AN APPROACH TO SERVICE DELIVERY IN THE GOVERNMENT SECTOR

by

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DECLARATION

I, Lerato Mahloane, hereby declare that the contents of this dissertation represent my own unaided work, and that the dissertation has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

Signed

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Date

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ABSTRACT

The Department of the Premier: Orgnisational Development is mandated to coordinate provincial intervention that will assist the provincial departments of the Western Cape to improve the efficiency of their service delivery. Increasing customer demand for quality services have virtually forced the Department of the Premier: Orgnisational Development to adopt the concept of quality in every aspect of the business.

The Department of the Premier: Orgnisational Development is the center of government focussed on strategically guiding the province and centrally coordinating the strategic functions in order to deliver seamless and holistic governance towards realising the iKapa Growth and Development strategies and transforming the Western Cape into a home for all. The Department of the Premier, through holistic governance, deliver strategic leadership, outcome based management, needs-based services and efficient and effective corporate overnment to the Provincial Government and the citizens of the Western Cape at large.

The primary research objectives of this study are the following:

- To identify mechanisms to continuously improve the level of service delivery within the department in accordance with set standards.
- To identify mechanisms to continuously measure, analyse and improve processes within the department in order to meets and exceed customer expectations.
- To create a culture and platform for continuous improvement within the Government Sector.
- To create an enablement mechanisms for staff to execute their duties effectively.

It is anticipated that the research will lead to an improvement in the current state of service delivery at the Department of the Premier: Directorate Organisational Development, by identifying and providing possible solutions that impedes service delivery.

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GLOSSARY OF TERMS

Batho Pele	Refers to the word "Putting People First", which was introduced by Government in 1997. It is an initiative to get public servants to be service orientated, to strive for excellence in service delivery and to commit to continuous service delivery improvement.
Six Sigma	Refers to a business management strategy, originally developed by Motorola, that today enjoys wide-spread application in many sectors of industry.
Khaedu	Refers to a TshiVenda word meaning "challenge", the purpose of Khaedu is to give managers from national and provincial departments the opportunity to experience first-hand the challenges experienced at the coalface of delivery and also to enable then to craft policies that are informed by realities on the ground.
Imbizo	An imbizo is a forum where there is an unmediated interaction between government and the people. During such an interaction, people get a chance to highlight their concerns, grievances about the service delivery by government.
Lekgotla	Refers to Sesotho word meaning "court", it is a meeting called by government to discuss strategy planning. It is attended President, Premiers, MEC's, HOD's and etc.
Jamboree	Jamboree is an intervention aimed to ensure greater access to government services by taking government services to the people,

particularly for those who where previously disadvantaged.

CHAPTER 1 : SCOPE OF THE RESEARCH

1.1 INTRODUCTION AND MOTIVATION

The Department of the Premier consists of different Chief Directorates, one of which is the Chief Directorate: Organisational Development (OD), which will form the objective of this research. The Department of the Premier previously reported to a Chief Directorate within the Department Provincial Administration: Western Cape. As a result of a restructuring exercise, the Chief Directorate: OD was developed with functions Directorate: Organizational Development Intervention (ODI), Directorate: Diagnostic Survey (DS) and Directorate: Intervention Assessment (IA).

According to Beckhard (1969:9), OD is defined as, "an effort, planned, organisation-wide, and managed from the top, to increase organisation effectiveness and health through planned interventions in the organisation's processes, using behavioral-science knowledge". In essence, OD is a planned system of change. Organisational Development is guided by mandate that also stipulate that service delivery must be monitored constantly to improve the level thereof, however this is not being executed effectively.

Due to the intangible nature of service, it is difficult to determine whether the service that the Government sector offer is of a high level of quality, or for that matter, if quality is maintained. As the result, the research will endeavour to mitigate the issue of poor service levels within the OD by conducting research into the following aspects:

- Continuous improvement.
- Measuring of performance.
- Management responsibility.
- Six Sigma.

1.2 BACKGROUND TO THE RESEARCH PROBLEM

The mandate for OD is to assist the provincial departments to improve their level of service delivery. The department does not have documented business processes in place, culminating in duplication of work. Current processes are also not analysed in order to identify any problem areas for improvement.

According to the Department of Public Service and Administration (DPSA) (2006:209), monitoring and evaluation must take place to ensure that what was set out to be achieved is brought to pass and that it remains aligned to the strategic objectives of the organisation. Furthermore, that monitoring and evaluation must be a continuous processes that feeds back into the planning phase to ensure continual realignment, growth and development.

1.3 STATEMENT OF THE RESEARCH PROBLEM

Against the above background, the research problem to be researched within the ambit of this dissertation, reads as follows: "Service delivery within the Government Sector is not within the set standards, culminating in a degradation of service delivery".

1.4 THE RESEARCH QUESTION

The research question to be researched within the ambit of this dissertation, reads as follows: "To what extent is management in Government Sector: Chief Directorate: OD, committed towards continuous improvement"?.

1.5 INVESTIGATIVE (SUB-) QUESTIONS

The investigative questions to be researched in support of the research question reads as follows:

- Are the objectives of the Chief Directorate: OD clearly defined and understood by all employees?

- Does the Chief Directorate: OD track and keep record of business process improvement and communicate those business processes throughout the whole Chief Directorate: OD?
- Does the Chief Directorate: OD analyse business processes to discover the root cause of problems?
- Does Chief Directorate measure the outcomes of the interventions implemented to determine their effectives?

1.6 PRIMARY RESEARCH OBJECTIVES

The primary research objectives of this dissertation read as follows:

- To continuously improve on the levels of service delivery in the Government sector in accordance with set standards.
- To continuously measure, analyze and improve processes in order to meets and exceed customer expectations.
- To create a culture and platform for continuous improvement within the Government Sector.
- To have mechanism in place that will enable staff to perform their duties effectively.

1.7 THE RESEARCH PROCESS

The research process provides insight into the process of 'how' the research will be conducted from developing the proposal to submitting the dissertation. Remenyi, Williams, Money and Swartz (2002:64-65), explains that the research process as consisting of eight specific phases, which will be applied to this research study. The phases include:

- Reviewing the literature.
- Formalizing a research question.
- Establishing the methodology.
- Collecting evidence.
- Analyzing the evidence.
- Developing conclusions.
- Understanding the limitations of the research.

- Producing management guidelines or recommendations.

1.8 RESEARCH DESIGN AND METHODOLOGY

Case study research will be used in this dissertation as research method. According to Yin (1994:1), case study research can be used in many situations, including:

- Policy, political science, and public administration research.
- Community psychology and sociology research.
- Organizational and management studies.
- City and regional planning research, such as studies of plans, neighbourhoods or public agencies.
- Research into the social science, the academic disciplines as well as professional fields such as business administration, management science, and social work.

Case studies essentially investigate events in its real-life context and it addresses the following: It answers 'How' and 'Why' questions, and explore events and aids the understanding thereof in a particular context. It is seen as an all-inclusive research strategy when contextual conditions are the subject of the research.

Four types of case studies can be identified namely, descriptive, illustrative, experimental and explanatory case studies. Collis and Hussey (2003:68-70), implies that case studies are used in areas where there's an inadequate amount of knowledge. Yin (1994:20-27), focuses on the important elements of case study research design, namely:

- Study questions.
- Study propositions.
- Unit of analysis.
- Linking data to propositions.
- Criteria for interpreting findings

1.9 DATA COLLECTION DESIGN AND METHODOLOGY

According to Cooper & Schindler, 2006:204, 208, 210-211), there are three types of interviews identifiable, namely:

- Unstructured interviews.
- Semi-structured interviews.
- Structured interviews

The research will mainly focus on using a questionnaire as a method of data collection. A questionnaire consists of a list of questions compiled in order to elicit reliable responses from a chosen sample with the aim to determine what the participants do, think or feel. The questionnaire will be structured. The sample frame will consist of Senior Managers, Middle Management and Lower Level staff members of Government Sector within Chief Directorate: OD.

1.10 DATA VALIDITY AND RELIABILITY

According to Collis and Hussey (2003:186), 'validity' is concerned with the extent to which the research findings accurately represents what is happening. More specific, whether the data is a true picture of what is being studied. According to Cooper and Schindler (2006:318-320), three major forms of validity can be identified, namely 'content validity', 'criterion-related validity' and 'construct validity'.

Reliability (also referred to as 'trustworthiness'), is concerned with the findings of the research (Collis & Hussey, 2003:186). The findings can be said to be reliable if you or anyone else repeated the research and obtained the same results. There are three common ways of estimating the reliability of the responses to questions in questionnaires or interviews, namely:

- Test re-test method, which will be applied in this research study, and the
- split halves method, and the
- internal consistency method.

1.11 ETHICS

In the context of research, according to Saunders, Lewis and Thornhill, (2001:130), "… ethics refers to the appropriateness of your behavior in relation to the rights of those who become the subject of your work, or are affected by it". The following ethics will be observed in the research study:

- **Informed consent:** Participants should be given the choice to participate or not to participate, and furthermore be informed in advance about the nature of the study.
- **Right to privacy:** The nature and quality of participants' performance must be kept strictly confidential.
- **Honesty with professional colleagues:** Findings must be reported in a complete and honest fashion, without misrepresenting what has been done or intentionally misleading others as to the nature of it. Data may not be fabricated to support a particular conclusion.
- **Confidentiality/Anonymity:** It is good research practice to offer confidentiality or anonymity, as this will lead to participants giving more open and honest responses.

1.12 RESEARCH ASSUMPTIONS

The following research assumptions pertain to the research study:

- Service delivery is not in accordance with legislative requirements and the provincial mandate.
- The level of service delivery is not monitored, nor is it measured.
- There are no documented business processes in place.
- There is a legislative requirement that all records must be maintained; however the department does not comply with this requirement.

1.13 RESEARCH CONSTRAINTS

The following constraints apply to the research:

- The research is limited to Chief Directorate: OD.

- The availability of Senior Managers, Middle Management and Lower staff members may pose a constraint to the research.

1.14 CHAPTER AND CONTENT ANALYSIS

The following chapter and content analysis will be applicable to the research study:

Chapter 1 - Scope of the research: In this chapter, background will be provided of the scope of the research taking place within the Government Sector. The research process will be explained and the research design and methodology elaborated upon. The research constraints will be listed, and a high level overview provided of the chapter and content analysis of the dissertation. The chapter will be concluded with a list of primary research objectives.

Chapter 2 - Holistic perspective of the research environment: In this chapter, service delivery within the Government Sector of Chief Directorate: OD will be analysed in detail. Specific focus will be levelled at external and internal factors, which impact on service delivery of the Government Sector.

Chapter 3 - Quality management (A literature review): In this chapter, an in depth literature review will be conducted on the concept of 'Continuous Improvement'.

Chapter 4 - Data collection design and methodology: In this chapter, the survey environment will be elaborated upon and the de-limitations of the survey listed. The approach to data collection will be explained and the target population defined. The measurement scales to be used in the survey and the survey design will be explained in detail. The chapter will be concluded with a list of questions to be posed to the target population.

Chapter 5 - Data analysis, interpretation of results and conclusion: In this chapter, data gleaned from the survey conducted within the ambit of chapter 4, will be analyzed in detail and interpreted in terms of the primary theme of the

dissertation. In addition, the results from the survey will be mapped to the literature review conducted within the ambit of chapter 3. In addition, the research will be concluded and final analogies drawn.

1.15 SIGNIFICANCE OF THE PROPOSED RESEARCH

The significance of the propose research pertains to the fact that although service delivery is an important aspect of Government Sector, the culture of continuous improvement is not part of every day life style of public servants. It is anticipated that by doing this research it will highlight how important continuous improvement is and what value would it add to the organisation.

1.16 CONCLUSION

Of importance to the reader is that within the ambit of this dissertation, extensive use will be made of abbreviations to denote the various departments within the Department of the Premier: Organisational Development. This practice of using abbreviations was intentional to fall in line with accepted practices and norms within the department, and furthermore to map to the daily use of the abbreviations in the department. In addition this research will serve as input to the department to improve its processes and the use of abbreviations will facilitate the process.

CHAPTER 2: BACKGROUND TO RESEARCH ENVIRONMENT

2.1 COMPANY BACKGROUND

The Department of the Premier is the central unit of strategic leadership and provincial coordination; it provides needs-driven and value-based strategic and cooperative leadership within the Western Cape Province in order to achieve holistic governance, shared growth and sustainable development. The department pursues its mission by working to achieve the following strategic objectives:

- Supporting the realization of the goals of the provincial Growth and Development Strategy (GDS), by ensuring governance through horizontal and vertical alignment.
- Contributing to the achievement of social cohesion towards transformation of poor and marginalized communities.
- Creating a governance environment conducive to the implementation of the programmes of the provincial growth and development strategy.
- Enhancing and broadening strategic leadership of the Provincial Government of the Western Cape.
- Informing and empowering people of the Western Cape through effective communication.
- Enhancing the capacity of the developmental state.
- Enhancing service delivery and developing society through the effective use of Information and Communication Technologies (ICT).

The year 2008/09 was the last year of the third electoral cycle in South Africa since the 1994 democratic elections. The forthcoming election which took place in the first quarter of the financial year 2009/10, which will provide a platform for setting of the strategic direction for the period from 2009 to 2014. The Annual Performance Plan (APP) might still remain aligned to the strategic direction of the department of the Premier which was re-engineered in 2006. The deliverables and the focus could still be a continuation of the implementation of the provincial growth and development strategy of 2008/09.

The department of the Premier, over the past year, contributed significantly through its various units to cement the democracy in the province and in the Provincial Administration of the Western Cape.

The main challenges faced by the Department of the Premier during the 2008/09 financial year related to the management of human disaster that resulted from the displacement of foreign nationals during May 2008. It placed significant strain on the department's financial and human resources, and necessitated reprioritisation of budget allocations.

