
7.	Emotions are one of the things that make					

	QUESTIONS	**1** NEVER	**2** SOMETIMES	**3**	**4** OFTEN	**5** ALWAYS
	my life worth living					
8.	I am aware of my emotions as I experience them.					
9.	I expect good things to happen.					
10.	I like to share my emotions with others.					
11.	When I experience a positive emotion, I know how to make it last.					
12.	I arrange events others enjoy.					
13.	I seek out activities that make me happy.					
14.	I am aware of the non-verbal messages I send to others.					
15.	I present myself in a way that makes a good impression on others.					
16.	When I am in a positive mood, solving problems is easy for me.					
17.	By looking at their facial expressions, I recognize the emotions people are experiencing.					
18.	I know why my emotions change.					
19.	When I am in a positive mood, I am able to come up with new ideas.					
20.	I have control over my emotions.					

	QUESTIONS	**1** NEVER	**2** SOMETIMES	**3**	**4** OFTEN	**5** ALWAYS
21.	I recognize my emotions as I experience them.					
22.	I motivate myself by imagining a good outcome to tasks I take on.					
23.	I compliment others when they have done something well.					
24.	I am aware of the non-verbal messages other people send.					
25.	When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself.					
26.	When I feel a change in emotions, I tend to come up with new ideas.					
27.	When I am faced with a challenge, I don't give up because I believe I will succeed.					
28.	I know what other people are feeling just by looking at them.					
29.	I help other people feel better when they are down.					
30.	I use good moods to help myself keep trying in the face of obstacles.					
31.	I can tell how people are feeling by listening to the tone of their voice.					
32.	I can understand why people feel the way they do.					

3 ____	4 ____	6 ____	1 ____
7 ____	12 ____	11 ____	2 ____
8 ____	17 ____	19 ____	5 ____
10 ____	23 ____	22 ____	9 ____
13 ____	24 ____	25 ____	15 ____
14 ____	28 ____	26 ____	16 ____
18 ____	29 ____	30 ____	20 ____
21 ____	31 ____	32 ____	27 ____
Total score /number of respondents = Score: /40 Above 30 = sufficient	**Total score /number of respondents = Score: /40** Above 30 = sufficient	**Total score /number of respondents = Score: /40** Above 30 = sufficient	**Total score /number of respondents = Score: /40** Above 30 = sufficient
Emotional self-awareness	**Emotional social awareness (others)**	**Understanding & using emotions**	**Managing your own emotions**

ADDENDUM B

INTERVIEW GUIDE

RESEARCH INTO DRIVER BEHAVIOUR

INTERVIEW TOPIC GUIDE

Discussion area 1: Knowledge of one's own emotions

1.1 Do you consider yourself to be a competent driver in the entire range of vehicles and conditions you are expected to drive?

1.2 How would you describe the importance of acknowledging your emotional sate when driving a vehicle?

1.3 Can you explain the circumstances that create negative emotional stress before or when driving a vehicle?

1.4 Based on past experience, are you always aware of emotional state and how it impacts on your driving behaviour?

Discussion area 2: Managing ones emotions

2.1 How do you manage your emotional state when driving

2.2 What do you think you can do to reduce the impact of emotional behaviour when driving a vehicle?

2.3 Do you acknowledge your emotions and can you avoid the conditions that put you in a negative mind-set?

2.4 Do you ever experience any degree of road rage?

Discussion area 3: Recognising other's emotions

3.1 How do you feel about other road users when the other diver appears to be reckless or unreasonable.

3.2 How would you describe your normal reactions to unreasonable and inconsiderate road users?

Discussion area 4: Managing relations

3.1 In your opinion, do personal relationships with your boss, co-workers or other road users impact on driving behaviour.

3.2 What consequence or reaction do you hope your expressed negative behaviour towards other inconsiderate road users will have?

PARTICIPANTS RESPONSE FORM

Participant details:

First Name:

Surname:

Gender:

Age:

Years driving experience:

Contact Number:

RESPONSE SHEET
QUESTION 1.1

STUDENT RESPONSE	RESEARCHER THOUGHTS

RESPONSE SHEET
QUESTION 1.2

STUDENT RESPONSE	RESEARCHER THOUGHTS

RESPONSE SHEET
QUESTION 1.3

STUDENT RESPONSE	RESEARCHER THOUGHTS

RESPONSE SHEET
QUESTION 1.4

STUDENT RESPONSE	RESEARCHER THOUGHTS

RESPONSE SHEET
QUESTION 2.1

STUDENT RESPONSE	RESEARCHER THOUGHTS

RESPONSE SHEET
QUESTION 2.2

STUDENT RESPONSE	RESEARCHER THOUGHTS

RESPONSE SHEET
QUESTION 2..3

STUDENT RESPONSE	RESEARCHER THOUGHTS

RESPONSE SHEET
QUESTION 2..4

STUDENT RESPONSE	RESEARCHER THOUGHTS

RESPONSE SHEET
QUESTION 3..1

STUDENT RESPONSE	RESEARCHER THOUGHTS

RESPONSE SHEET
QUESTION 3..2

STUDENT RESPONSE	RESEARCHER THOUGHTS

RESPONSE SHEET
QUESTION 4..1

STUDENT RESPONSE	RESEARCHER THOUGHTS

RESPONSE SHEET
QUESTION 4..2

STUDENT RESPONSE	RESEARCHER THOUGHTS

ADDENDUM C

RESEARCH CONSENT FORM

GROUP A

Eskom
Distribution

RESEARCH INFORMED CONSENT FORM

This information consent form serves as an invitation to all Eskom North Western Region (NWR) staff who are required to drive a vehicle as part of their conditions of employment and **who have been involved in a vehicle incident (VI)** between the periods March 2009 to date.

This research is sponsored by the NWR Risk Management Department and will be conducted by John du Preez of the NWR HRD department.

The consent form has two parts namely:

- **Part one**; Inform you about the purpose, benefits and processes of the research
- **Part two**; Obtain your consent (Certificate of consent) should you agree to participate in this Research.

PART ONE: Information sheet

1.1 Introduction

A research project entitled "The relationship between the emotional intelligence (EI) domains and driver behavior in Eskom: An adult education perspective" has been initiated to investigate if EI training could impact on driver performance in the NWR.

You are invited to take part in this research and will be given more detailed information should you decide to participate. You do not have to decide today whether or not you will participate in the research. Before you make your final decision, you are encouraged to talk to anyone you feel comfortable with about the research or contact John du Preez on 0832741144 or 051 4042798 for more information.

1.2 Purpose of the study

The vehicle incidents rate (VIR) in our region, with specific reference to incidents resulting in serious injury or death will always be a matter of concern. Eskom NWR have introduced a number of driver courses and evaluations in an attempt to bring down the VIR with limited success.

The purpose of this research is to try and identify the main contributing factors which may be negatively impacting on diver performance and to explore possible measures that may be taken to address these factors.

1.3 Research investigation

The research will involve a personal interview in order to discuss your views on a number of driving and attitude related issues. You will not be expected to share personal beliefs, practices or stories, or any knowledge you are not confortable sharing. The interview should not take more than one hour of your time. The research project will also ask of you to complete an Emotional Intelligence questionnaire which should not take more than a few minutes to complete.

1.4 Why have you been selected to participate?

You have been invited to participate in this research because our records show that you were involved in a vehicle incident within the last 24 months and as such we believe you could help us to better understand the personal and physical circumstance that may increases the chances of vehicle incidents.

1.5 Voluntary participation

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. You may change your mind later and stop participating even if you agreed earlier.

1.6 Confidentiality

During the interview, I (John du Preeez) will sit down with you at which time you will be afforded the opportunity to ask any questions about the research that may still be unclear to you. We will then work through the research questions. If you do not wish to react to any of the questions during the interview, you may say so and I will move on to the next question. No one else but the myself will be present unless you would like someone else to be there. The information recorded is confidential, and no one else except myself will have access to this information. For reporting purposes, no-one will be identified by name I will replace your name with a number and only I will know what your number is. The records of the interview and questionnaire will be stored under lock and key for a pre-determined period after which time these records will be destroyed.

1.7 Risk

There is a risk that you may share some personal or confidential information by chance, or that you may feel uncomfortable talking about some of the topics. You do not have to answer any question or take part in the interview or questionnaire if you feel the question(s) are too personal or if talking about them makes you uncomfortable. As stated above, all possible steps will be taken to ensure your confidentiality and protect you against any possible reprisal resulting from your participation in this research project.