The previous Premier and Executive Council was appointed in July 2008. The ushering in of a new executive council for the province following the resignation of the former Premier necessitated to a shift in the focus programmes within the current resource provisions of the department. The new Premier and Executive Council was appointed in April 2009, which might necessitate to a shift of the strategic objectives and deliverables for 2009 to 2014. The deliverables for 2009/10, reflected in the challenges and remedial actions that are discussed below, were still under the old premier which was appointed in July 08 before the new elections that took place in April 2009.

2.1.1 Deliverables for 2009/10

The key deliverables for 2009/10 do not constitute new deliverables, but rather a deepening and strengthening of existing key focus areas, which are elaborated upon as follows:

- Further embedding the Growth and Development Strategy (GDS) through focused policy development and implementation, focused institutional improvement and development initiatives, initiatives aimed at improved governance, and supported by ICT, monitoring and evaluation, and communication deliverables in accordance with the guiding frameworks.
- Leadership and coordination to implement 2010 FIFA World Cup Strategic and business plans.

- Strengthening the provincial human resource base through strategically focused internal human and social capital interventions aimed at improving and deepening service delivery.
- Strengthening the linkage between provincial strategies and staff performance through increased delivery of Project Khaedu, and further roll-out and enhanced support of a Provincial Government of the Western Cape (PGWC) Staff Performance Management Information System (PERMIS) and Service Delivery Improvement Programme for PGWC.
- Influencing positive behavioural change through strengthening the integrated moral regeneration programme, the PGWC anti-corruption campaign, the Social Transformation Programme, and related initiatives.
- Improved service delivery and accessibility to government information and services by further roll-out of ICT deliverables, the Jamboree programme and the Festivals and Events Organising Committee.

In addition, the department will seek to maximize Information Communication Technology Systems (ICTS) in the course of substantially enhancing administration and service delivery programmes.

2.2 CHALLENGES FACED BY DEPARTMENT, MITIGATION TO MEET CHALLENGES AND THE EFFECT OF CHANGES.

The Department of the Premier is responsible for the following programmes or functions: Administration, Institutional Development, Policy and Governance and ICT within PGWC of which the progress analysis will be discussed in detail below as follows:

2.2.1 Administration Programme

This programme provides administrative support to the Premier Executive Council and the Director-General in fulfilling their legislative and oversight function and in promoting good governance.

- **Progress analysis for Administration Programme**

Good progress has been made in the management of the Cabinet and its related structures. A concerted attempt will be made during the 2009/10 financial year to seek closer alignment between the national and provincial strategic imperative. The strategic management agendas of the different structures will have to be improved in order to achieve the proposed alignment. A revamp of the provincial cluster system is in an advanced stage and will be implemented during the 2009/10 financial year. It is anticipated that the improved system will refocus the manner in which the Cabinet, its structures and the Provincial Top Management functions.

The Directorate Social Dialogue and the Human Rights and Directorate Forensic Investigative Unit, delivered significant products to ensure that enhancement of the capacity of the developmental state. During the period of xenophobic violence, this department played a key role in the security, mediation and reintegration processes of the internally displaced foreign nations. Funds were received from the National Disaster fund to defray the bulk of the expenditure incurred by this department in respect of the IDPs. The mobilisation, management, and coordination of a broad base of stakeholders in support of the efforts to manage the displacement of foreign nations during May 2008 serves as a good example of how this department conducted itself in ensuring the upholding of democratic principles.

Effort to fight and reduce fraud and corruption were strengthened through the establishment of the Western Cape Anti-Corruption Forum and subsequent election of its office bearers. The Forensic Investigative Unit steered the processes of developing and implementing fraud prevention plans, establishing risk management committees and conducting fraud risk assessment in the provincial departments. Various training and awareness programmes have been embarked upon to increase the awareness of fraud and corruption and to improve knowledge in preventative measures.

- **Analysis of constraints and measures planned the for the Administration Programme**

The greatest constraints in the sub-programme Executive Council Support relates to the continued issue to align strategic agendas across the decision-making structures of the provincial government. It is however anticipated that the implementation of the revamped cluster system will improve alignment across the provincial government. The department will continue to facilitate and support the strategic role played by the Cabinet and its related structures.

The performance of the sub-programme Director-General Support was greatly affected by the displacement of foreign nations. As a result, a number of deliverables had to be reprioritized while the staff managed the human disaster. The Directorate Social Dialogue and Human Rights together with the Social Transformation Programme Project Office are in the process of developing a longer-term, sustainable programme to ensure social inclusivity in priority communities.

- **Description of planned quality improvement measures for the Administration Programme**

The improved strategic alignment of agendas of the relevant structures will contribute to an improvement in the quality of work of these structures and will be further strengthened by the institutionalisation of the envisaged new provincial cluster system.

The maintenance and strengthening of existing partnership to ensure that moral values are embedded in the provincial government and that economic crime is adequately addressed will continue during the 2009/10 financial year.

2.2.2 Institutional Development Programme

The purpose of this programme is to improve service delivery through institutional capacity building and transformation management. This is the

programme that provides for the funding of transversal functions that include building internal human capital, individual and organisational performance management, institutional capability building, legal services and communication services. Chief directorate: OD falls under this programme.

- **Progress analysis for Institutional Development Programme**

Performance Management Information System (PERMIS) was transversally implemented on 1 April 2008, facilitating more efficient performance planning, review and reporting processes. With this instrument, for the first time in the province, the performance of individual departments were measured and reported on during the 2007/08 performance cycle. The outcome of the pilot study was a consolidated provincial report submitted to Director-General. According to the Public Service Commissioner, the Western Cape Provincial Government was the only department to have 100% compliance rate with the evaluation of Heads of the Department.

The Transversal Employment Equity Planning System was launched in May 2008 as a tool to gather and monitor data on employment equity trends, the tool provided management with a focused view on the progress towards a more representative workforce as part of transversal employment equity compliance in the workplace. A System User Forum was established and trained accordingly, including the design of quarterly newsletter.

The launch of the Provincial Government of the Western Cape Employment Equity Policy Framework and Employment Equity Planning System in May 2008 was a landmark in gearing the Province to deliver on Government's transformation agenda. In July 2008, the Provincial Government of the Western Cape Disability Learnership Programme was launched. A service level agreement for the partnership was signed to mark the provincial government's partnership with the disability sector and commitment to the employment, empowerment and emancipation of People with Disabilities.

A draft communication strategy was refined at the September 2008 Cabinet Lekgotla. Communication efforts of this department were predominantly focused on the incidence of xenophobic violence in the province, on the celebration of commemorative days and on service delivery progress (through the imbizo programme).

- **Analysis of constraints and measure planned to overcome them for Institutional Development Programme**

In the programme of performance management the department will render a focused performance management consultancy service to the provincial government and will deliver on the following key projects:

- Monitoring and measuring and reporting on employees' and organisational performance.
- Management of the career incidents of Head of Department.
- Enhancement of PERMIS by establishing a direct link with the Annual Performance Plan, by integrating performance management and human resource development processes and by refining the system's reporting functionality.
- Development and implementation of an electronic OPMIS.
- Measuring and reporting on the performance of the provincial against the Provincial Programme of Action (PPOA).
- Comprehensive legal services will be provided to the provincial government to ensure legally sound and sustainable decision-making at executive and administrative level.
- Various initiatives and interventions will be embarked upon and systems implemented to ensure that the diverse workforce of the Provincial Government of the Western Cape is transformed, skilled, professional and knowledgeable to deliver on the developmental agenda of government.

Provision will be made for the filling of critical posts in the 2009/10 financial year. However, it is not the intention to fill 100% of the posts on its establishment as the department will be refining its establishment which could well result in a reduction of the number of vacant posts. Due to the limited funding for

compensation of employees, the filling of posts will be done in a prioritisation basis.

- **Description of planned quality improvement measures for Institutional Development Programme**

The numbers of initiatives are provided for, aimed at the improvement of the ability of the PGWC workforce to deliver on the developmental agenda of government, focusing on diversity, skills levels, professionalism, the knowledge base. These initiatives will be supported by the continued organisational alignment of the PGWC departments.

A greater synergy between the various systems and processes responsible for measuring the performance of the provincial government, aligned to the GDS, will be sought across business units of the department.

A framework will be implemented to standardise operating procedures in the department towards improved service delivery and a global induction programme will be piloted. These measures will contribute to the continuous professionalisation of the public service. In addition, departments will be supported through the program to review legislation and the rendering of a comprehensive legal support service, whilst in the field of communication various initiatives will be aimed at improved efficiencies.

2.2.3 Policy and Governance Programmee

The purpose of this programme is to initiate the development and implementation of policies and strategies to achieve a coordinated approach towards sustainable provincial growth and development. This programme provides for the funding of functions such as the development, implementation and management of provincial policies, especially aimed at the maintenance and institutionalisation of the provincial GDS. This programme also provides for the coordination of initiatives to adhere to human rights obligations as well as managing inter and intra-governmental cooperation.

- **Progress analysis for Policy and Governance Programme**

In the 2008/09 financial year the focus was placed on preparing analysis for embedding iKapa GDS in the policies, programmes and planning cycles of government in order to ensure that alignment and coordination takes place.

In 2007/08 and 2008/09 the following lead interventions and departmental strategies were reviewed:

- Climate Change – Water Implementation Plan and Integrated Energy Strategy.
- 2010 FIFA World Cup – Strategic Plan, Business Plans and Implementation Plan.
- Integrated Human Settlements – Isidima Strategy.
- Skills Development – Scarce Skill Strategy.
- Second Economy and Anti-Poverty Strategy (including Expanded Public Works Programme).

As part of the ongoing policy alignment and coherence, the department supported the rollout of the eleven work streams emanating from the provincial growth and development strategy. The Cabinet cluster system was reviewed and improvements introduced.

The Provincial-wide Monitoring, Evaluation and Reporting Strategy for the Provincial-wide Monitoring and Evaluation System (M&E) was approved and sets the strategic framework to achieve transversal monitoring, evaluation and reporting for PGWC. The provincial growth and development strategy indicators have been aligned to compendium of indicators for the lead interventions through a series of consultations and technical workshops. Indicator reporting includes a range of statistical trends for the Western Cape on development of functional indicators through the lens of the growth development strategy. A number of monitoring and evaluation studies were conducted which include an assessment of the provincial administrative data, imbizo assessments, a rapid assessment for displaced people and a Fifteen Year Report for Western Cape in preparation for the National 15 Year Review Synthesis Report.

The establishment of 2010 Technical Steering Committee that meets weekly has contributed significantly to coordination and alignment between departmental efforts to ensure legacy and leverage from 2010 FIFA World Cup to benefit the people of the Western Cape.

The Social Transformation Programme (STP) made an impact in communities and created platforms for dialogue and building social cohesion. 12 intermediary structures, four sub-structures and 10 interim structures were established. Consultation processes within three areas have commenced and two business plans have been developed. A draft framework has been developed for the STP strategy. A memorandum of understanding was signed with the Institute of Justice and Reconciliation to improve the capacity of the structures.

Service Delivery Jamborees held in the Social Transformation Programme areas are making an impact in communities. Over 40 000 people gained access to a service hub where a range of government services are delivered directly to communities who cannot access government services.

- **Analysis of constraints and measures planned to overcome them for Policy and Governance Programme**

During the Fifth Regional Leaders' Conference in Shandong, People's Republic of China, in August 2008, the Western Cape extended a formal invitation to the seven partner regions to host the Fifth Regional Leaders Conference of the Partner Regions in Cape Town during 2010. The invitation, as reflected in the Shandong Declaration of 2008, was formally accepted. The Western Cape proposed the themes of food security and integrated transportation as strategic themes for the Western Cape in line with the provincial growth and development strategy.

The service delivery jamborees have been implemented successfully for the financial year 2007/08. The department intends hosting a total of 24 Jamborees in the 2008/09 financial year with the rural STP areas being the key focal points.

The STP will move to a consolidation and improvement phase of current structures through training, capacity building and institutional support to the structures. Therefore, the project office will work with those structures in 2009/10 that have not completed their business plans. The focus of support will be on training, capacity building of leadership, participatory policy making and resilient communities, crisis and conflict management. The STP is also a vehicle to improve inter-government relations and the establishment local inter-government forums will have to be maintained and supported by the project office. The Intergovernmental Relations Unit will continue to work with the districts to finalise and implement District Growth and Development Strategies and Action Plans.

The 2009/10 work plan includes completing review of the outstanding interventions; the STP, Integrated Transport, Policy Development, Governance, and Sectoral Development. The Chief Directorate Monitoring, Evaluation and Review are gearing for the implementation of the provincial-wide monitoring and evaluation strategy for the provincial growth and development strategy, focusing on the implementation level and results-based level approach.

Preparations for the 2010 FIFA World Cup are progressing well. Constructions of the Green Point and Philippi stadia are on schedule and there is good co-operation between Province, City and the 2010 Local Organising Committee. The provincial Technical Steering Committee will drive legacy issues such as facilitating economic growth and building social cohesion as well as leverage maximum marketing and promotional opportunities for the province.

- **Description of planned quality improvement measures for Policy and Governance Programme**

The department will continue to integrate and align the deliverables of provincial departments, the City of Cape Town and District Municipalities with the provincial GDS. This will be advanced through participation in the Medium Term Expenditure Framework processes, the Local Government Expenditure processes, the assessment of Annual Performance Plans, the assessment of

integrated Development Plans and the institutionalisation of the monitoring, evaluation and review strategy.

2.2.4 Information Communication Technology (ICT) Programme

The purpose of this programme is to enhance service delivery through the effective use of information and communication technologies.

- **Progress analysis for programme ICT**

Service deliveries to departments were met by focusing on addressing service delivery imperatives, particularly around the following key results areas.

- Delivering new and enhanced ICT solution to increase and improve efficiency and effectiveness throughout the PGWC. These included the development of approved applications in accordance with ICT Plans, introduction of innovative and appropriate technologies, and focus on research and development to provide innovative solutions. The department completed 27 research and development projects.
- Managing the renewal and support of technology infrastructure and end-user equipment to enhance efficiency and effectiveness of the provincial government by ensuring that an infrastructure capacity plan is developed and implemented on phases. 287 infrastructures components were installed and 1 296 end-user equipment items were installed.
- Redesigning a Wide Area Network (WAN) to meet the critical needs of the provincial government through the Provincial Common Core Network (PCCN) which addresses eight critical connectivity areas.
- Managing installed systems and a host of software releases. Fifteen systems were developed and 344 software releases completed.
- Providing strategic ICT leadership, direction and guidance by developing and maintaining appropriate ICT policies and strategies.
- Providing and promoting public access to integrated service delivery and information through the launch and maintenance of Cape Gateway Portal.
- Maintaining and re-launching the provincial government's intranet for internal communication with employees and departments

- **Analysis of constraints and measures planned to overcome them for ICT**

Continued emphasis will be placed on ensuring that the requisite capacity to ensure optimal service delivery is achieved through the filling of the remainder of the funded posts on the Ce-I structure. This will see the Branch react its target of 336 employees.

In 2009/10 Ce-I will focus on incremental improvements in the service delivery domain, establishing best practice ICT governance structures and the implementation of the Ce-I turnaround strategy. The strategy aims to re-assert Ce-I as the thought leader in respect of strategic use of ICT's while also ensuring that the programme facilitates innovation. From a service delivery perspective this will focus on improving quality, reducing costs and improving efficiency.

In the helpdesk environment, service level management will be implemented, which will ensure that escalation procedures based on priorities are complied with. A dedicated ICT security function will be investigated, while ensuring that the security architecture is defined and implemented. Disaster recovery planning as well as business continuality will also receive attention.

Management tools will be implemented to ensure that ICT infrastructure and assets can be automatically monitored and tracked to ensure the proactive management of the ICT environment.

- **Description of planned quality improvement measures for ICT**

It is anticipated that the implementation of the turn-around strategy developed during the 2008/09 financial year will ensure that the delivery by this programme will be significantly improved.

2.3 ISSUES IMPACTING SERVICE DELIVERY

In this chapter, a positive view was projected of the achievements of Department of the Premier: Organisational Development. While the achievements are positive, there are many issues that impact on the efficiency of the department as it pertains to service delivery. Furthermore, the current service delivery is not within the set standards, culminating in a degradation of service delivery. Against the background of this more positive chapter, the following challenges face the department:

- The Chief Directorate: OD does not have documented business processes that enables staff to execute their duties effectively or that will assist the department to determine and track past improvements.
- There is a duplication of work taking place.
- The Chief Directorate: OD does not effectively measure the outcomes of interventions implemented.
- Employees are not aware as to what extent they are responsible for continuous improvement within the Chief Directorate: OD, culminating in the degradation of service delivery.
- Staff is not aware as to what the roles and responsibilities of their colleagues are in terms of the goals of the Chief Directorate.

CHAPTER 3: CONTINUOUS IMPROVEMENT: A LITERATURE REVIEW

3.1 INTRODUCTION

According to Munro-Faure and Munro-Faure (1992:93), the objective of continuous quality improvement is to eliminate non-conformance in every activity throughout the company. The benefits, which can culminate from the implementation of a successful Quality Improvement Programme are significant and can include, improved customer satisfaction; elimination of error and waste; reduction in operating costs; increased motivation and commitment of employees; increased profitability and competitiveness.

In order for the implementation of a quality improvement programme to be a success, it demands absolute commitment from everyone, starting with senior management. The implementation of quality improvement programme frequently requires a change in company culture and radical rethink of every activity being performed in the company. The commitment of senior management is the most important factor in ensuring the success of the programme, and is also the most difficult to achieve.

3.2 KEY ELEMENTS OF CONTINUOUS IMPROVEMENT

Talha (2004:15-19), suggests that quality improvement must be about increasing effectiveness and efficiency in order to meet customers expectations. It is a continuous process to achieve a better understanding of the market; to innovate products and process; to manage and distribute material and products; and to provide service to customers. The success of quality improvement is based on the understanding by every member of the organisation concerning the needs of their customers (internal and external). Maintenance of the understanding requires dialogues and negotiations with customers and measurement of one's products and services against customer expectations.

Burrill and Ledolter (1999:470), are of the opinion that in order to achieve continual improvement, an organisation must adjust its strategic and operational planning processes to accommodate quality improvement. Strategic and operational plans must identify goals for quality improvement and what projects will accomplish those goals and what measures will result in success. In order for continuous improvement on processes to be a success, organisation must know their current status before planning the desired outcome.

Schilckman (2003:18) and Oakland and Porter (1995:26), are of the opinion that the PDSA Cycle can be used as the basic tool for continuous/continual improvement as shown in the four stages as elaborated upon below.

- **Plan:** Top management formulates a continuous improvement process based on quality objectives, and search for opportunities for improvement.
- **Do:** Action items are assigned by top management to resolve problem area.
- **Study:** Audits findings and conclusions are used as the basis of analysis of data.
- **Act:** Corrective or prevention actions are taken and presented for management review. The process is repeated, whereby another problem area is selected for resolution.

Jane (1999:28-35), is of the opinion that organisation must not wait until the service has been delivered to determine whether it was delivered in the right manner not. The emphasis should be on planning in order for the service not to be delivered wrong in the first place. Quality is everyone's responsibility within the company, and managers must establish quality goals, imbed them into the company's business plans, and then learn how to measure them.

Troutt (1995:51-60), found that the overall Quality Improvement Process (QIP) often begins with employee communication. If the communication process fails to adhere to effective quality principles, the overall quality may suffer or be comprised. Employee communication is vital for any change programme or improvement in maintaining focus on the goals of the business organisation.

Troutt (1995:51-60), expresses the opinion that the success or failure of an organisation lies within the communication channels of management and employees. There is no hope that a quality improvement programme will succeed if communication is sidelined and not been considered as the central point for implementation. Communication is seen as an enabler to implement a successful quality process improvement. Continuous improvement, (or Kaizen), can be regarded as a guiding channel or philosophy that is at the heart of quality improvement programmes.

According to Goetsch and Davis (2002:279), continual improvement from the perspective of the manufacturing or the service provider, is not just a way to increase market share, but it can also be seen as a method of reducing costs. Any organisation wishes to offer goods or services at prices that will attract customers, but still produce profit. They want their goods or services to be as useful and serviceable to potential customers as possible, so that customers will prefer their services and products to those of the competition. According ISO 9000 and Total Quality Management (TQM) principles, continuous improvement offers organisations the chance to accomplish competitive advantage.

Samson (1997: 214-235), expresses the opinion that companies need to realise the importance of continuous improvement and uses it as an ingredient of pursuing organisational quality. In so doing, it needs to be focused on the customer, on process control and improvement, and on appropriate leadership behaviours. There is no doubt that should these entities be considered it will continue to bring significant improvement to organisations that implement it well.

Chang and Niedzwiecki (1993:1-81), found that for any quality tool to be effective, organisation must know how and when to apply it. By using quality tools, organisations can make a difference into every aspect of their business.

According to Yavas (1995:55-61), research has shown that although quality was once equated with measurable attributes of products, it has recently taken a broader meaning that embraces both internal and external customer satisfaction. The following elements have been identified as continuous improvement elements

of quality, namely; leadership, education and training, supportive structure, communication, reward and recognition, and measurement. Williams, Wiele, Iwaarden and Visser (2004), are of the opinion that TQM is a management approach that ensures mutual co-operation of everyone in an organisation and associated business processes, to produce products and services that meet and exceed the needs and expectations of customers.

According to Gates (1999:25), mentioned that there are different ways that organsiations can continuously improve, such as sharing good practices. The essence of identifying and sharing good practices, is to learn from others and to re-use that knowledge. Good practice programmes are most appropriate in organisation where processes are quite well developed and where a certain knowledge and experience have been accumulated. Good practices are most useful where an organisation has several units or people performing similar tasks. Effective sharing of good practices can help organisations to:

- Identify and replace poor practices.
- Raise the performance of poor performers closer to that of the best.
- Avoid reinventing the wheel.
- Minimise re-work caused by use of poor methods.
- Save costs through better productivity and efficiency.
- Improve services to clients.

Krasachol, Willey and Tannock (1998), is of the opinion that implementing of ISO 9000 can improve the organisational market share and has the following benefits:

- Consistency in working procedures.
- Better understanding of process and responsibility.
- Better understanding of management of quality.
- Reduce customers compliant and return of products.
- Reduce rejected rate.
- Good team work.

Da Silva, Tadashi and Kikuo (2005:67-84; 2002:318-328) and George and Weimerskirch (1998:179), contends that in order for organisation to reach the standard of world-class companies level of excellence, the following should be considered:

- Realise the self-assessment of your organisation.
- Compare your organisation results against the selected world-class companies results.
- Decide what key elements to improve and sustain them.
- Achieve consensus amongst senior managers about company's mission, vision and main strategies concerning quality, cost, delivery, safety, morale and environment issues.
- Determine your organsiation vision, mission and strategies a set of performance drivers and key performance indicators.
- Implementing activities and review data, data should be used to indicate process improvement performance. Use the data to evaluate performance.
- Reward progress

3.3 IMPLEMENTING CONTINUOUS IMPROVEMENT

Munro-Faure and Munro-Faure (1992:94), suggest the following as steps to be taken when implementing a quality improvement programme:

- **Planning for Quality Improvement:** This phase is key to the success of any quality improvement programme. The objective being to secure commitment of senior management, to determine the most appropriate means of implementing quality improvement within the organisation, and to develop a detailed plan to guide the implementation process.
- **Understanding customers:** Companies only exist because they serve the needs of their customers. In order to improve quality, it is essential to understand the external customer, their requirements and how they are to be met and also to identify how internal processes work. It is only by improving the performance of internal processes, that a business will meet the needs of external customers at the minimum cost.
- **Understanding quality costs:** Non-conformance costs arise because jobs are not been performed well. It is therefore essential that the improvement

programme identify where the majority of the money is spent. The results should be used as a focus drive for improvement.

- **Quality awareness:** A quality improvement programme relies on the complete commitment of all employees. Every individual must be educated to ensure they understand their role, and how they can contribute to quality improvement. Employees also need to be kept informed of progress.
- **Measurement of performance:** It is only possible to focus on improving performance if the current performances of processes are measured. Improvement goals can then be targeted and improvements monitored.
- **Prevention:** The cornerstone of quality improvement is the recognition that errors can be prevented. Action is necessary to ensure that any problems that prevent quality improvement are identified, and corrective action implemented to eliminate them. A system is required to achieve this on an on-going basis.

3.4 TOTAL QUALITY MANAGEMENT AND CONTINUOUS IMPROVEMENT

According to Flott (1995:43), quality is meeting and exceeding customer expectations. Customers have the greatest stake in quality. If every part of an organisation improves, the entire organisation improves. TQM means getting rid of what is wrong or what is not wanted. TQM furthermore means improving one idea or one process at a time. TQM must include all of the operational subroutines that result in output. A company that successfully uses TQM seeks to exploit opportunities to improve processes at every possible level.

Shaw, Day and Slavinskas (1995:45), points to the fact that TQM will not work successfully without the problem being identified together with subsequent participation from key stakeholders using the following approach:

- Identify and select the problem.
- Analyse the problem.
- Generate potential solutions.
- Select and plan solution.
- Implement solution.
- Evaluate solution.

Butz (1995:105-108), is of the opinion that TQM must be fully integrated into the strategy and operation plans of the business. Integration must begin with strategic planning. Firstly, the strategic plan must be customer driven. Strategic planning must provide the direction and context for TQM. The culture of TQM and continuous improvement must focus on achieving results that increase value to customers and ensure long-term success. TQM is developed to respond to organsiational challenges, and it emphasises the need to understand business processes that provide customer value.

Buban (1995:97-99), avers that TQM is most effective in an environment that encourages openness, trust and ethics. If the companies decide to build ethical standards into its TQM system, the effects of those ethics must be measure in order to determine their success.

Schlenker (1998:**Online**), points out that TQM incorporates the concept of product quality, process control, quality assurance, and quality improvement. TQM is the control of all transformation processes of an organisation in order to achieve and exceed customer expectation and also to again competitive advantage in the market.

According to Kelada (1994: 79-83), business engineering is everywhere, as many books and articles have stressed its importance and called it a must have if an organisation whishes to survive. When business reengineering is implemented, the objectives of total quality must always be at the forefront to ensure success. In order to achieve total quality, it requires extra-ordinary management and measuring of the organisational performance through out the whole organisation. Every department and individuals within must view their roles as contributing to customer needs. Fulfillment of these needs will translate into revenues and dividends for shareholders, who will also persuade top management to provide the employees with quality of life.

Grahn (1995:65), explains that there are five drivers of Total Quality (TQ) namely, people quality, entrepreneurial and innovation quality, information quality, planning/decision quality and process/execution quality while it is

important to note that no model, map or paradigm is perfect, it is equally important to create a perfect representation of reality by using the five drivers of TQ.

3.5 SERVICE QUALITY IMPROVEMENT

According to Berry, Parasuraman and Zeithaml (1994:32), quality service sustains customers' confidence and is essential for a competitive advantage. Yet many companies are struggling to improve service, wasting money on ill-conceived service programs and undermining credibility of management rhetoric.