1.8 Benefits

There may be no direct benefit to you, but your participation is likely to help us to introduce training initiatives which we hope will improve driver safety and in so doing save lives.

1.9 Sharing the Results

The knowledge that we get from you and other participants will be analyzed and the results will be published so that all interested parties will be ably to learn from this research. Please note that this will be done in terms of the confidentiality commitments discussed above.

PART TWO: Certificate of Consent

I have been invited to participate in a research project intended to explore the possible relationship between the emotional intelligence (EI) domains and driver behavior in Eskom.

I have read the foregoing information, or it has been read to me. I have had an opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study.

Print Name of Participant: _____

Signature of Participant: _____

Date: _____

Day/month/year

ADDENDUM D

RESEARCH CONSENT FORM

GROUP B

Eskom
Distribution

RESEARCH INFORMED CONSENT FORM

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You are invited to take part in this research and will be given more detailed information should you decide to participate. You do not have to decide today whether or not you will participate in the research. Before you make your final decision, you are encouraged to talk to anyone you feel comfortable with about the research or contact John du Preez on 0832741144 or 051 4042798 for more information.

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The purpose of this research is to try and identify the main contributing factors which may be negatively impacting on diver performance and to explore possible measures that may be taken to address these factors.

1.3 Research investigation

You will be asked to complete an Emotional Intelligence (EI) questionnaire in order to capture your opinion as to if and how you believe EI could be impacting on driver performance. The questionnaire should not take more than a few minutes to complete.

1.4 Why have you been selected to participate?

You have been invited to participate in this research because as you have not been involved in any vehicle incident over the past 24 months we like to gain your input as to how we could possibly help to reduce the VIR in our region

1.5 Voluntary participation

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. You may change your mind later and withdraw from participating even if you agreed earlier.

1.6 Confidentiality

You can contact John du Preez if you require any further information or have any questions about the research that may still be unclear to you. You will be requested to complete the EI questionnaire. If you do not wish to react to any of the questions you may simply skip that question. Your completed questionnaire is confidential, and no one else except myself will have access to this information. For reporting purposes, no-one will be identified by name I will replace your name with a number and only I will know what your number is. Your completed questionnaire will be stored under lock and key for a pre-determined period after which time these records will be destroyed.

1.7 Risk

There is a risk that you may share some personal or confidential information by chance, or that you may feel uncomfortable talking about some of the topics. You do not have to answer any question if you feel the question(s) are too personal. As stated above, all possible steps will be taken to ensure your confidentiality and protect you against any possible reprisal resulting from your participation in this research project.

1.8 Benefits

There may be no direct benefit to you, but your participation is likely to help us to introduce training initiatives which we hope will improve driver safety and in so doing save lives.

1.9 Sharing the Results

The knowledge that we get from you and other participants will be analyzed and the results will be published so that all interested parties will be ably to learn from this research. Please note that this will be done in terms of the confidentiality commitments discussed above.

PART TWO: Certificate of Consent

I have been invited to participate in a research project intended to explore the possible relationship between the emotional intelligence (EI) domains and driver behavior in Eskom

I have read the foregoing information, or it has been read to me. I have had an opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study

Print Name of Participant: _____

Signature of Participant: _____

Date: _____

Day/month/year

ADDENDUM E

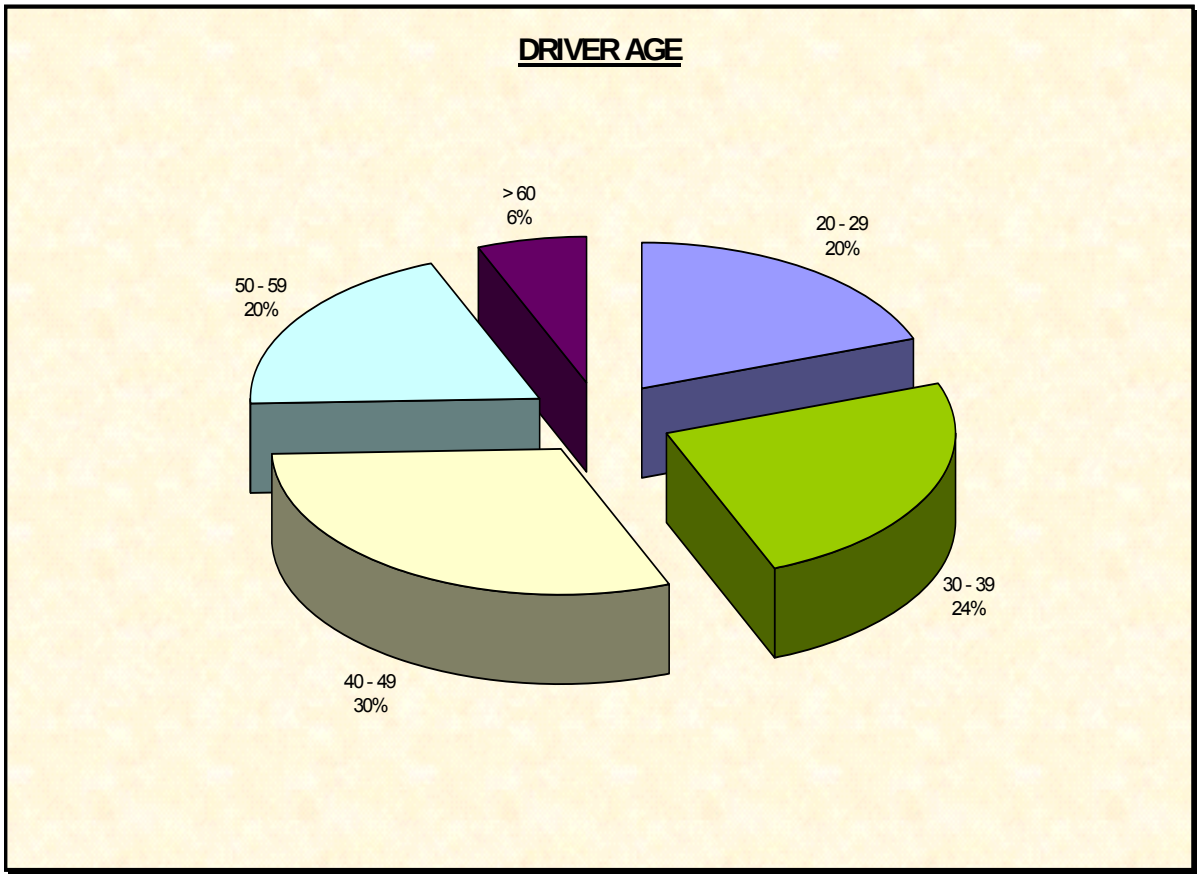
NWR VIR STATISTICS

2.3.2 Eskom NWR Driver statistics

2.3.2.1 Age

Figure 2.8 below indicates that 30% of accidents are attributed to persons between the ages of 40 – 49 closely followed by the age groups 30 -39. These statistics are significant in so far as the high vehicle incident rate (VIR) age groups would generally be expected to be persons with lot of driving experience and that the accident rate in these age groups could be expected to be reasonably lower.