Furthermore, Berry *et al.* (1994:33-34), believe that companies need to build a service quality information system to improve service, the system needs to take into account the following:

- Identify dissatisfied customer to attempt recovery; identify most common categories of service failure for remedial action. This should be done continuously.
- Obtain customer feedback while service experience is still fresh; act on feedback quickly if negative patterns develop. This should be done continuously.
- Provide a forum for customers to suggest service-improvement ideas; offer fast, informal customer feedback on service issues. This should be done on a monthly basis.
- Measure individual employees service behavior for use in coaching, training, performance evaluation, recognition and rewards; identify systematic strengths and weaknesses in customer-contact service. This should be done on a quarterly basis.
- Measure internal service quality; identify employee-perceived obstacles to improve service; track employee morale and attitudes. This should be done on a quarterly basis.
- Assess company's service performance compared to competitors; identify service-improvement priorities; track service improvement over time. This should be done three times per year.

Berry *et al.* (1994:32-44), furthermore list the following as lessons to be learned as essentials for improving service quality:

- **Listening:** One of the most common service-improvement mistakes that companies make is to spend money in ways that do not improve service. Spending money wisely to improve service comes from continuous learning about the expectations and perceptions of customers and noncustomers.
- **Reliability:** It is seen as the most important feature in judging service quality.
- **Basic Service:** Customers want the basics when it comes to service. They expect fundamentals, not fanciness; performance not empty promises.
- **Service Design:** Reliably delivery the basic service customers expect depends in part on how well various elements function together in a service system. These elements include the people who perform the specific services in the service chain, the equipment that supports these performances, and the physical environment in which the services are performed. Design flaws in any part of a service system can reduce quality. It is tempting to blame poor quality on the people delivering service, but frequently the real culprit is poor service system design. Service mapping is one way to improve service design.
- **Recovery:** When a service problem occurs, the customer's confidence in the firm is lost. The company can improve matters with the customer at least to some extent or make matters worse. Many dissatisfied customers do not complain directly to the company. Quick response demonstrates that the customer's concern is the company's concern. Companies can overcome some of reluctance and improve recovery service in three ways:
  - Encourage customers to complain and make it easy for them to do so.
  - Respond quickly and personally.
  - Develop a problem resolution system.
- **Surprising Customers:** Exceeding customers' expectations requires the element of surprise, and the best opportunity for surprising customers is when service providers and customers interact. Companies must seek excellence on both outcome and process dimensions of service to develop a reputation for truly outstanding service. Excellent service reliability allows a company to compete.

- **Fair Play:** Customers expect service companies to treat them fairly and become resentful and mistrustful when they perceive otherwise. Fairness underlies all the customers' expectations. Customers expect service companies to keep their promises (reliability), to offer honest communication materials and clean, comfortable facilities (tangibles), to provide prompt service (responsiveness), to be competent and courteous (assurance), and to provide caring, individualised attention (empathy). Fairness is not a separate dimension of service but, rather, touches the very essence of what customers expect.
- **Team Work:** The presence of service 'teammates' is an important dynamic in sustaining service' motivation to serve. Coworkers who support each other and achieve together can be an antidote to service burnout. Team involvement can be rejuvenating, inspirational, and fun. Service performance shortfalls are highly correlated with the absence of teamwork.
- **Employee Research:** Employee research serves as an early-warning system. Because employees' more intensive exposure to the service delivery system, they often see the system breaking down before customers do, therefore employee research is important to service improvement.
- **Servant Leadership:** Improving service involves undoing what exists as much as creating what does not. Delivery excellent service requires a special form of leadership. Servant leaders serve the servers, inspiring and enabling them to achieve, viewing their own role as setting a direction and a standard of excellence, and giving people the tools and freedom to perform.

Ahire, Golhar and Waller (1996:23), avers that QM is an instrument that can be used to improve the efficiency and quality of products and processes. Benchmarking, statistical process control and employee training must be implemented into QM strategies in order to improve organisational processes.

3.6 QUALITY IMPROVEMENT INITIATIVES

Burrill and Ledolter (1999:497-510), describes the following as some quality improvement initiatives that orgnisations must take into account for a successful implementation of continuous improvement.

3.6.1 Deming's Fourteen Points for Management

- Create constancy of purpose for improvement of product and service.
- Adopt the new philosophy.
- Cease dependence on inspection to achieve quality.
- End the practice of awarding business on the basis of price tag alone. Instead, minimise total cost by working with a single supplier.
- Improve constantly and forever every process for planning, production, and service.
- Institute training on the job.
- Adopt and institute leadership.
- Drive out fear.
- Break down the barriers between staff areas.
- Eliminate slogans, exhortations, and targets for the workforce.
- Eliminate numerical quotas for the workforce and numerical goals for management.
- Remove barriers that rob people of pride and workmanship. Eliminate the annual rating or merit system.
- Initiate a vigorous program of education and self-improvement for everyone.
- Put everybody in the company to work to accomplish the transformation.

3.6.2 Juran's Ten Steps to Quality Improvement

- Build awarenss of the need and opportunity for improvement.
- Set goals for improvement.
- Organise to reach the goals (establish a quality council, identify problems, set projects, appoint teams and designate facilitators).
- Provide training.
- Carry out project to solve problems.
- Report progress.
- Give recognition.
- Communicate results.
- Keep score.
- Maintain momentum by making annual improvement part of the regular systems and processes of the company

3.6.3 Juran's Project-by-project improvement

- Juran popularised the idea that business advances by solving problems on a project-by-project basis. Quality improvement amounts to identifying needs, defining project, prioritising them, obtaining authorisation and funding, assigning responsibility, and undertaking the projects. Juran furthermore, points out that major quality problems are interdepartmental in nature, and that the solution requires an interdepartmental project team. Anyone who directs quality improvement should have a solid understanding of the projects and project management.

3.6.4 Juran's Breakthrough sequence

Juran's breakthrough sequence represents a procedure for making quality improvements and solving quality problems.

- Justify the need for a breakthrough.
- Identify the vital few contributors to the problem.
- Organise for making the breakthrough.
- Solve problem.
- Deal with resistance to change.
- Install the change.
- Institute control to hold the new level of performance.

3.6.5 Crosby's quality improvement program

- Obtain management commitment.
- Establish a quality improvement team.
- Establish quality measurements.
- Determine the cost of quality.
- Make employees aware of quality.
- Correct identified quality problems.
- Prepare for zero defects day.
- Train supervisors.
- Hold zero defects day.
- Establish quality goals.
- Establish error-cause removal process.

- Recognise achievement.
- Establish quality councils.
- Repeat the process.

3.6.6 Juran's quality trilogy

Juran proposed a new direction in managing quality, which is termed the 'quality trilogy'. The concept of the triology underpin three basic processes for managing quality, namely quality planning,

- **Quality planning**
  - Identifying the customers, both external and internal.
  - Determine customer needs.
  - Develop product features that respond to customer needs.
  - Establish quality goals that meet the needs of customers and suppliers alike, and do so at a minimum combined cost.
  - Develop a process that can produce the needed product features.
  - Prove process capability; prove that the process can meet the quality goals under operating conditions.
- **Quality control**
  - Choose control subjects; what to control.
  - Choose units of measurement.
  - Establish measurement.
  - Establish standards of performance.
  - Measure actual performance.
  - Interpret the difference (actual versus standards).
  - Take action on the difference.
- **Quality improvement**
  - Prove the need for improvement.
  - Identify specific projects for improvement.
  - Organise to guide the projects.
  - Organise for diagnosis to discover the root causes of the problem.
  - Diagnose to find the causes.
  - Provide remedies.
  - Prove that the remedies are effective under operating conditions.

- Provide for control to hold the gains.

3.6.7 Quality and orgnisational maturity by Crosby and Ishikawa

According to Burrill and Ledolter (1999:49-50), Crosby 1985 suggested schemes to measure the maturity of an organisation's quality efforts. Crosby 1985 proposes a quality management maturity grid as a tool for measuring the maturity of an oganisation quality effort. The grid consists of examining six categories, namely:

- Management understanding and attitude.
- Quality organization status.
- Problem handling.
- Cost of quality as a percent of sales.
- Quality improvement actions.
- Summary of company quality posture.

Burrill and Ledolter (1999:497-510), furthermore stipulate that according there are three phases to quality assurance. During the first phase, quality assurance is based on inspection, with only the quality control function is involved. The task is to prevent defective products from reaching customers. In the second phase, quality assurance extends to the entire production process, including purchasing, production engineering, and marketing. In the third phase, quality assurance extends to all areas of the organisational and all employees.

3.6.8 The Pygmalion effect

In order for quality management improvement to be successful, emphasis must be given to the education and training of management. The attitude of managers towards quality and people who are involved in improvement will have a significant impact on the outcomes of improvement.

3.6.9 Why quality fails

The following according to Burrill and Ledolter (1990:510), serves as reasons why quality fails:

- **Not concerned about quality**
  - Problem is a strong dollar.
  - Problem is unfair competition.
  - Our troubles lie entirely with the workforce.
- **Environment**
  - Unfriendly takeover.
  - Quality not emphasized in business schools.
  - Poor teaching of statistical methods in industry.
  - Mobility of management and workers.
- **Leadership**
  - Lack of understanding of quality
  - Support not visible.
  - Wrong signals are sent
- **Wrong tactics**
  - Wrong management direction.
  - Blame people, not the process
  - Quick fix
  - Delegation responsibility
- **Interfering organization, policies and procedures**
  - Management structures; too many levels.
  - Management practice; appraisal systems, management by the number, promotes short-term performances.
  - Personnel department policies; hiring procedure, individual rating system lack of concern for people, fear in workplace, lack of job security, reward system.
- **Problem, shortcoming of programs**
  - Incorrect use of control charts.
  - Failure to understand process variability.
  - Failure to appropriate education and training.
  - Insufficient attention to analysis and design.
  - Management problems.

3.7 TOOLS AND TECHNIQUES FOR CONTINUOUS IMPROVEMENT

Chang and Niedzwiecki (1993:1-81), researched that in today's business environment, things seem to change daily and how do organisations keep up with the change? Everyone in the organisation must be committed to continuous improve all that he or she does to achieve quality on the job. The authors furthermore stipulate the following tools and techniques that organisation can use to continuously improve:

- **Brainstorming:** Brainstorming is a planning tool that can be used to tap the creativity of a group. It can be used to determine possible causes and/or solution to problem; planning out the steps of a project; and deciding which problem (or improvement opportunity) to work on.
- **Affinity Diagram:** Affinity Diagram is a planning tool that can be used when you wish to add structure to large or complicated issues; break down a complicated issue into easy-to-understand categories; and gain agreement on an issue or situation.
- **Matrix Diagram:** It is a planning tool that can help organisation to organise large groups of tasks and responsibilities. It can be used to match tasks with the individuals, department or functions; show a relationship between a task and the responsible person, department or function; rate the strength of that relationship; and assign accountability and plan actions.
- **Force Field Diagram:** It is an analysis tool that can be used to identify obstacles from reaching a goal and to identify possible causes and solutions to a problem or an important opportunity.
- **Cause and Effect:** Cause and Effect Diagram also known as the fishbone Diagram is an analysis tool that can be used to categorise potential causes of a problem or issue in an orderly way; analyse what is really happening in process; and teach teams and individuals about current or new processes and procedures.
- **Criteria Rating:** It is an interpretation tool that can be used to select ideas and solutions from among several alternatives; to make decision objectively; and to agree as a group on the decision.

- **Check List:** It is a data gathering and interpretation tool that can be used to distinguish between opinion and fact; gather data about how often a problem is occurring; and gather data bout the type of problem occurring.

3.8 INSPECTING SERVICES

Goetsch and Davids (2002:24), suggest that organisations should not wait until the service is performed to apply control or monitoring. It will be unable to affect the outcome, whether the service was performed satisfactorily or not. Quality monitoring and control strategies control the process that delivers the service. Quality characteristics that are important to customers should be tracked, monitored, and analysed to identify processes or individuals in need of improvement.

Gryna (2001:39), is of the opinion that assessment of current quality activities can take two forms, namely assessments that focus on customer's satisfaction results but include an evaluation of the current system of quality-related activities, and assessment that focus on evaluation of the current quality system, with little emphasis on customer satisfaction results. In either case the assessment can be performed by an organisation itself or by an external organisation. Both types of assessment can identify improvement opportunity.

Parasuraman *et al.* (1985:41-50), believes that service is intangible, therefore service cannot be counted, measure, inventoried, tested, and verified in advance of sale to assure quality. Because of its intangibility, organisations may find it difficult to understand how customers perceive their service and evaluate service quality. Quality evaluations are not made on the outcomes of a service, but must also involve evaluations of the process of service delivery.

Macdonald (1995:21-25), points out that the term Business Process Re-engineering (BPR) is being used to cover three distinctly different management approaches to change, namely process improvement, process redesign and process re-engineering. TQM, Kaizen and other continuous improvement initiatives place emphasis on process improvement. The organisation empowers the whole

workforce to look for, and implement, improvements to all work processes. Process redesign strongly focuses on the customer, while BPR aims for dramatic improvement.

3.9 MEASURING PERFORMANCE

According to Tenner and DeToro (1992:127), many organisations are driven by performance measurement. The absence of meaningful goals and measures can lead to useless meandering, or drive the organisation in the wrong direction. Organisation must monitor the level of customer satisfaction and employees satisfaction, and use the findings for informed business decisions.

There are three levels of measurements that are important when measuring performance namely, controlling operations within the process, assessing the output delivered, and quantifying the outcomes achieved. There are also four dimensions of results outcomes namely, products and services delivered to the users and customers, financial return for shareholders, job satisfaction for employees, and social impact upon community.

Breyfogle, Cupello and Meadows (2001:93), believes that there are three main reasons for measuring performance in organisation namely, plan, screen and control. Planning measures addresses whether is the organisation achieving their long-term strategic goals. Screening measures address whether is the organisation functional areas performing in a way that support the organisational strategic goals. Control measures in turn determines if employees, machines, products, service and processes are performing in ways that are aligned with organisational and functional goals.

Dehn, Reinikka and Svensson (2003:10-18), found that there are different ways to improve public sector performance, which are elaborated upon below:

- Interventions can be targeted better at vulnerable types of expenditure. This ensures more accurate interventions and a more efficient use of resources.
- Effort to improve service delivery must consider not just resource flows, but also the institutional framework and incentives.

- Adequate resource are not sufficient to guarantee performance if these resource migrate away from where they were intended to be used.
- Information dissemination, both to vulnerable tiers in the public hierarchy and to end-users can be potential way to mitigate problems arising from the information asymmetries that characterize most public sectors.

Endres (2000:1), is of the opinion that today's organisations are seeking not only to improve their performance by becoming efficient, but also want to become efficient more quickly. The primary drivers for accelerating performance improvement are:

- Intensified global competition.
- Increased sophistication and demand of customers.
- Increased employee job mobility.
- Rpaid changes in technology.

Gryna (2001:491), is of the opinion that in order to improve organisational performance, operations personnel in the service sector must not only be involved in addressing sporadic problems but also chronic problems. In order to address chronic problems, the following techniques are useful nanemly, troubleshooting, quality improvement, and quality planning. In order to maintain foucs on continuous improvement, it requires a positive quality culture in an organisation.

Mayne (2008:1) and Kotvojs (2006:**Online**), believes that cause and effect is a critical tool to assess the performance of organisational programmes and projects. In order for an organisational to design a practical experiment to assess performance, contribution analysis can provide credible assessment of cause and effect and it follows the following steps:

- Set out the attribution problem to be addressed.
- Develop a theory of change and risks to it.
- Gather the existing evidence on the theory of change.
- Assemble and assess the contribution story and challenges to it.
- Seek out additional evidence.
- Revise and strengthen the contribution story.

3.10 PERFORMANCE MEASURES

Kennerley and Neely (2003:213) and Lynch and Cross (1991:59), believes that many organisations have redesigned their measurement systems to ensure that they reflect their current environment and strategies. However, increasingly the environment in which organisations complete is dynamic and rapidly changing, requiring constant modification of strategies and operations to reflect these changing circumstances.

Gates (1999:45), suggests that organisation should implement the appropriate performance measures that will ensure actions that are aligned to strategies and objectives of the organisation. Performance measurement emphasises the importance of maintaining relevant measure that will continue to reflect the issues of importance in the organisation.

Mechling and Vincent (2001:2), avers that performance measure should define progress and success. These measures should be developed with stakeholders inputs and should be clearly documented, well promoted, and requires consensuses among stakeholders of what those measures should be. According to Behn (2003:586), managers can use performance measures to evaluate, control, budget, motivate, promote, celebrate, learn and improve. Managers need to take into account, which managerial purposes will contribute to the performance measures and how those measures will be reflected in the organisation.

Chakrabarty (2007:32), mentioned that organisations, especially those in private sector has implemented a number of performance measurement and management tools such as Balance Scorecard, based on non-financial measures. When an organisation decides to put performance measures in place, those measures should include market share, productivity, employee's attitude, public responsibility, and a balance between short and long term goals. Organisation should be strategically focused and should be able to translate strategy into operational terms, align the organisation to the strategy, make strategy everyone's everyday job, make strategy a continual process, and mobilise change through executive leadership.

Eddy (1998:9), is of the opinion that the design of performance measure and how good it is depends on several factors namely; the purpose of the measure, the entity of which quality is being measured, the dimension of quality being measured, the type of measure, and who will use the measure. It is important to identify these factors because a measure that is good for one purpose, entity, dimension, or audience, does translate in being good for others.

Spitzer (2007:15-20), points out that in order for a organisation to improve, there must be performance measures in place and their advantages are listed as follows:

- Measurement directs behavior.
- Measurement increases the visibility of performance.
- Measurement clarifies expectations.
- Measurement enables accountability.
- Measurement increases objectivity.
- Measurement provides the basis of goal-setting.
- Measurement improves execution.
- Measurement promotes consistency.
- Measurement facilitates feedback.
- Measurement increases alignment.
- Measurement improves decision making.
- Measurement improves problem-solving.
- Measurement provides early warning signals.
- Measurement enhances understanding.
- Measurement enables prediction.
- Measurement motivates.

3.11 MANAGEMENT RESPONSBILITY TOWARDS CONTINUOUS IMPROVEMENT

According to Oakland and Porter (1995:20), to be successful in business efficiency and effectiveness, management must adopt a strategic overview of quality and show total commitment. The approach must focus on developing a problem-prevention mentality. Oakland and Porter (1995:24), is furthermore of the opinion that effective leadership starts with the vision of the Chief Executive,

capitalising on market or service opportunities, continues through a strategy that will give the organisation competitive advantage, and leads to business or service success. Organisations must take note of the decisions taken and the contributions made by anyone anywhere in the organisation, and take it as value adding that will lead to effectiveness of the organisation.

Oakland and Porter (1995:24), found that effective leadership and total quality management results in the company or organisation 'doing things right the first time'. The five requirements of effective leadership according to the authors are the following:

- Developing and communicating clear documented corporate beliefs and objectives.
- Developing clear and effective strategies and supporting plans for achieving the mission and objectives.
- Identifying the critical success factors and critical processes.
- Reviewing the management structure.
- Empowering – encouraging effective employee participation.

According Bell, McBride and Wilson (1994:19-20), the commitment of an organisation to quality systems must be clearly indicated within a declared quality policy, which should be documented and signed by the chief executive. This will demonstrate commitment in providing products or services of high quality. One person must be nominated as the management representative for quality. This appointment must have sufficient overall responsibility, such as authority to coordinate, implement, maintain and monitor the quality system.

De Feo and Bernard (2004:1999), suggest that management must encourage improvement by giving appropriate recognition, such as special awards and celebrations for achieving incremental performance goals, for reaching new records.

Savolainen and Haikonen (2007:6-17), point out that managerial commitment provide the foundation for learning and improving continuously. Top management needs to define, promote, and launch the Six Sigma philosophy (see paragraph 3.12), in the entire organisation. Organising and resource allocation are

some of the key managerial responsibilities. Management should invest in, and allocate resources to staff training in order to promote and continuously improve. On the level of operational leadership, the roles of the leaders need to be clearly defined and leaders should be empowered.

Ahire *et al.* (1996:27), identified that top management commitment rated as the major determinations of successful QM implementation. Responsibilities of top management to quality are listed below:

- Clarity of quality goals for the organisation.
- Relative importance given by top management to quality versus cost.
- Relative importance given by top management to quality versus production schedules.
- Allocation of adequate resources to quality improvement efforts.
- Performance evaluation of managers based on quality.

George, Thomas and Weimerskirch (2006:29-33), are of the opinion that quality begins at the top. Leadership holds the key to the door of continuous improvement. If there is no commitment from top management towards continuous improvement, the organisation has no chance of becoming a quality leader. The company may implement scattered improvements through the diligence of a quality champion. Organisations may even win an award from customers and it may achieve ISO certification for the documentation of its processes, but without clear and consistent leadership, the company will never be a quality leader. There are four steps to quality leadership, namely:

- Commitment to quality.
- Know the company's systems and values.
- Participate in the quality process.
- Integrate quality into the management model.

3.11.1 Steps for managers to plan for continuous improvement

George, Thomas and Weimerskirch (2006:75-76), avers that the best strategic plans include specific measures for achieving every objective, a plan of gathering and publishing data on these measures, and a process for timely review by

management is necessary to prompt actual improvement over time. The following are steps to be taken when managers need to plan for continuous improvement:

- Senior executives are responsible for identifying strategies that reflect the company's long-term goals. Strategies must be developed with inputs from everyone within the organisation, and feedback from key customers and suppliers must be taken into account.
- Once the corporate strategies and objectives have been determined. The planning process must involve everyone within the organisation. Corporate vision of the organisation needs to translate into specific goals, action plans and measures.
- The completed plan must be circulated among major customers and suppliers for their input. The plan must reflect what customers need and expect, and what suppliers are able to provide and support.

3.12 SIX SIGMA

According to Antony (2006:234-248) and Rucker (2000:32-36), the concept of Six Sigma was introduced by Bill Smith in 1986, a senior engineer and scientist with Motorola's communication division, in response to problems associated with high warranty claims. Maguire (1999:27-34) and Antony (2002:20-27), found that the success of the efforts at Motorola was not just achieving Six Sigma quality levels, rather the focus was on reducing the defect rate in processes through the effective utilisation of powerful and practical statistical tools and techniques. This would lead to improved productivity, improved customer satisfaction, enhanced quality of service, and reduced cost of operations or costs of poor quality. Six Sigma today has evolved from merely a measurement of quality, to an overall business improvement strategy of a larger number of companies around the world.

Antony (2006: 234-248), further lists the Six Sigma process known as DMAIC for identifying the root cause of problems. This abbreviation (DMAIC) when expanded, denotes the following:

- **D:** Definition of the problem.
- **M:** Measurement of the problem.
- **A:** Analysis of data to discover the root causes of the problem.

- **I:** Improvement of processes to remove the root cause.
- **C:** Controlling or monitoring processes to prevent the reoccurrence of the problem.

Antony (2004:1006-1013) support the views upheld by Antony and Banuelas (2001:119-121), which describes Six Sigma as a business strategy and systematic methodology, which leads to breakthroughs in profitability and service quality, product performance, productivity and customer satisfaction. Six Sigma methodologies assist in pinpointing major problem areas within an organisation and provide powerful strategies to tackle problems, improving on the customer experience.

Breyfogle *et al.* (2001:27), express the view that there are two basic methods for implementing Six Sigma. One model is based on teaching the tools of Six Sigma, whereby attention is given to building an organisational infrastructure that support Six Sigma. Emphasis should not be given to the mechanics of tool execution, but should be given to when and how a tool should be implemented and integrated with other tools. The other method is project based, whereby Six Sigma infrastructure issues need are being addressed. Organisations can achieve more significant bottom-line benefit with this approach.

According to Savolainen and Haikonen (2007:6-17), organisational learning and continuous improvement are both linked to organisational change. The implementation of organisational change in the practice of continuous improvement and requires supportive structures of organisational learning. Six Sigma is one approach that can be used to examine the dynamics of these two concepts. In the pursuit of organisational effectiveness, Six Sigma is currently gaining more and more ground in high-performance organisations, that are aiming at the highest level of quality.

To make Six Sigma a success in the organisation, it must affect everyone in the organisation (Eckes 2003:1-65). Everyone in an organisation must be involved regardless of their position in the organisation. The foundation of Six Sigma is to teach everyone is the organisation to become more effective and efficient. The

path to becoming more effective and efficient using Six Sigma contains three components. The first component deals with the strategy of Six Sigma. The strategy of Six Sigma is termed Business Process Management (BPM), which is the responsibility of executive management. The second component of Six Sigma deals with the tactics of how project teams improve a broken process. It utilises a scientific methodology, which refers to defining and measuring a problem, analysing its root cause, and testing theories of improvement. Another key component of Six Sigma is the cultural one, which addresses tools that organisation can use to make Six Sigma more that a set of tactics.

3.12.1 Benefits of Six Sigma

Antony (2006: 234-248), points out that the following are the benefits of dopting Six Sigma:

- Effective management decisions due to heavy reliance on data and facts instead of gut-feelings and hunches.
- Increased understanding of customer needs and expectations, especially the critical-to-quality service performance characteristics that will have the greatest impact on customer satisfaction and loyalty.
- Efficient and reliable internal operations, leading to greater market share and satisfied shareholders.
- Improved knowledge across the organisation on various tools and techniques for problem solving, leading to greater job satisfaction for employees.
- Reduced number of non-value added operations through systematic elimination, leading to faster delivery of service.
- Reduced variability in service performance, leading to a more predictable and consistent level of service.
- Transformation of organisational culture from being reactive to proactive thinking or mindset.
- Improved cross-functional teamwork across the organisation.

Hensley (2005:82-101), point out that Six Sigma works successfully when it is adopted as a managerial philosophy and not as a quick fix for particular problems.

In order for organisation to be successful, Six Sigma must be incorporating into the company's strategic plans and the plans of its customers and suppliers.

Breyfogle *et al.* (2001:27), are of the opinion that companies should take Six Sigma serious in order to compete in a world market, a company needs to move toward a Six Sigma level of performance. Most profitable and admired companies in the world have set their goals within a Six Sigma context, and many are moving toward six sigma levels of performance and this has saved billions.

3.13 CONCLUSION

In this chapter, the literature review has emphased the different elements of how continuous improvement should be implemented within organisations, and which methods should be used. The literature has shown that in order for any business or organisation to be a success, continuous improvement must be imbedded in a culture in which the organisation conduct its business. Of importance the fact that management play a critical part in making sure that continuous improvement is implemented within the organisation, and that continuous improvement is not only a management responsibility, but it is everyone's responsibility.

CHAPTER 4: DATA COLLECTION DESIGN AND METHODOLOGY

4.1 AIM OF THIS CHAPTER

The aim of this chapter and the survey contained therein is to determine what key factors are culminating in the degradation of service delivery within the Chief Directorate Organisational Development. The ultimate objective being to solve the research problem as defined in Chapter 1, Paragraph 1.3, and which reads as follows: "Service delivery within the Government Sector is not within the set standards, culminating in a degradation of service delivery".

4.2 CHOICE OF SAMPLING METHOD

According to Collis and Hussey (2003:155-160), a 'sample' is made up of some of the numbers of a 'population' (the target population), the latter referring to a body of people or other collection of items under consideration for the purpose of the research. In this research, convenient sampling will be used, also commonly referred to sampling will be used.