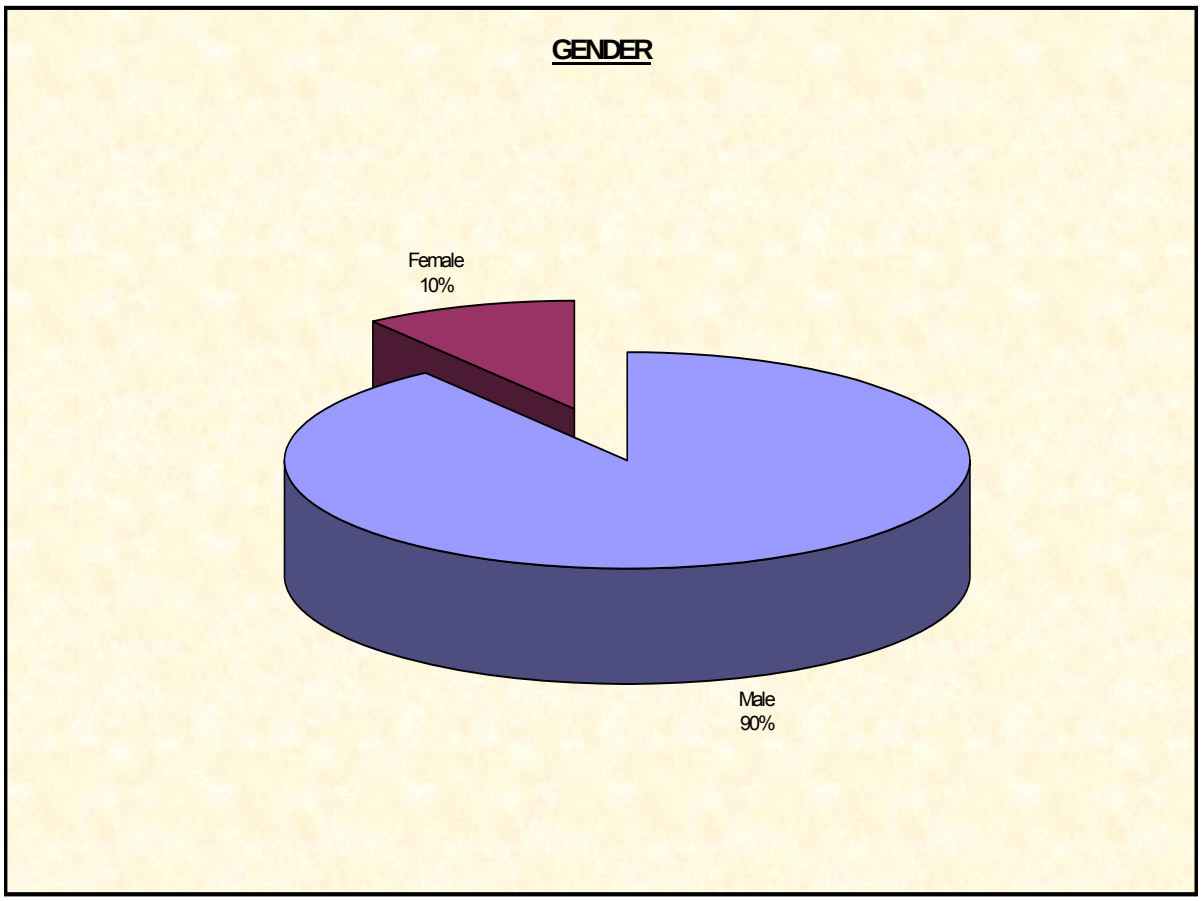
Figure 2.8: Driver Age



2.3.2.2 Gender

The gender statistics reflected in Figure 2.9 shows that 90% of vehicle incidents are attributed to male drivers who represent 75.34% of the driver population in the Eskom NWR. These statistics may suggest that driver attitude or EI may have a greater impact on the male population. This theory will be tested in the quantitative phase of the study.

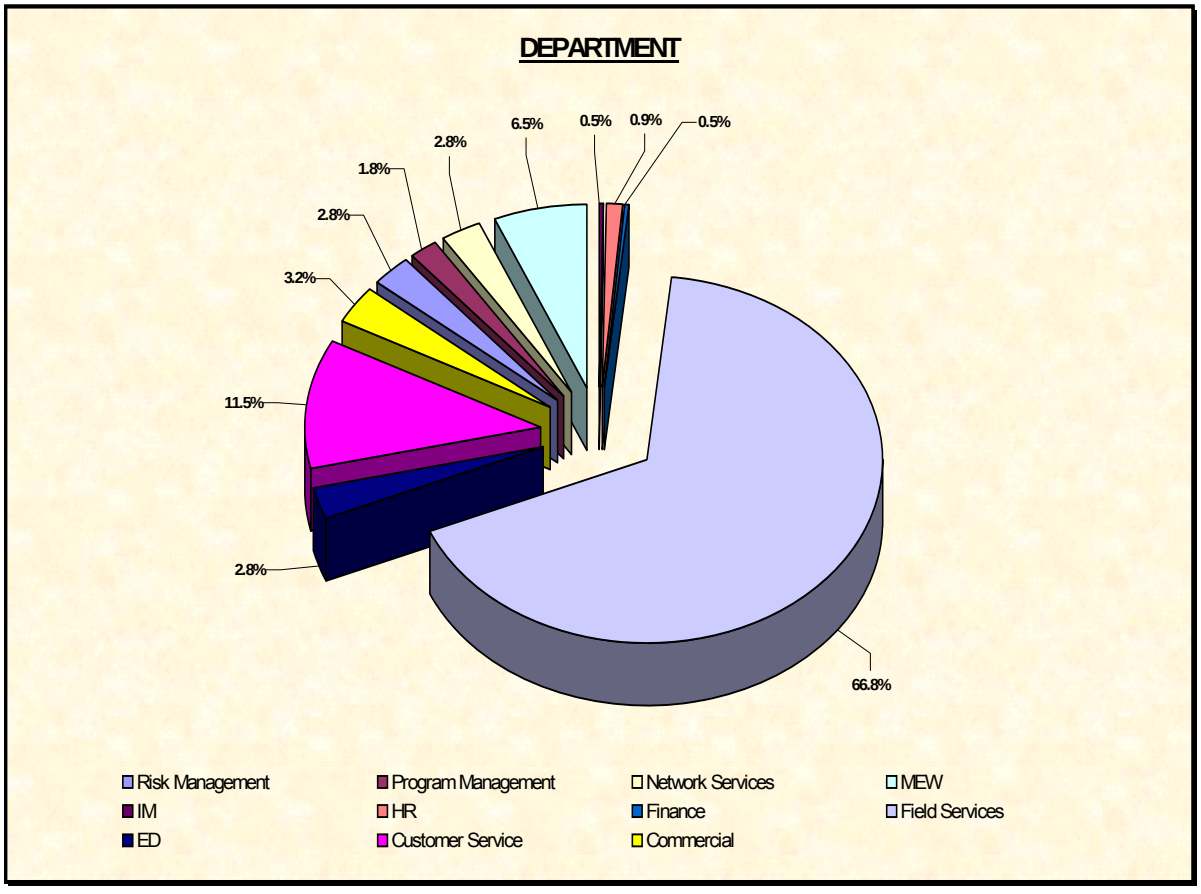
Figure 2.9: Gender



2.3.2.3 Department

The departmental statistics reflected in Figure 2,10 below show that the field services department has by far the highest incident rate. Part of these statistics could be explained by the fact that the field services department comprises of 42% of the total workforce in the Eskom NWR. Another contributing factor could be the fact that field services work in demanding conditions from High risk work environment, distance required to travelled and time factor (cf. 2.3.1.5). The work pressures placed on field services may create physiological pressures on staff which they may be not equipped to process. Staff working in this environment are forever been subjected to high risk decision making and their emotional state may well influence theses decisions.

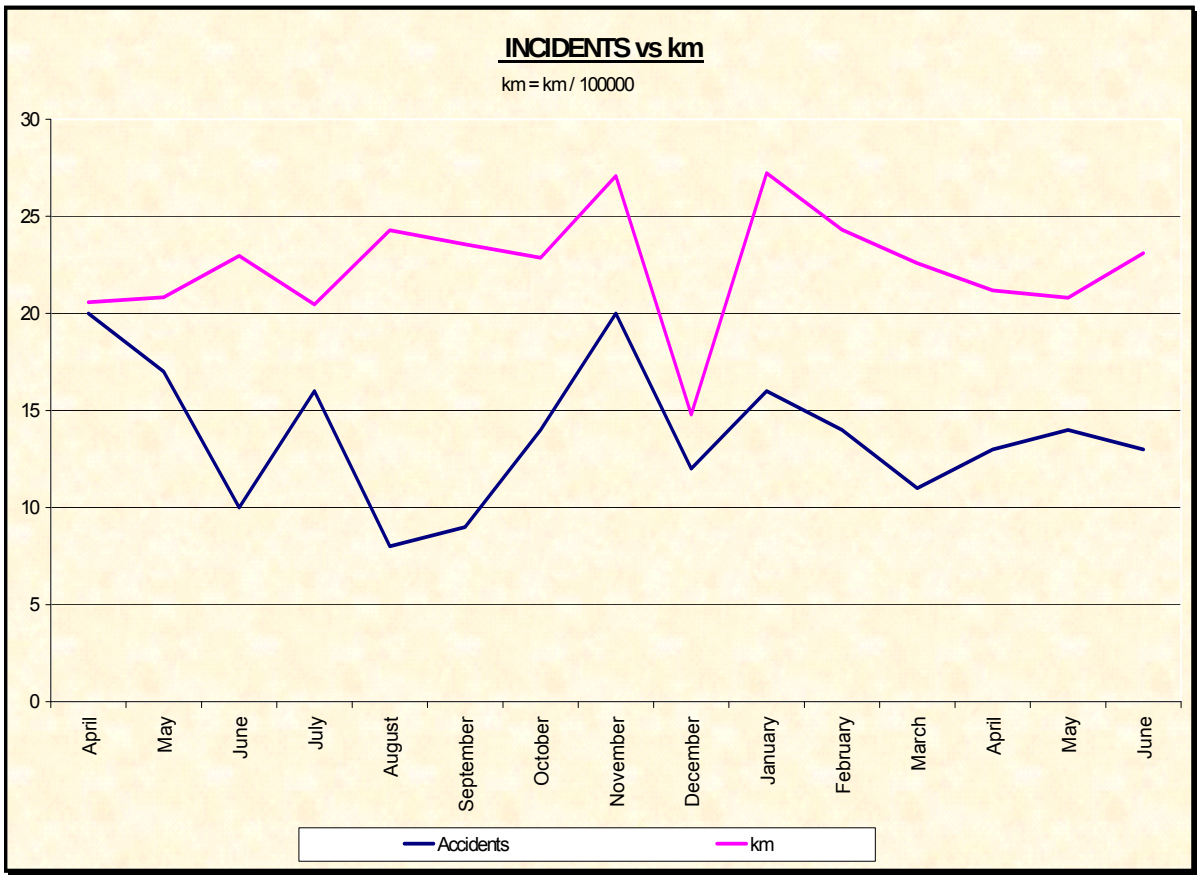
Figure 2.10: Accident statistics by department