4.3 THE TARGET POPULATION

With any survey, it is necessary to clearly define the target population, which Collis and Hussey (2003:157), define as follows: "A population is any precisely defined set of people or collection of items which is under consideration".

The 'sampling frame' defined by Vogt (1993) and by Collis and Hussey (2003:155-160), as 'a list or record of the population from which all the sampling units are drawn. For this survey, a sample was chosen consisting of 46 employees randomly selected from the Department of the Premier: Chief Directorate Organisational Development.

4.4 DATA COLLECTION

According to Emory and Cooper (1995:278), three primary types of data collection (survey) methods can be distinguished namely:

- Personal interviewing.
- Telephone interviewing.
- Self-administered questionnaires/surveys.

The data collection method used in the survey, falls within the context of a survey, defined by Collis and Hussey (2003:64), as: "A sample of subjects being drawn from a population and studied to make inferences about the population"

The research mainly focused on using a questionnaire as a method of data collection. A questionnaire consisted of a list of questions compiled in order to elicit reliable responses from a chosen sample with the aim to determine what the participants do, think or feel.

Questionnaires, fall within the ambit of a broader definition of 'survey research' of 'descriptive survey'. The concept of 'survey' is defined by Remenyi, Williams and Money (2002:290) as the collection of a large quantity of evidence usually numeric, or evidence that will be converted to numbers. A questionnaire is a list of structured questions, chosen after considerable testing with a view to elicit reliable responses from a chosen sample. The aim is to establish what a selected group pf participant do, think or feel.

4.5 MEASUREMENT SCALES

The survey will be based on the well-known Likert scale (Likert 1932:1-55), whereby respondents were asked to respond to questions or statements, by choosing one of five agreement choices (Emory and Cooper 1995:179). The reason for choosing the Lickert scale, the fact that the scale can be used in both respondent-centred (how responses differ between people) and stimulus-centred (how responses differ between various stimuli) studies, most appropriate to glean data in support of the research problem in question (Emory and Cooper 1995:180-

181). The advantages in using the popular Lickert scale according to Emory and Cooper (Emory and Cooper 1995:180-181) are:

- Easy and quick to construct.
- Each item meets an empirical test for discriminating ability.
- The Lickert scale is probably more reliable than the Thurston scale, and it provides a greater volume of data than the Thurston differential scale.
- The Lickert scale is also treated as an interval scale.

According to Remenyi, Money & Twite (1995:224), interval scales have the benefit that the scale data can be analysed by virtually the full range of statistical procedures. Interval scales facilitate meaningful statistics when calculating means, standard deviation and Pearson correlation coefficients.

4.6 THE DEMAND FOR A QUALITATIVE RESEARCH STRATEGY

While this author acknowledges that a number of strategies can be applied in similar research projects, the well-known concepts of objectivity, reliability etcetera, inherited from the empirical analytical paradigm, is suggested for business research in more or less the traditional way. Quoting Thorndike & Hagen, these concepts are defined by Emory & Cooper (1995:156), as follows:

- **Practicality:** Practicality is concerned with a wide range of factors of economy, convenience, and interpretability.
- **Validity:** Validity refers to the extent to which a test measures what we actually wish to measure. Cooper and Schindler (2006:318-320), identifies 3 subsets to the concept validity, namely: Construct validity, internal validity and external validity.
- **Reliability:** Reliability has to do with the accuracy and precision of a measurement procedure. Collis and Hussey (2003:186), also stated that there are three common ways of estimating the reliability of the responses to questions in questionnaires, namely: test re-test method, split-halves method and the internal consistency method.

4.7 SURVEY SENSITIVITY

Research conducted in areas of a sensitive nature as in the case of this survey, pose particular challenges to the researcher. The following guidelines from various academics serve to illustrate the mitigation process, which can be deployed in an instance where research is conducted in areas of a sensitive nature:

- A qualitative investigation of a particularly sensitive nature conducted by Oskowitz & Meulenberg-Buskens (1997:83), qualified the importance of handling mission critical issues as identified above when the authors stated: "Thus any type of qualitative investigation could benefit from the researchers being skilled and prepared, and the sensitive nature of an investigation into a stigmatizing condition made the need for such an undertaking even more imperative in the current study".

- The sensitivity of certain issues and issues identified as impacting the research negatively in the environments being evaluated, not only demand intimate personal involvement, but also demand the 'personal and practical experience' of the researcher. This view was upheld by Meulenberg-Buskens (1997:83), as being imperative to assure quality in qualitative research being undertaken. Checkland (1989:152), supports this view however extends the concept with the opinion that: "The researcher becomes a participant in the action, and the process of change itself becomes the subject of research".

4.8 SURVEY DESIGN

The survey design most commonly used in business and management, is that of the 'descriptive survey'. According to Leedy and Ormrod (2001:196), a survey is simple design. The researcher poses a series of questions to willing participants; summarises their responses with percentages, frequency counts, or more sophisticated statistical indexes; and then draw inference about particular population form the responses of the sample.

Collis & Hussey (2003:60), is of the opinion that, 'if research is to be conducted in an efficient manner and make the best of opportunities and resources available, it must be organised. Furthermore, if it is to provide a coherent and logical route to a reliable outcome, it must be conducted systematically using appropriate methods to collect and analyse the data. A survey should be designed in accordance with the following stages:

- **Stage one:** Identify the topic and set some objectives.
- **Stage two:** Pilot a questionnaire to find out what people know and what they see as the important issues.
- **Stage three:** List the areas of information needed and refine the objectives.
- **Stage four:** Review the responses to the pilot.
- **Stage five:** Finalise the objectives.
- **Stage six:** Write the questionnaire.
- **Stage seven:** Re-pilot the questionnaire.
- **Stage eight:** Finalise the questionnaire.
- **Stage nine:** Code the questionnaire.

The statements or questions within the survey should be concise and unambiguous, and designed with the following principles in mind:

- Avoidance of double-barrelled questions or statements.
- Avoidance of double-negative questions or statements.
- Avoidance of prestige bias.
- Avoidance of leading questions or statements.
- Avoidance of the assumption of prior knowledge.

4.9 THE VALIDATION SURVEY QUESTIONS

The author has developed survey questionnaires, which illustrated three different categories towards continuous improvement, namely; years of experience, management responsibility and service delivery performance measurement. Questionnaires are highly structured; questions were prepared and piloted to ensure they reflected a high degree of 'validity' (Easterby-Smith, Thorpe & Lowe (2002:48).

According to Collis and Hussey (2003:186), 'validity' is concerned with the extent to which the research findings accurately represents what s happening. More specific, whether the data is a true picture of what is being studied.

4.9.1 Continuous Improvement Questionnaire: Service Delivery

Question 1: Years of experience in Government Sector?

Question 2: Management Responsibility: To what extent are the objectives of the Chief Directorate communicated effectively throughout the whole Chief Directorate by management?

Question 3: Management Responsibility: To what extent is management committed towards continuous improvement?

Question 4: Management Responsibility: Management has created a culture for continuous improvement. To what extent do you agree with the following statement?

Question 5: Service Delivery Performance Measurement: The level of service delivery is in accordance with the set objectives of the Chief Directorate. To what extent do you agree with the following statement?

Question 6: Service Delivery Performance Measurement: The level and quality of service delivery is constantly measured. To what extent is it been measured?

Question 7: Service Delivery Performance Measurement: The objectives of the Chief Directorate are clearly defined and understood by all employees. To what extent do you agree with the following statement?

Question 8: Service Delivery Performance Measurement: Does the Chief Directorate keep track of past business process improvement?

Question 9: Service Delivery Performance Measurement: Business process improvement is communicated effectively throughout the whole of the Chief Directorate. To what extent do you agree with the following statement?

Question 10: Service Delivery Performance Measurement: To what extent does the Chief Directorate keep records of business process improvements?

Question 11: Service Delivery Performance Measurement: The Chief Directorate analyse business processes to discover the root cause of the problems. To what extent do you agree with the following statement?

Question 12: Service Delivery Performance Measurement: To what extent does the Chief Directorate measure the outcomes of the interventions implemented to determine their effectiveness?

Question 13: Service Delivery Performance Measurement: Are employees aware as to what extent they are responsible for continuously improving service delivery?

4.10 CONCLUSION

In this chapter, the 'Continuous Improvement' survey design and methodology was addressed under the following functional headings:

- Aim of the chapter.
- Choice of sampling method.
- Target population.
- Data collection.
- Measurement scales.
- Demand for a qualitative research strategy.
- Survey sensitivity.
- Survey design.
- Survey questions.

In Chapter 4, results from the survey will be analysed in detail and conclusions drawn.

CHAPTER 5: DATA ANALYSIS AND INTERPRETATION OF RESULTS

5.1 INTRODUCTION

Data analysis is "the process of bringing order, structure and meaning to the mass of collected data" (de Vos 2002, 339). This chapter discusses the results of the data analysis of the survey conducted within the Government Sector of the Chief Directorate: Organisational Development. The aim of this study is to determine to what extent the management in Government Sector: Chief Directorate: OD is committed towards continuous improvement. The data obtained from the completed questionnaires will be presented and analysed by means of various analyses (uni-variate, bi-variate and multivariate) as it comes applicable.

The data has been analysed by using SAS software. As descriptive statistics, frequency tables displayed in Paragraph 5.2 shows the distributions of biographical variables and statement responses. As a measure of central tendency, Table 5.4 shows the means and standard deviation of the statement responses as well. Comparative statistics for comparing information for the years of experience groups using Chi-square tests, Kruskal Wallis tests for more than two independent samples and the Wilcoxon Rank-Sum (Mann-Whitney U) tests for two independent samples are discussed in Paragraph 5.3.4 and the computer printouts are shown in Annexure C.

5.2 ANALYSIS METHODS

5.2.1 Validation Survey Results

A descriptive analysis of the survey results returned by the research questionnaire respondents are reflected below. The responses to the questions obtained through the questionnaires are indicated in table format for ease of reference. Each variable is tested to fall within the boundaries.

5.2.2 Data Format

The data received from the questionnaires was in Microsoft Excel format. It was then imported into SAS-format through the SAS ACCESS module. This information was analysed and interpreted.

5.2.3 Preliminary Analysis

The reliability of the statements in the questionnaire posted to the sample drawn at the Government Sector of the Chief Directorate: Organisation Development by using the Cronbach Alpha tests. (See Paragraph 5.3.1). Descriptive statistics were performed on all variables; displaying means, standard deviations, frequencies, percentages, cumulative frequencies and cumulative percentages. These descriptive statistics are discussed in Paragraphs 5.3.2 and 5.3.3. (See also computer printout in Annexure A).

5.2.4 Inferential Statistics

The following inferential statistics are performed on the data:

- Cronbach Alpha test. Cronbach's Alpha is an index of reliability associated with the variation accounted for by the true score of the "underlying construct". Construct is the hypothetical variables that are being measured (Cooper & Schindler, 2001:216-217). More specific, it would be that Cronbach's alpha measures how well a set of items (or variables) measures a single uni-dimensional latent construct.
- Kruskal Wallis test for interval data with more than 2 independent samples. The Kruskal-Wallis one-way analysis of variance by ranks is a non-parametric method for testing equality of population medians among groups. Intuitively, it is identical to a one-way analysis of variance with the data replaced by their ranks. It is an extension of the Mann-Whitney U test to 3 or more groups. Since it is a non-parametric method, the Kruskal-Wallis test does not assume a normal population, unlike the analogous one-way analysis of variance. However, the test does assume an identically-shaped and scaled distribution for each group, except for any difference in medians.

- Mann-Whitney U test or Wilcoxon rank-sum test for ordinal data with two independent samples. The Mann-Whitney *U* test (also called the Mann-Whitney-Wilcoxon (MWW), Wilcoxon rank-sum test, or Wilcoxon-Mann-Whitney test) is a non-parametric test for assessing whether two samples of observations come from the same distribution. The null hypothesis is that the two samples are drawn from a single population, and therefore that their probability distributions are equal. It requires the two samples to be independent, and the observations to be ordinal or continuous measurements, i.e. one can at least say, of any two observations, which is the greater. In a less general formulation, the Wilcoxon-Mann-Whitney two-sample test may be thought of as testing the null hypothesis that the probability of an observation from one population exceeding an observation from the second population is 0.05.
- Chi-square tests for nominal data. The Chi-square (two-sample) tests are probably the most widely used nonparametric test of significance that is useful for tests involving nominal data, but it can be used for higher scales as well like cases where persons, events or objects are grouped in two or more nominal categories such as 'yes-no' or cases A, B, C or D. The technique is used to test for significant differences between the observed distribution of data among categories and the expected distribution based on the null hypothesis. It has to be calculated with actual counts rather than percentages (Cooper & Schindler, 2006:499).

5.2.5 Technical report with graphical displays

A written report with explanations of all variables and their outcome has been compiled. A Cross analysis of variables where necessary was performed, attaching statistical probabilities to indicate the magnitude of differences or associations.

All inferential statistics are discussed in Paragraph 5.3.4.

5.2.6 Assistance to researcher

The conclusions made by the researcher, is validated by the statistical report. The final report written by the researcher is to be validated and checked by a qualified statistician to exclude any misleading interpretations.

5.2.7 Sample

The target population is senior managers, middle management and lower level staff members of Government Sector within Chief Directorate: OD (Organisational Development). The total sample contains 46 respondents who responded on the questionnaire. The convenient sample was drawn.

5.3 ANALYSIS

In total 46 respondents from the senior managers, middle management and lower level staff members of Government Sector within Chief Directorate: OD answered the questionnaire posted to them. The items (statements) in the questionnaires will be tested for reliability in the following paragraph.

5.3.1 Reliability Testing

The reliability test (Cronbach's Alpha Coefficient) was done on all the items (statements) which represent the measuring instrument of this survey, with respect to the responses rendered in this questionnaire. The results are represented in Table 5.1. The resulting printouts are also displayed in Annexure B.