2.3.2.4 Kilometres

The km/incident rate shown in Figure 2.11 would suggest that there is a low correlation between kilometres travelled and the incident rate. These statistics would tend to rule out the logical assumption that the more one travels the higher the incident rate would be. Further investigation on the line of kilometre travelled is unlikely to produce meaningful results and contributions to this study

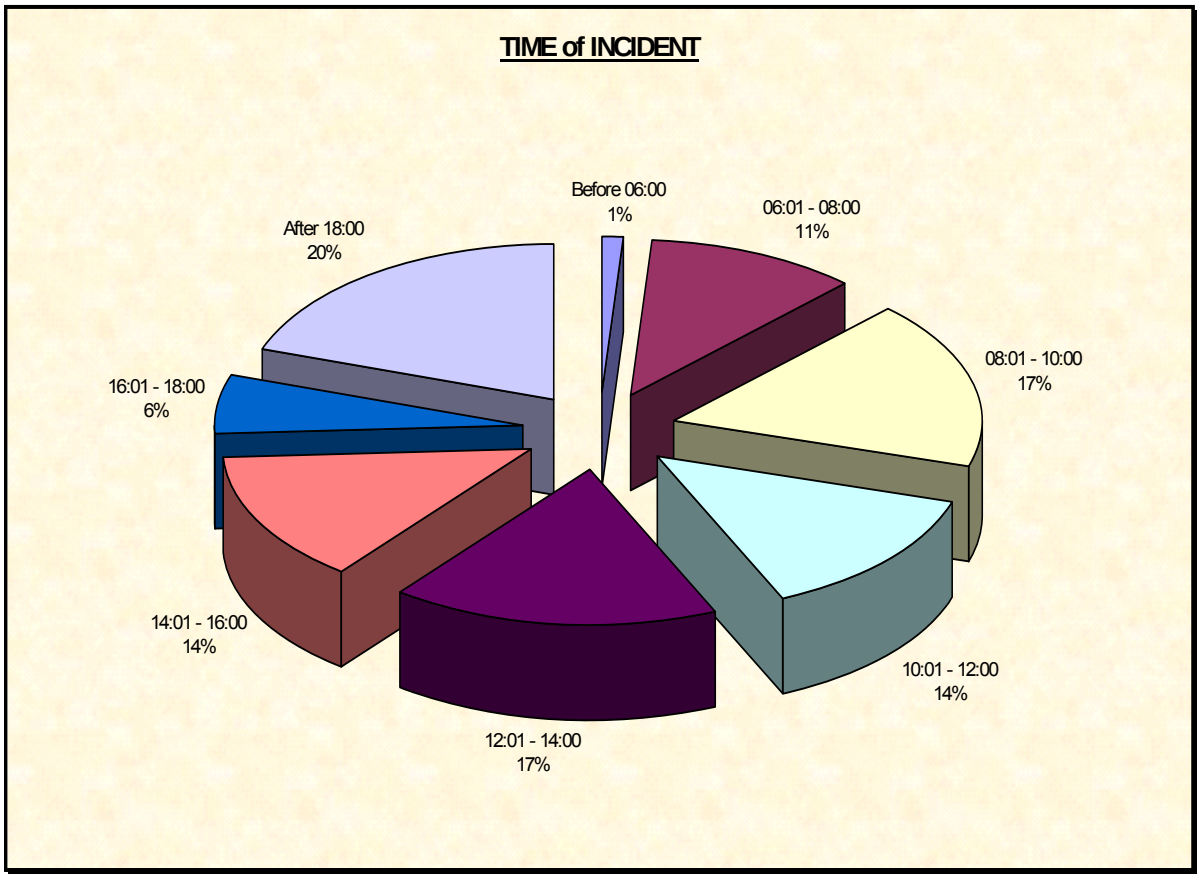
Figure 2.11: Incidents verses kilometres travelled



2.3.2.5 Time

Figure 2.12 shows that the highest incident rate of 20% takes place after 18h00. These statistics coincide with the departmental VIR statistics (cf. 2.3.1.3). The general conditions statistics (cf. 2.3.1.6) would challenge the assumption that the high VIR after 18h00 has much to do with night driving as 63% of vehicle incidents happen in good visibility.

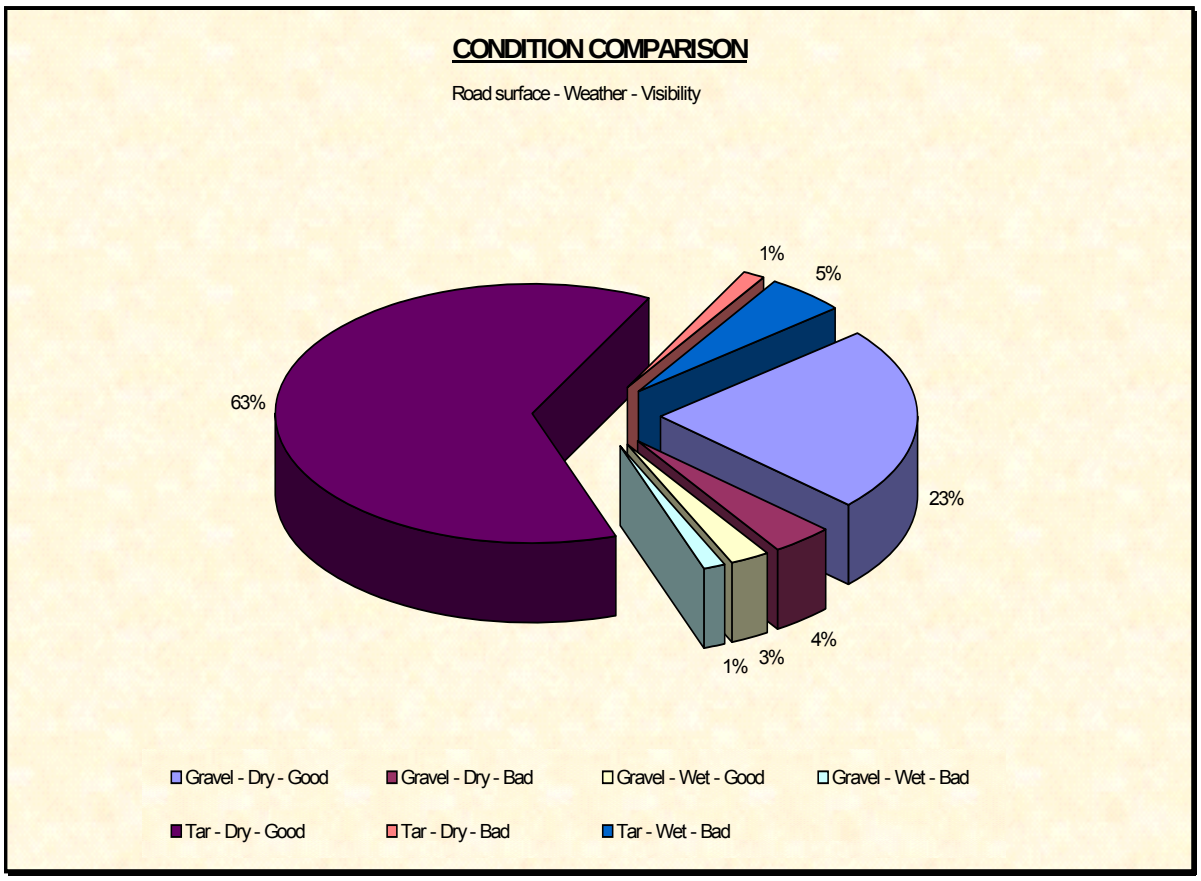
Figure 2.12: Time of incident



2.3.2.6 Conditions

Figure 2.13 below shows that the 63% of the VIR occur under good road surface, weather and visibility conditions. Assuming that most accident can in one way or the other, be avoided; these statistics pose the question as to whether the VIR can be contributed to driver competence or driver attitude?.

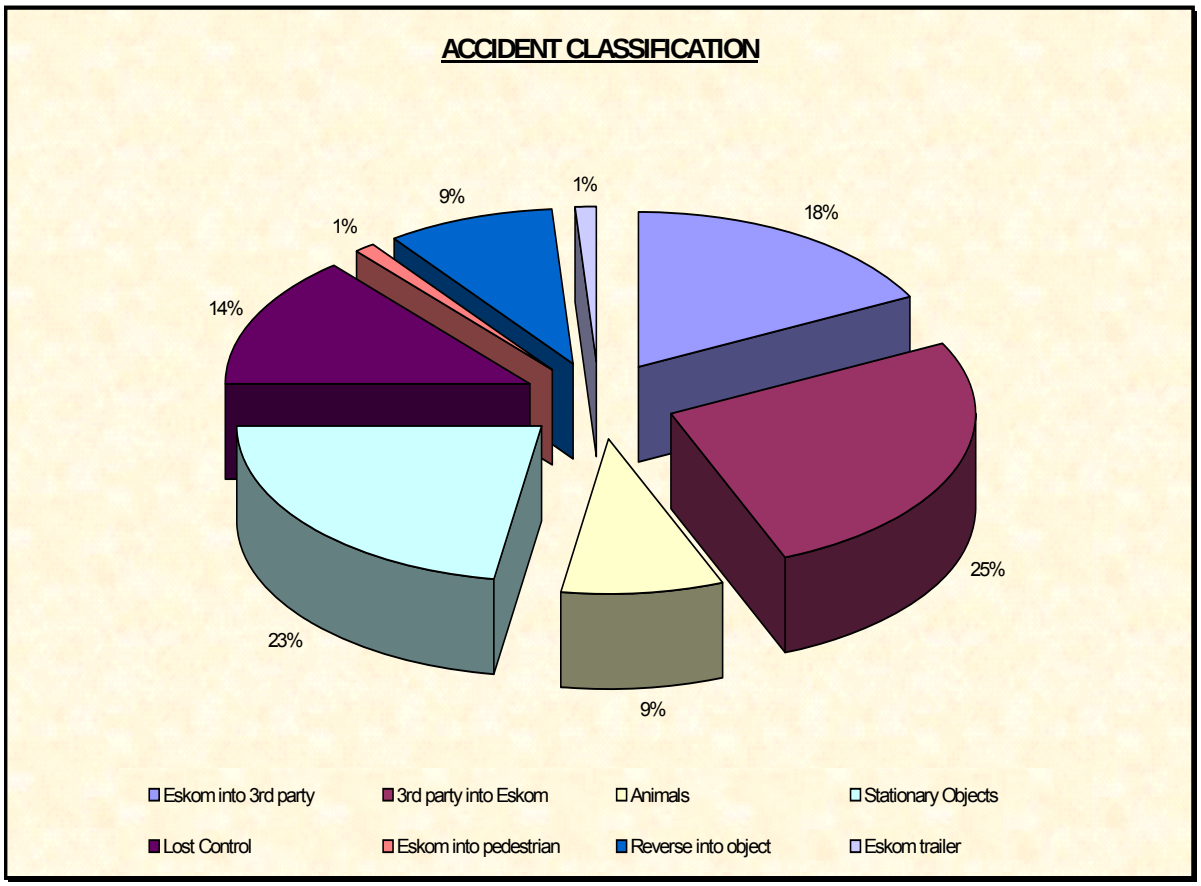
Figure 2.13: Condition comparisons



2.3.2.7 Classification

The statistics presented in Figure 2.14 are significant in so far as they show that 86% of all vehicle incidents were caused by the Eskom driver and as such was arguably within the driver's control. These statistics would once again suggest that there is a problem with driver competence or attitude.

Figure 2.14: Accident classification



ADDENDUM F

EQ RESPONSE SHEET

PARTICIPANT NUMBER	Gen.	P.G	AGE	Grp.	SELF AWARENESS	SOCIAL AWARENESS	USING EMOTIONS	SELF MANAGEMENT
1	M	W	55	A	29	23	25	29
2	F	W	44	A	29	31	29	31
3	M	W	57	A	21	27	25	30
4	F	W	30	A	31	27	29	31
5	M	B	62	A	22	23	29	28
6	M	W	45	A	28	30	28	28
7	M	W	55	A	22	16	23	28
8	M	W	55	A	35	37	38	39
9	M	W	36	A	38	39	37	34
10	F	C	38	B	33	33	34	35
11	F	W	47	B	23	33	20	32
12	M	W	53	A	30	27	27	30
13	M	W	62	B	28	26	28	32
14	F	W	41	B	27	26	26	29
15	M	W	51	B	33	21	23	31
16	M	B	54	B	26	23	19	26
17	F	W	38	A	39	29	29	35
18	M	W	55	B	31	29	32	33
19	M	W	47	B	35	30	34	36
20	F	W	54	A	28	32	31	32
21	M	B	56	A	29	23	28	33
22	M	W	63	A	31	30	34	32
23	F	W	30	A	32	29	34	32
24	M	B	36	B	31	32	31	32
25	F	W	50	B	31	33	29	29
26	F	W	51	B	28	24	28	30
27	M	W	54	A	28	32	28	31
28	M	B	52	B	39	34	39	38
29	F	W	37	B	26	29	28	23
30	F	W	51	B	29	34	31	27
31	M	W	50	A	35	38	39	40
32	M	B	28	B	17	24	31	30
33	M	B	26	B	30	30	29	29
34	M	W	29	A	24	28	29	26
35	M	W	29	B	34	30	33	35
36	F	B	49	B	25	31	23	25
37	F	W	41	B	25	26	22	27
38	M	B	55	B	28	19	22	34
39	F	W	58	B	31	28	27	32
40	M	W	55	A	33	27	23	31
41	F	W	36	A	26	27	38	28
42	M	W	53	A	31	32	31	34
43	M	W	37	B	39	38	37	40
44	M	W	56	A	32	33	30	35
45	M	W	26	A	28	25	29	23
46	M	W	56	B	34	31	35	33
47	M	W	51	A	24	24	25	27
48	M	W	55	B	31	32	33	31
49	F	W	53	B	31	37	31	30
50	M	B	55	B	34	30	32	35
51	F	W	56	B	28	33	23	31
52	F	W	36	A	27	19	20	25
53	F	B	20	B	29	29	27	32
54	F	B	21	B	33	33	31	32
55	F	B	21	B	32	33	31	31
56	F	B	21	B	37	29	26	34
57	M	B	20	B	31	25	26	31
58	F	B	21	B	33	33	32	37
59	F	B	22	B	38	38	32	40
60	F	B	23	B	28	24	25	32
					1800	1748	1748	1886
					75	72.83	72.83	78.58

ADDENDUM G

NARRATIVES

4.4.3 Driver competence

Driver competence is fundamental to driver performance. If an employee is not competent to drive a specific class of vehicle, or is expected to drive in conditions for which he or she has limited inexperience, would increase the safety risk. The following comments were recorded from participants in both the personal interviews and focus group discussions:

5.2.3.1 Training

The questions relating to driver training was intended to identify to what extent driving competence is influencing the VIR in the Eskom NWR.

Focus group response:
People are sometimes confronted with conditions and circumstances they are not skilled enough to handle.

Participant 8:
Eskom driving statistics would suggest that there are a lot of drivers who need more training in unusual condition such as dirt road, rain, high speed and night driving.