TABLE 5. 1: Cronbach's Alpha Coefficients.

Statements	Variable nr.	Correlation with total	Cronbach's Alpha Coefficient
Management Responsibility			
2. To what extent are the objectives of the Chief Directorate communicated effectively throughout the whole Chief Directorate by management?	Q02	0.4618	0.8969
3. To what extent is management committed towards continuous improvement?	Q03	0.5497	0.8933
4. Management of service delivery has created a culture for continuous improvement.	Q04	0.4915	0.8961
Service delivery performance measurement			
5. The level of service delivery is in accordance with the set objectives of the Chief Directorate.	Q05	0.4493	0.8974
6. The level and quality of service delivery is constantly measured.	Q06	0.6929	0.8858
7. The objectives of the Chief Directorate are clearly defined and understood by all employees.	Q07	0.6335	0.8897
8. Does the Chief Directorate keep track of past business process improvement?	Q08	0.7454	0.8834
9. Business process improvement is communicated effectively throughout the whole of the Chief Directorate.	Q09	0.5993	0.8909
10. To what extent does the Chief Directorate keep record of business process improvements?	Q10	0.7998	0.8792
11. The Chief Directorate analyse business processes to discover the root cause of the problems.	Q11	0.6594	0.8888
12. To what extent does the Chief Directorate measure the outcomes of the interventions implemented to determine their effectiveness?	Q12	0.6444	0.8885
13. Are employees aware as to what extent they are responsible for continuously improving service delivery?	Q13	0.6595	0.8878
Cronbach's Coefficient Alpha for standardized variables			**0.8971**
Cronbach's Coefficient Alpha for raw variables			**0.8983**

Due to the fact that different scales were used for the different questions, the Cronbach's Coefficient Alpha for standardized variables which is equal to 0.8971 is used and proves this questionnaire to be reliable and consistent because it is more than the acceptable level of 0.70.

5.3.2 Descriptive statistics

Table 5.2 shows the descriptive statistics for all the information in the questionnaire that measure a number of quality of service delivery related variables (questions) with the frequencies in each category and the percentage out of total number of questionnaires. It is of importance to note that the descriptive statistics are based on the total sample. These descriptive statistics are also shown in Annexure A. Table 5.3 shows the descriptive statistics like mean, standard deviation and range for the continuous variables.

TABLE 5. 2: Descriptive statistics for categorical variables

Variables	Categories	Frequency	Percentage out of total
Biographic Variables			
1. Years of experience in the Government Sector	0-5 Years	20	43.5%
	6-10 Years	6	13.0%
	11-15 Years	5	10.9%
	16-20 Years	7	15.2%
	Above 20 Years	8	17.4%
MEASURING INSTRUMENT			
Management Responsibility			
2. To what extent are the objectives of the Chief Directorate communicated effectively throughout the whole Chief Directorate by management?	To great extent	8	17.4%
	Somewhat	31	67.4%
	Very little	7	15.2%
	Not at all	0	0.0%
3. To what extent is management committed towards continuous improvement?	To great extent	9	19.6%
	Somewhat	26	56.5%
	Very little	10	21.7%
	Not at all	1	2.2%

Variables	Categories	Frequency	Percentage out of total
4. Management has created a culture for continuous improvement.	Highly agree	3	6..5%
	Agree	29	63.0%
	Disagree	11	23.9%
	Highly disagree	3	6.5%
Service Delivery Performance Management			
5. The level of service delivery is in accordance with the set objectives of the Chief Directorate.	Highly agree	3	6.5%
	Agree	32	69.6%
	Disagree	10	21.7%
	Highly disagree	1	2.2%
6. The level and quality of service delivery is constantly measured.	To great extent	4	8.7%
	Somewhat	18	39.1%
	Very little	21	45.7%
	Not at all	3	6.5%
7. The objectives of the Chief Directorate are clearly defined and understood by all employees.	Highly agree	5	10.9%
	Agree	28	60.9%
	Disagree	13	28.3%
	Highly disagree	0	0.0%
8. Does the Chief Directorate keep track of past business process improvement?	Definitely	1	2.2%
	Very probably	4	8.7%
	Probably	15	32.6%
	Probably not	17	37.0%
	Definitely not	9	19.6%
9. Business process improvement is communicated effectively throughout the whole of the Chief Directorate.	Highly agree	2	4.4%
	Agree	14	30.4%
	Disagree	24	52.2%
	Highly disagree	6	13.0%
10. To what extent does the Chief Directorate keep record of business process improvements?	To great extent	4	8.7%
	Somewhat	7	15.2%
	Very little	25	54.4%
	Not at all	10	21.7%
11. The Chief Directorate analyse business processes to discover the root cause of the problems.	Highly agree	1	2.2%
	Agree	25	54.4%
	Disagree	19	41.3%

Variables	Categories	Frequency	Percentage out of total
	Highly disagree	1	2.2%
12. To what extent does the Chief Directorate measure the outcomes of the interventions implemented to determine their effectiveness?	To great extent	2	4.4%
	Somewhat	22	47.8%
	Very little	17	37.0%
	Not at all	5	10.9%
13. Are employees aware as to what extent they are responsible for continuously improving service delivery?	To great extent	7	15.2%
	Somewhat	21	45.7%
	Very little	18	39.1%
	Not at all	0	0.0%

TABLE 5. 3: Descriptive statistics for the ordinal variables

Variable	N	Mean	Median	Standard Deviation	Range
2. To what extent are the objectives of the Chief Directorate communicated effectively throughout the whole Chief Directorate by management?	46	1.98	2.0	0.5769	2
3. To what extent is management committed towards continuous improvement?	46	2.06	2.0	0.7119	3
4. Management of service delivery has created a culture for continuous improvement.	46	2.30	2	0.6950	3
5. The level of service delivery is in accordance with the set objectives of the Chief Directorate.	46	2.20	2	0.5819	3
6. The level and quality of service delivery is constantly measured.	46	2.50	3	0.7528	3
7. The objectives of the Chief Directorate are clearly defined and understood by all employees.	46	2.17	2	0.6075	2
8. Does the Chief Directorate keep track of past business process improvement?	46	3.63	4	0.9743	4
9. Business process improvement is communicated effectively throughout the whole of the Chief Directorate.	46	2.74	3	0.7434	3
10. To what extent does the Chief Directorate keep record of business process improvements?	46	2.89	3	0.8493	3
11. The Chief Directorate analyse business processes	46	2.43	2	0.5832	3

	to discover the root cause of the problems.					
12.	To what extent does the Chief Directorate measure the outcomes of the interventions implemented to determine their effectiveness?	46	2.54	2	0.7515	3
13.	Are employees aware as to what extent they are responsible for continuously improving service delivery?	46	2.24	2	0.7050	2

5.3.3 UNI-VARIATE GRAPHS

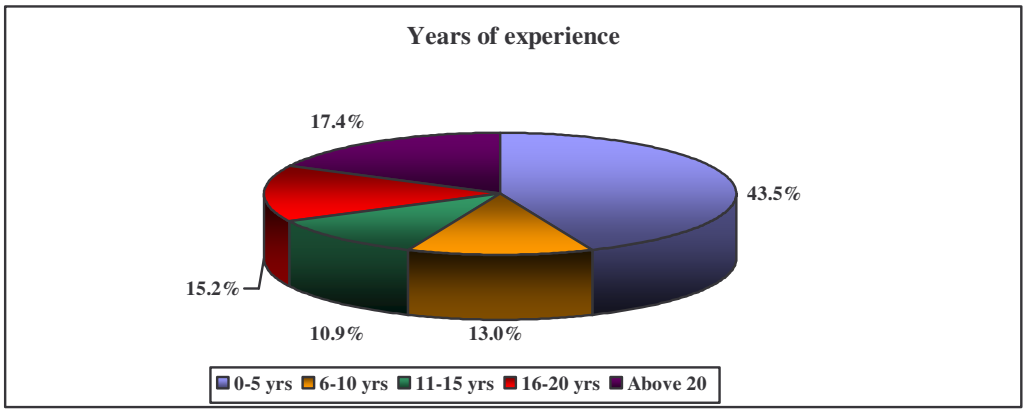

FIGURE 5. 1: Pie with 3D visual effect for years of experience

Nearly half of the respondent has less than 5 years of experience.

FIGURE 5. 2: 100% stack bar for Management responsibility

Most of the respondents indicated that the extent to which the objectives of the Chief Directorate are communicated effectively throughout the whole Chief Directorate by management and the management commitment towards continuous improvement is somewhat.

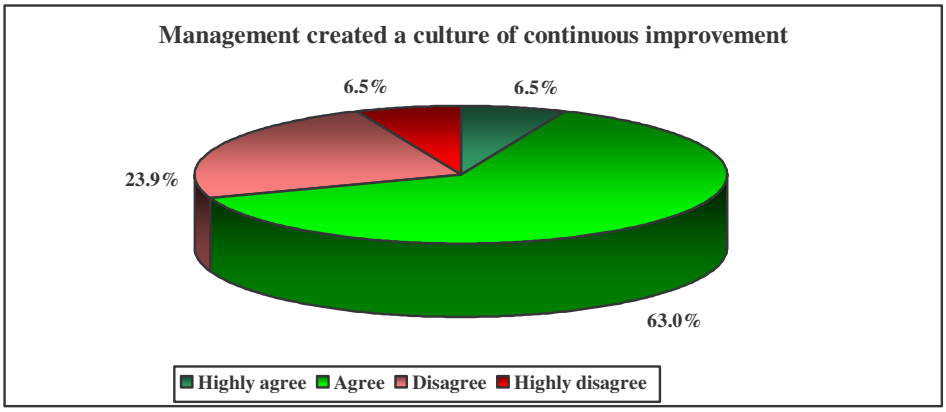

FIGURE 5. 3: Pie with 3D visual effect for whether management created a culture of continuous improvement

Nearly two thirds of the respondent agreed that management creates a culture of continuous improvement.

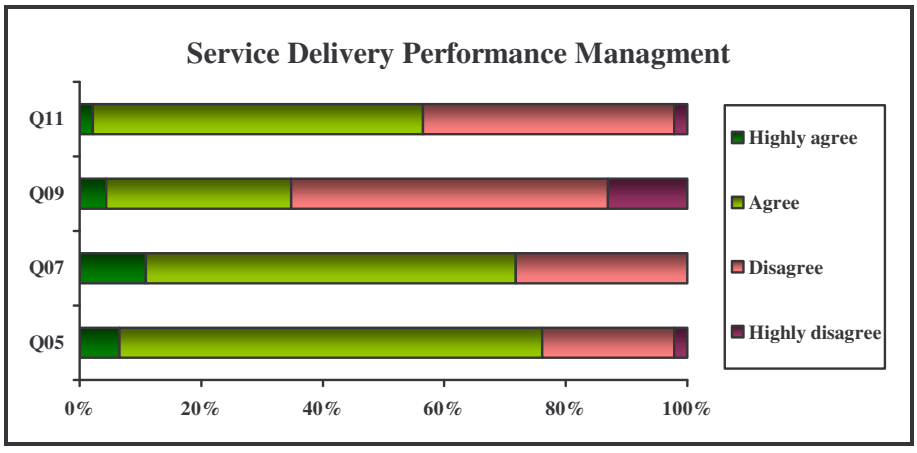

FIGURE 5. 4: 100% stack bar for Service Delivery Performance Management

The respondents disagreed to highly disagree (65.2%) more with the statement that business process improvement is communicated throughout the whole Chief Directorate than with the other 3 statements which are:

- The level of service delivery is in accordance with the set objectives of the Chief Directorate (23.9%).
- The objectives of the Chief Directorate are clearly defined and understood by all employees (28.3%).
- The Chief Directorate analyse business processes to discover the root of the problems (43.5%).

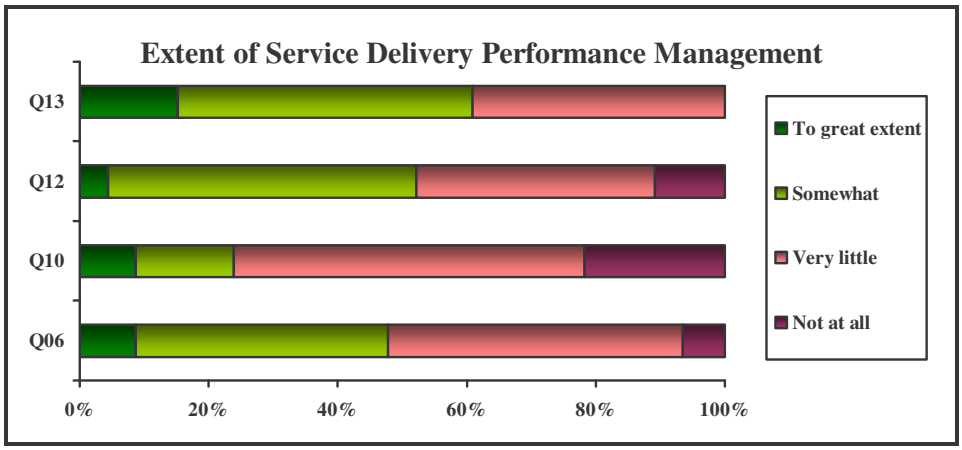

FIGURE 5. 5: 100% stack bar for Service Delivery Performance Management

The respondents indicated that the Chief Directorate do keep very little record or not at all of business process (76.1%).

The following statements are somewhat or very little done:

- The level and quality of service delivery is constantly measured (84.8%).
- The Chief Directorate measure the outcomes of the interventions implemented to determine their effectiveness (84.8%).
- Employees are aware they are responsible for continuously improving service delivery (84.8%).