The feedback would suggest that there is no real concern amongst the participants in regard to operating a vehicle in normal conditions. There is however, some concern as to driver competence in abnormal conditions such as rain, night, and high speed driving. Driver training would appear to have no real significance relating to the drivers EI other than the possibility that of emotional decision making (emotional self-management)

5.2.3.2 Experience

The issue of driver experience was intended to identify if the lack of experience may be a significant contributing factor to the VIR.

Focus group response:

We are not always practiced in the range of driving we may be subjected to like smoke from veld fires, rain and night driving. Yes, we may be competent in good conditions but less so in abnormal conditios.

Participant 4:

People are not always able to anticipate driver behaviour especially when you, a Bloemfontein driver find yourself driving in Johannesburg peak traffic and you sometimes don't, or can't adjust your diving behaviour to local conditions.

Participant 5:

New drivers sometimes lack confidence in their abilities mainly due to the lack of experience. This would present a higher risk than is normal.

Participant 7:

I believe my driving skills are adequate to handle any of the conditions I am expected to drive in. Some drivers however, tend to make the wrong decisions that place them in situations they are not skilled enough to handle.

Participant 42:

Yes I consider myself to be a competent driver however, having an accident is probably due to a series of events not all of which are under your control. Only in time will a person develop the instincts that will help you to avoid an accident.

In terms of the participants feedback it can be deduced that experience may well contribute to the VIR when a driver finds himself/herself in a unfamiliar situations. The question as to decision making may well indicate a lack of emotional maturity as it would appear that drivers allow themselves to be subjected to situations for which they are not familiar due to external influences such as work demands.

5.2.3.3 Evaluation

The purpose of addressing driver evaluation in this study was to determine if in fact the Eskom NWR drivers are competent, and if not, why do they still drive a vehicle.

Participant 9:

Both national and Eskom driving evaluations with the exception of specialised vehicles, only test the drivers competence at low speed and normally in ideal conditions after which they are declared competent to drive in all conditions. I find this a little strange.

Participant 12:

The reflexes of older people are sometimes slower which could result in an accident that may otherwise have been avoided. People should be evaluated on a regular bases.

Participant 44:

Yes I am competent to drive which does not mean I am immune to accidents. Black people sometimes get their drivers licence and do not have the opportunity to drive for extended periods which results in a situation where a person has a valid driver's licence but is no longer competent to drive.

Based on the above responses, it would appear that that although the Eskom NWR drivers have the basic driving competencies for normal and familiar circumstances but once confronted with vehicles and conditions with which they are not familiar there seems to be a decrease in overall competence and an increase in risk. Education and training initiatives should be preceded by a functional risk assessment.

5.2.4 Attitude

Driver attitude influences how drivers perceive their role and responsibility in the execution of their driving duties. Attitude may result in low or high risk driving behaviour. Attitude is also directly linked to all the EI domains as it determines how drivers would react to their emotions and their acceptance of change.

The participants responded to the question of attitude as follows:

5.2.4.1 Accepting Responsibility

Accepting responsibility for ones actions would be a firm indicator of emotional maturity. The purpose for measuring responsibility is to gain some perspective as regards the perceived levels of emotional maturity of the Eskom NWR drivers.

Focus group response:

Sometimes our attitude prevents us from considering the risk that bad driving practices have to ourselves and others.

Participant 1:

People should learn to better plan their trips rather than behave recklessly or irresponsibly to compensate for their bad planning.

Participant 4:

Some people are impatient and allow this to influence their driving behaviour. I think that a person's general attitude, if negative, will certainly increase the chances of accidents.

When you are feeling emotional for whatever reason, your job sometimes still requires you to drive; the trick is to balance your job requirement with the associated risk. Not too many people are able to do this.

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Participant 5:

I think that people who continually display a bad driving aptitude should not be allowed to drive until they receive some sort of sensitivity training as they are also putting me and others at risk.

Participant 6:

I do not understand the attitude of some drivers, they will say that they were speeding and took risks because they are under a lot of pressure and were late for a meeting. My point is that speeding and being reckless is not the only solution. What about better planning and communication to address these situations?

Some drivers also suffer from denial “it won’t happen to me”.

Participant 7:

I sometimes get irritated with other road users but I will not let this affect my driving behaviour. I am basically an introvert and as such I have no desire to interact with other road users by showing my irritation in any way. I take care of my own driving and I think that others should do the same.

Participant 9:

I will not drive a vehicle in conditions that I do not feel competent to handle regardless of what management or other may think of me.

Participant 20:

Often we do not follow good driving practice such as maintaining a safe following distance because we see other road users doing it.

Participant 34:

I sometimes react badly in traffic and afterwards wonder why I did what I did. I tend to justify my behaviour by arguing that others made me react that way.

Participant 40:

I want other drivers to know how I feel and for them to also experience the inconvenience or even danger they inflict on others. For example if a car overtakes and is in my lane; he will have to go off the road to take evasive action as I will stay in my lane regardless of the consequences to myself or the other vehicle, after all, it is him who created the situation.

The participants response to attitude and taking responsibility for one’s own actions tends to be negative indicating a lack of emotional maturity when operating a vehicle. Attitude relates to all four of the EI domains and there appears to be a need for an IE intervention in this regard.

5.2.4.2 Behaviour

Behaviour may be viewed as the visible indication of a person's attitude towards an object of stimuli. This measurement of behaviour is intended to gain a perspective as to how driver behaviour is perceived in the Eskom NWR.

Focus group response:

I don't think you can always control how you feel but you may still be expected to drive; some people think that if they feel bad, then everyone else should feel bad as well. I think that that is a very negative attitude and will only serve to make matter worse.

Some drivers display a complete disregard to the safety and needs of other road users. These drivers need an attitude check.

I think that drivers with a bad attitude increase the chances of accidents.

Participant 3:

My behaviour towards other drivers will depend on how they treat me. If they have a bad attitude, then so will I.

Participant 4:

I am the type of person that if I am running late for a meeting; rather than speeding and getting all stressed about being late; I would rather phone and let people know I am running late or simple arrive late and explain why.

Participant 6:

Speed does not cause accidents; people do.

Participant 8:

I think that if you treat other road users with respect then they will generally return the complement. People enter short term relationships on the road and how you deal with this will generally influence one's driving behaviour.

Participant 9:

When people are inconsiderate and upset others I normally like to inconvenience them so they can see how it feels.

I suppose I should try and not react to negative emotions, but then again, how many of us can control our-self when we are in bad emotional state?

Participant 12:

I do not think of how I am going to react in specific circumstances, I just deal with the situations as they occur.

If something happens in traffic and it was my fault, then I would feel sorry that I have upset other road users, but if the fault was with them, I would go out of my way to make them feel bad.

Participant 17:

I generally don't allow what other people think of my driving behaviour to upset me too much. Hey, they all drive badly at times, why should I be any different?

Participant 21:

I generally stay calm in traffic even when others are being unreasonable. I actually feel sorry for drivers who allow others to frustrate them.

Participant 22:

I believe that all drivers are subject to distractions that take away their concentration on their driving, even for a short period, and this increases the risk of an accident. I am not certain as to what the answer to this problem is.

The response relating to driver behaviour in the Eskom NWR is generally negative which indicates that there may be a lack of emotional maturity.

The respondents' reaction to the overall question of attitude suggests a strong link to negative emotional behaviour. Most of the responses showed that under certain condition the drivers becomes angry (emotional triggers) and once this happens their attitude towards the situation becomes irrational and increases risk. Based on the

responses it could be deduced that driver attitude may be largely situational and emotionally based.

5.2.5 Emotions

The ability to recognise and manage the role that emotions play in one's overall attitude and behaviour, and how these emotions impact and continually change behaviour is becoming very important. The participants responded to this matter as follows:

5.2.5.1 Self Awareness

Self-awareness relates to how well driver are aware of their emotional triggers and resulting responses when operating a vehicles.

Participant 2:
We are not always aware of our emotional state and only become aware when we are reacting to a situation, then it is too late to think rationally. I think people should recognise their emotional triggers and avoid these situations.

Participant 4:
Some people like myself suffer from road rage. I often get very upset in traffic and then react in a totally unreasonable manner. This condition seems to be limited to my reaction to traffic as I don't get so cross in other unpleasant situations.

Participant 6:
Emotions caused by losing someone close to you or even losing a dog would affect my ability to concentrate on my driving and in so doing increase my risk of an accident.

Participant 8:
I really am not aware of what triggers my negative emotions or how it happens, as there does not seem to be any consistent pattern I can identify with other than possibly my mood at any given time.

Participant 9:
I don't think about my emotional state, it simply is what it is.

Based on the participants response to emotional self awareness it may be deduced that there is a relatively low competence rating regarding this emotional domain.

5.2.5.2 Self-Management

Self-management relates to an individual's ability to manage known emotional responses to known stimuli. The purpose of this measure is to determine if and how emotional self-management may be a contributing factor to the VIR.

Participant 1:
I can sometimes control my emotions but often not. For example when experiencing loss I cannot always control my emotions but I may still be expected to drive.

Participant 2:
I believe that we are all subject to emotions, however, if we give conscious thought to what upsets us, and decide beforehand how we are prepared to react, we will be better equipped to deal with these emotions.

Participant 3:
My ability to manage my emotions will depend on my mood at the time. I sometimes am very good at it, but mostly not.

Participant 7:
People who display bad driving manners on the road do upset me but I tend to control my response to these situations. I seldom feel the need to acknowledge my emotions as I generally practice self-control.

Participant 8:
I generally don't allow the behaviour of others to influence my driving behaviour.

Participant 9:

I don't actually try and recognise my emotional state and then plan as to how I should react to that emotion. I simply react according to how I feel. I don't think that I would be very good at purposefully pre-managing my reactions to my emotions.

Participant 20:

I am mostly aware of my emotions but I seldom manage to control how I react to these emotions. I agree that this could influence my driving risk profile.

Based on the participant's responses it would appear that the ability to control ones emotions would be situational and also determined by the driver's general mood at the time. It would appear that very little proactive thought is exercised in controling driver emotions.

5.2.5.3 Social awareness

In this study, social awareness refers to a driver's ability to interact with other road users. This measure is intended to identify the perceptions of Eskom NWR drivers as to how they feel about social awareness issues.

Participant 8:

I am not particularly sensitive to the needs of other road users. I tend to believe that we should all manage our own situation.

Participant 20:

I don't really think of how my diver behaviour will impact on the wellbeing of other road users.

Participant 27:

I believe that the way you treat other road users will have a ripple effect on society and will influence how drivers behave on the road. One only has to look how the taxi industry is negatively affecting most road users. We see normal people now doing what taxies are doing and accepting this bad behaviour as the norm.

5.2.5.4 Managing Relationships

Participant 8:
How do you manage relationships with other road users? I really do not know. I would imagine that the best one can do is to try not to upset other road users and spoil their day.

Participant 9:
Unreasonable behaviour by other road users can put me in a bad place and my reaction to such situations can upset others.

Participant 12:
I have enough of a time trying to control my own feeling; others should take responsibility for their emotions the same as I do.

Participant 20:
I get cross with some drivers and land up hooting and shouting at them to show my annoyance, fortunately this does not happen too often.

Participant 21:
If you show your frustration to other road users, I believe that you are becoming part of the problem rather than calming the situation.

Participant 23:
Some people like myself, simply cannot stay calm when we continuously see other road users behaving badly. It upsets me and this is normally reflected in my behaviour, on and off the road. Having said this, I must add that I really do try not to get too cross.

From the participants' response to the question of social awareness, it may be deduced that this domain presents a high risk to the VIR.

The participant's responses to discussions pertaining to all of the EI domains suggest that education and training in emotional intelligence may significantly contributor to reducing risk associated with inappropriate emotional behaviour. Considering the

comments it can be deduced that the risks associated with emotional behaviour cannot only be associated with the actual VIR but also potential VIR. Some may argue that it is only luck that is making the difference.

5.2.6 Values

Personal and organisational values may play a role in an individual's perception of what is acceptable behaviour and as such may translate into inappropriate behaviour. The ability to recognise appropriate values and associated behaviour is critical to the individual's attitude and performance. Imprinting appropriate organisational values as could influence personal values over time. This is critical to the management of driver behaviour and associated risk. The participants responded to this point as follows:

5.2.6.1 Personal values

The purpose of this measure is to gain a perspective as to how the participants perceive personal values as a contributor to driver behaviour.

Participant 17:
I am committed to practicing good driving behaviour but I would answer my cell phone whilst driving. It simply does not make sense and is against my values, but I just don't seem to be able to resist it.

Participant 21:
I do not get easily upset. It would take a lot to get me in a negative state. I generally stay calm and even feel sorry for frustrated and stupid drivers.

Participant 22:
I think that all relationships will influence the way you feel at any given time, but in my case, I try not to allow these feelings to negatively influence my behaviour.

Participant 44:

My behaviour would often reflect my rebellious nature. I dislike hypocrisy especially from management who often say one thing and then do another. I would deliberately behave in an opposite manner when confronted with these hypocritical situations.

The participant's response to discussions pertaining to personal values appears to support the deduction that there is not a problem with these values that would significantly contribute to a negative VIR.

5.2.6.2 External values

In this study external values refer to the stated a lived values prescribed by management with specific reference to how these values impact or relate to driver behaviour.

Participant 3:

Management in the Eskom NWR live up to their commitments to safe driving practice. They even reward good practice and punish bad driving behaviour that is not constant with the Eskom values. I appreciate this demonstration of "lived values" otherwise I don't know if I would be able to accept all the organisation's values.

Participant 7:

People are generally influenced by the so called role models; this can be other people or even the organisation itself. For example, if the organisations values state that they value good driving behaviour and then do not take action against those who ignore these values; will send a message that people can ignore the business values. The same can be said for individuals setting examples.

Participant 9:

Friends and associates can influence the way I drive as it can put me in a bad mood and this would reflect on my driving performance. I generally get along with people and have a friendly nature, but that does not mean that I don't sometimes get upset and behave in a way that could damage relationships.

Participant 17:

I allow the general behaviour of individuals and the business to influence my emotional state and consequently my driving behaviour. My attitude then is "well if everyone else is doing it then why can't I?"

Participant 20:

I get very upset when managers make unreasonable work demands on staff. I sometimes wonder if they know what I do. The demands sometimes cause me to take risks I would ordinarily not take.

Participant 31:

I believe that management in the Eskom NWR are committed to encouraging and even enforcing good driving behaviour, I sometimes think that they don't balance work expectations with their expressed driving values as these tend to contradict each other at times. For example, management would state "No work is worth your safety" but if you don't perform your job will be at risk.

From the participants; response it can be deduced that practical execution of "external values" would influence how they as individuals would react to and adapt their personal values. The seemingly high dependence of external factors may suggest a weakness in the EI domains of self-awareness and self-management.

From the above responses it can be deduced that that values would fulfil an emotional maintenance role and would relate to the EI domain of emotional management. The significance of values is that drivers can within the concepts of EI, learn how to recognise and manage their personal values "value management" however, sustainable value management is dependent on the broader environment such as management living the organisational values.

ADDENDUM H

FACTOR ANALYSIS

Correlation between EI and vehicle incidents

	Self Awareness	δ	Social Awareness	δ	Emotional Awareness	δ	Self Management	δ
Number of incidents	-0.69683**	0.30245	-0.772509009**	0.27004	-0.641922252**	0.2958	-0.683575574**	0.2539

Significance: * (p = 0.05) (r ≥ 0.31)

** (p = 0.01) (r ≥ 0.42)

T-Test (Male – Female)

Group Statistics					
	gender	N	Mean	Std. Deviation	Std. Error Mean
Self-Aware	Male	34	30.03	5.120	.878
	Female	26	29.96	4.005	.785
Social-Aware	Male	34	28.47	5.462	.937
	Female	26	30.00	4.243	.832
Use Emotions	Male	34	29.76	5.105	.876
	Female	26	28.31	4.398	.862
Self -Management	Male	34	31.88	4.013	.688
	Female	26	30.85	3.749	.735

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
SelfAware	Equal variances assumed	.921	.341	.056	58	.956	.068	1.217	-2.368	2.504
	Equal variances not assumed			.058	57.957	.954	.068	1.178	-2.290	2.426
SocAware	Equal variances assumed	1.767	.189	-1.180	58	.243	-1.529	1.296	-4.123	1.064
	Equal variances not assumed			-1.221	57.976	.227	-1.529	1.253	-4.037	.979
UsEmot	Equal variances assumed	.817	.370	1.162	58	.250	1.457	1.254	-1.053	3.967
	Equal variances not assumed			1.186	57.120	.241	1.457	1.229	-1.004	3.918
SelfManag	Equal variances assumed	.362	.550	1.019	58	.312	1.036	1.016	-.998	3.071
	Equal variances not assumed			1.029	55.643	.308	1.036	1.007	-.982	3.054

T-Test (Group A – B)

Group Statistics						
	group		N	Mean	Std. Deviation	Std. Error Mean
SelfAware	dimension1	A	25	29.28	4.686	.937
		B	35	30.51	4.591	.776
SocAware	dimension1	A	25	28.32	5.483	1.097
		B	35	29.71	4.599	.777
UsEmot	dimension1	A	25	29.52	4.942	.988
		B	35	28.86	4.797	.811
SelfManag	dimension1	A	25	30.88	4.003	.801
		B	35	31.83	3.839	.649

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
SelfAware	Equal variances assumed	.026	.872	-1.018	58	.313	-1.234	1.213	-3.662	1.193
	Equal variances not assumed			-1.014	51.203	.315	-1.234	1.217	-3.677	1.208
SocAware	Equal variances assumed	.442	.509	-1.068	58	.290	-1.394	1.305	-4.007	1.218
	Equal variances not assumed			-1.037	45.987	.305	-1.394	1.344	-4.100	1.311
UsEmot	Equal variances assumed	.085	.772	.521	58	.604	.663	1.272	-1.883	3.209
	Equal variances not assumed			.518	50.896	.606	.663	1.278	-1.904	3.230
SelfManag	Equal variances assumed	.089	.767	-.927	58	.358	-.949	1.023	-2.997	1.100
	Equal variances not assumed			-.920	50.499	.362	-.949	1.031	-3.018	1.121

ONE -WAY

Descriptives											
							95% Confidence Interval for Mean				
			N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Min	Max	Between- Component Variance
SelfAware	20-35yrs		15	30.47	5.125	1.323	27.63	33.30	17	38	
	36-50yrs		17	30.41	5.233	1.269	27.72	33.10	23	39	
	51-65yrs		28	29.50	4.069	.769	27.92	31.08	21	39	
	Total		60	30.00	4.632	.598	28.80	31.20	17	39	
	Model	Fixed Effects			4.688	.605	28.79	31.21			
		Random Effects				.605[a]	27.40[a]	32.60[a]			-.803
SocAware	20-35yrs		15	29.13	3.944	1.018	26.95	31.32	24	38	
	36-50yrs		17	30.82	4.965	1.204	28.27	33.38	19	39	
	51-65yrs		28	28.11	5.370	1.015	26.02	30.19	16	37	
	Total		60	29.13	4.990	.644	27.84	30.42	16	39	
	Model	Fixed Effects			4.940	.638	27.86	30.41			
		Random Effects				.826	25.58	32.69			.762
UsEmot	20-35yrs		15	29.60	2.720	.702	28.09	31.11	25	34	
	36-50yrs		17	29.65	6.194	1.502	26.46	32.83	20	39	
	51-65yrs		28	28.57	4.872	.921	26.68	30.46	19	39	
	Total		60	29.13	4.827	.623	27.89	30.38	19	39	
	Model	Fixed Effects			4.882	.630	27.87	30.40			
		Random Effects				.630[a]	26.42[a]	31.84[a]			-.810
SelfManag	20-35yrs		15	31.67	4.082	1.054	29.41	33.93	23	40	
	36-50yrs		17	31.12	5.048	1.224	28.52	33.71	23	40	
	51-65yrs		28	31.50	3.073	.581	30.31	32.69	26	39	
	Total		60	31.43	3.903	.504	30.43	32.44	23	40	

Test of Homogeneity of Variances				
	Levene Statistic	df1	df2	Sig.
SelfAware	1.213	2	57	.305
SocAware	1.393	2	57	.257
UsEmot	4.020	2	57	.023
SelfManag	2.922	2	57	.062

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
SelfAware	Between Groups	13.149	2	6.575	.299	.743
	Within Groups	1252.851	57	21.980		
	Total	1266.000	59			
SocAware	Between Groups	78.051	2	39.025	1.599	.211
	Within Groups	1390.882	57	24.401		
	Total	1468.933	59			
UsEmot	Between Groups	16.594	2	8.297	.348	.707
	Within Groups	1358.339	57	23.831		
	Total	1374.933	59			
SelfManag	Between Groups	2.635	2	1.318	.084	.920
	Within Groups	896.098	57	15.721		
	Total	898.733	59			

Robust Tests of Equality of Means					
		Statistic[a]	df1	df2	Sig.
SelfAware	Welch	.301	2	29.386	.742
	Brown-Forsythe	.273	2	42.409	.762
SocAware	Welch	1.462	2	34.514	.246
	Brown-Forsythe	1.746	2	52.626	.185
UsEmot	Welch	.421	2	33.615	.660
	Brown-Forsythe	.363	2	37.715	.698
SelfManag	Welch	.059	2	27.848	.943
	Brown-Forsythe	.074	2	38.900	.929
a. Asymptotically F distributed.					

Multiple Comparisons								
Tukey HSD								
Dependent Variable		(I) age	(J) age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
dimension1	SelfAware	20-35yrs	36-50yrs	.055	1.661	.999	-3.94	4.05
			51-65yrs	.967	1.500	.796	-2.64	4.58
		36-50yrs	20-35yrs	-.055	1.661	.999	-4.05	3.94
			51-65yrs	.912	1.442	.803	-2.56	4.38
		51-65yrs	20-35yrs	-.967	1.500	.796	-4.58	2.64
			36-50yrs	-.912	1.442	.803	-4.38	2.56
	SocAware	20-35yrs	36-50yrs	-1.690	1.750	.601	-5.90	2.52
			51-65yrs	1.026	1.581	.794	-2.78	4.83
		36-50yrs	20-35yrs	1.690	1.750	.601	-2.52	5.90
			51-65yrs	2.716	1.519	.183	-.94	6.37
		51-65yrs	20-35yrs	-1.026	1.581	.794	-4.83	2.78
			36-50yrs	-2.716	1.519	.183	-6.37	.94
	UsEmot	20-35yrs	36-50yrs	-.047	1.729	1.000	-4.21	4.11
			51-65yrs	1.029	1.562	.788	-2.73	4.79
		36-50yrs	20-35yrs	.047	1.729	1.000	-4.11	4.21
			51-65yrs	1.076	1.501	.755	-2.54	4.69

		51-65yrs	20-35yrs	-1.029	1.562	.788	-4.79	2.73
			36-50yrs	-1.076	1.501	.755	-4.69	2.54
	SelfManag	20-35yrs	36-50yrs	.549	1.405	.919	-2.83	3.93
			51-65yrs	.167	1.269	.991	-2.89	3.22
		36-50yrs	20-35yrs	-.549	1.405	.919	-3.93	2.83
			51-65yrs	-.382	1.219	.947	-3.32	2.55
		51-65yrs	20-35yrs	-.167	1.269	.991	-3.22	2.89
			36-50yrs	.382	1.219	.947	-2.55	3.32

Post Hoc Tests

SelfAware		
Tukey HSD[a,b]		
age	N	Subset for alpha = .050
		1
51-65yrs	28	29.50
36-50yrs	17	30.41
20-35yrs	15	30.47
Sig.		.805
Means for groups in homogeneous subsets are displayed.		
a. Uses Harmonic Mean Sample Size = 18.610.		
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.		

UsEmot		
Tukey HSD[a,b]		
age	N	Subset for alpha = .050
		1
51-65yrs	28	28.57
20-35yrs	15	29.60
36-50yrs	17	29.65
Sig.		.781
Means for groups in homogeneous subsets are displayed.		
a. Uses Harmonic Mean Sample Size = 18.610.		
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.		

Homogeneous Subsets

SelfManag		
Tukey HSD[a,b]		
age		Subset for alpha = .050
	N	1
36-50yrs	17	31.12
51-65yrs	28	31.50
20-35yrs	15	31.67
Sig.		.907
Means for groups in homogeneous subsets are displayed.		
a. Uses Harmonic Mean Sample Size = 18.610.		
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.		

SocAware		
Tukey HSD[a,b]		
age		Subset for alpha = .050
	N	1
51-65yrs	28	28.11
20-35yrs	15	29.13
36-50yrs	17	30.82
Sig.		.223
Means for groups in homogeneous subsets are displayed.		
a. Uses Harmonic Mean Sample Size = 18.610.		
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.		

Reliability

Scale: Total

Case Processing Summary			
		N	%
Cases	Valid	60	100.0
	Excluded[a]	0	.0
	Total	60	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics	
Cronbach's Alpha	N of Items
.865	32