5.3.4 Comparative statistics

Due to the lack of indicating what type of management (senior, middle or staff) responded to the questionnaire, the years of service in the Government sector is used to indicate whether people longer in the service have a different view than those who have only a short period of service. The years of service variable are re-

grouped so that there are two categories namely up to 5 years of experience and more than five years of experience in the Government sector. Comparisons are made between these to categories with respect to their responses on the different statements made. Due to a small sample size when doing this comparison the chi-square test becomes invalid because of expected frequencies of less than 5 in some of the cells. To overcome the problem categories were aggregated that means more or less the same. For instance the categories "Highly agree" and "Agree" are grouped together as well as the categories "Highly disagree" and "Disagree" to form only two categories "Agree" and "Disagree". Thus the top half and the bottom half of the categories are aggregated to form only two categories for all the variables, except for the statement "Does the Chief Directorate keep track of past business process improvement" which are aggregated to the following 2 categories. The definitely, very probably and probably categories are aggregated, and the probably not and definitely not categories are aggregated.

In some cases there are still expected frequencies of less than 5. For those and if the comparisons are a two by two table the Fisher exact test is used.

The following tables will only show all the statistically significant associations. However note must be taken that all the comparisons (significant and not significant) will be attached in Annexure B.

Chi-square (two-sample) tests are performed comparing the years of experience with respect to the statements they responded on. Tables 5.4 to 5.11 show the contingency tables and statistical significant results.

SAS computes a P-value (Probability value) that measure statistical significance which automatically incorporate the chi-square values. Results will be regarded as significant if the p-values are smaller than 0.05, because this value presents an acceptable level on a 95% confidence interval ($p \leq 0.05$). The p-value is the probability of observing a sample value as extreme as, or more extreme than, the value actually observed, given that the null hypothesis is true. This area represents the probability of a Type 1 error that must be assumed if the null hypothesis is rejected (Cooper & Schindler, 2006:509).

The p-value is compared to the significance level (α) and on this basis the null hypothesis is either rejected or not rejected. If the p value is less than the significance level, the null hypothesis is rejected (if p value $<\alpha$, reject null). If the p value is greater than or equal to the significance level, the null hypothesis is not rejected (if p value $\geq\alpha$, don't reject null). Thus with α=0.05, if the p value is less than 0.05, the null hypothesis will be rejected. The p value is determined by using the standard normal distribution. The small p value represents the risk of rejecting the null hypothesis.

A difference has statistical significance if there is good reason to believe the difference does not represent random sampling fluctuations only. Results will be regarded as significant if the p-values are smaller than 0.05, because this value is used as cut-off point in most behavioural science research.

TABLE 5. 4: Contengency table for years of experience versus "To what extent does the Chief Directorate keep record of business process improvements?"

Frequency / Column percentage	**Somewhat – Great extent**	**Not at all – Very little**	**TOTAL**
0-5 years experience	9 81.8%	11 31.4%	20 43.5%
More than 5 years experience	2 18.2%	24 68.5%	26 56.5%
TOTAL	11 23.9%	35 76.1%	46

TABLE 5. 5: Chi-square test for statistically significant comparisons for years of experience with respect to Q10

Question / Statement	**Sample Size**	**Chi-Square**	**DF**	**P-Value**
Comparisons between the different groups of years of experience				
10. To what extent does the Chief Directorate keep record of business process improvements?	46	8.6476	1	0.0033**

This chi-square test comparing years of experience with respect to "To what extent does the Chief Directorate keep record of business process improvements"

there is statistically significantly more respondents with more than 5 years of experience that indicated "Not at all to very little" than respondents with up to 5 years experience.

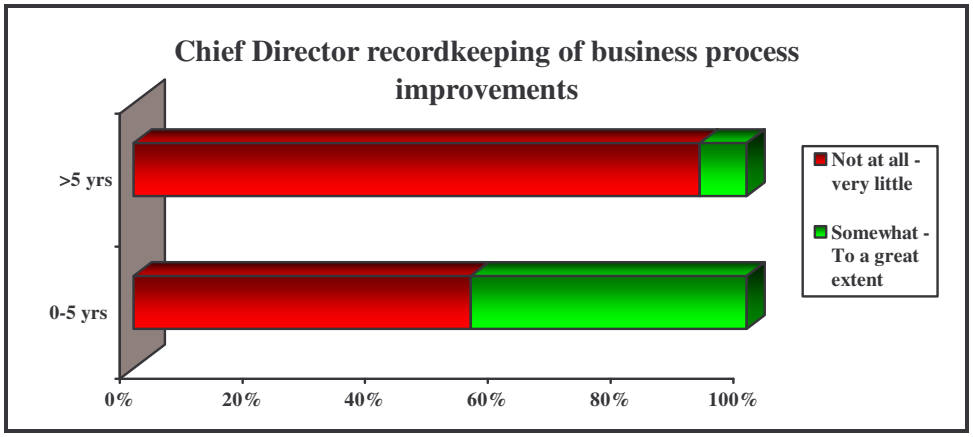

FIGURE 5. 6: 100% stack bar for years of experience versus Q10

TABLE 5. 6: Contengency table for years of experience versus "The Chief Directorate analyse business processes to discover the root of the problems"

Frequency / Column percentage	Agree – Highly agree	Highly disagree – Disagree	TOTAL
0-5 years experience	15 57.7%	5 25.0%	20 43.5%
More than 5 years experience	11 42.3%	15 75.0%	26 56.5%
TOTAL	26 56.5%	20 43.5%	46

TABLE 5. 7: Chi-square test for statistically significant comparisons for years of experience with respect to Q11

Question / Statement	Sample Size	Chi-Square	DF	P-Value
Comparisons between the different groups of years of experience				
11. The Chief Directorate analyse business processes to discover the root of the problems.	46	4.9164	1	0.0266*

This chi-square test comparing years of experience with respect to "The Chief Directorate analyse business processes to discover the root of the problems" indicate that there is statistically significantly more respondents with more than 5 years of experience that indicated "Disagree to Highly disagree" than respondents with up to 5 years experience.

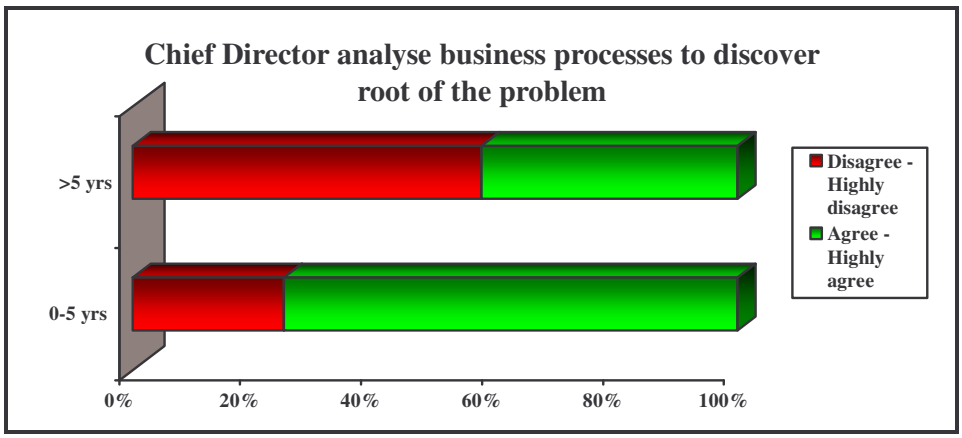

FIGURE 5. 7: 100% stack bar for years of experience versus Q11

TABLE 5. 8: Contengency table for years of experience versus "To what extent does the Chief Directorate measure the outcome of interventions to determine their effectiveness?"

Frequency / Column percentage	Somewhat – Great extent	Not at all – Very little	TOTAL
0-5 years experience	15 62.5%	5 22.7%	20 43.5%
More than 5 years experience	9 37.5%	17 77.3%	26 56.5%
TOTAL	24 52.2%	22 47.8%	46

TABLE 5. 9: Chi-square test for statistically significant comparisons for years of experience with respect to Q12

Question / Statement	Sample Size	Chi-Square	DF	P-Value
Comparisons between the different groups of years of experience				
12. To what extent does the Chief Directorate measure the outcome of interventions to determine their effectiveness?	46	7.3885	1	0.0066**

This chi-square test comparing years of experience with respect to "To what extent does the Chief Directorate measure the outcome of interventions to determine their effectiveness?" there is statistically significantly more respondents with more than 5 years of experience that indicated "Not at all to very little" than respondents with up to 5 years experience.

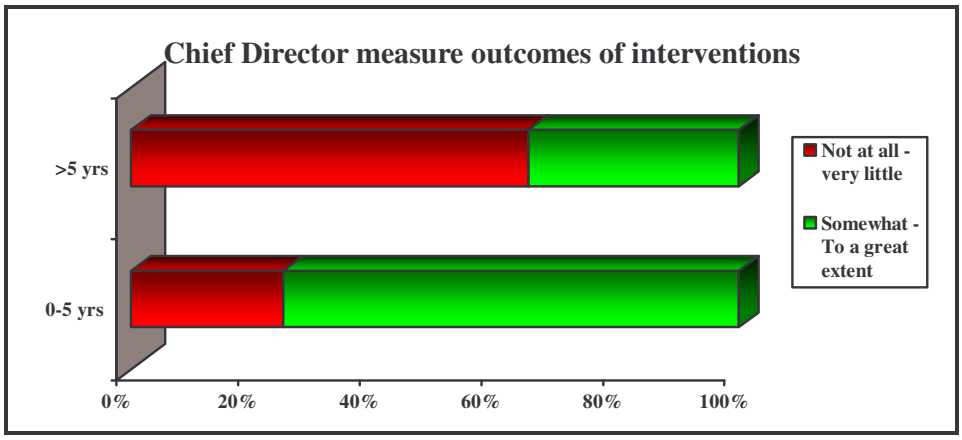

FIGURE 5. 8: 100% stack bar for years of experience versus Q12

TABLE 5. 10: Contengency table for years of experience versus "Are employees aware as to what extent they are responsible for continuous improving Sertive Delivery?"

Frequency / Column percentage	Somewhat – Great extent	Not at all – Very little	TOTAL
0-5 years experience	16 57.1%	4 22.2%	20 43.5%
More than 5 years experience	12 42.9%	14 77.8%	26 56.5%
TOTAL	28 60.9%	18 39.1%	46

TABLE 5. 11: Chi-square test for statistically significant comparisons for years of experience with respect to Q13

Question / Statement	Sample Size	Chi-Square	DF	P-Value
Comparisons between the different groups of years of experience				
13 Are employees aware as to what extent they	46	5.4369	1	0.0197*

Question / Statement	Sample Size	Chi-Square	DF	P-Value
are responsible for continuous improving SD?				

This chi-square test comparing years of experience with respect to "Are employees aware as to what extent they are responsible for continuous improving Service Delivery?" there is statistically significantly more respondents with more than 5 years of experience that indicated "Not at all to very little" than respondents with up to 5 years experience.

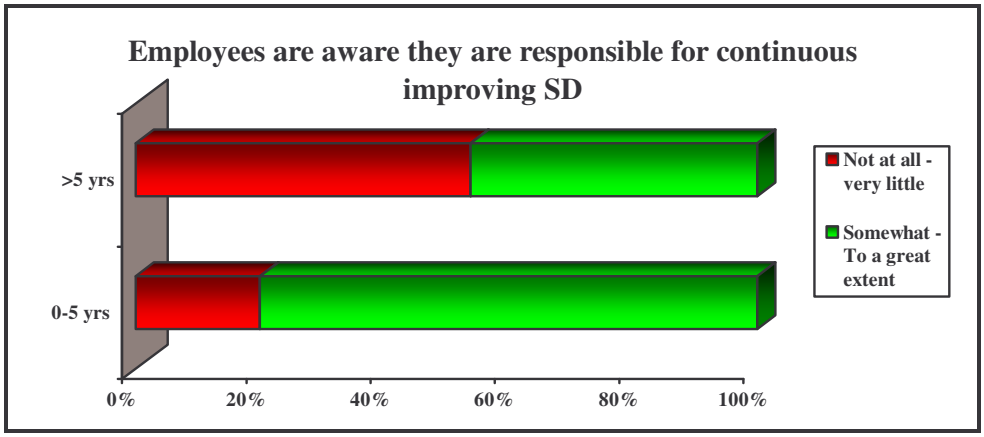

FIGURE 5. 9: 100% stack bar for years of experience versus Q13

The Mann Whitney test for 2 independent samples was also done to compare the two groups for years of experience with respect to the different statements and it only confirms what the Chi-square test showed above. This statistics can be found in Annexure C

5.4 FINDINGS AND CONCLUSIONS FROM THE RESEARCH SURVEY

This study shows the feelings around the current service delivery that can be found in the Government Sector. The following analogies can be drawn from the results of the survey conducted in the government sector within the Chief Directorate: Organisational Development:

- Management responsibility comes down to the fact that the objectives of the Chief Directorate is only communicated somewhat throughout the whole Chief Directorate by management and the management commitment towards continuous improvement is somewhat. Management thus is somewhat responsible.
- Management in the Government sector creates a culture of continuous improvement.
- Although business process improvement is not communicated throughout the whole Chief Directorate.
- The level of service delivery is in accordance with the set objectives of the Chief Directorate.
- The objectives of the Chief Directorate are clearly defined and understood by all employees.
- The Chief Directorate analyse business processes to discover the root of the problems.
- Although the Chief Directorate keep very little record or not at all of business process improvements.
- The level and quality of service delivery is somewhat measured.
- The Chief Directorate somewhat measure the outcomes of the interventions implemented to determine their effectiveness.
- Employees are somewhat aware they are responsible for continuously improving service delivery.
- Employees with longer experience in the Government sector think that very little or not at all that the Chief Directorate keep record of business process improvements. They also do not think that the Chief Directorate analyse business processes to discover the root of the problems or measure the outcome of interventions to determine their effectiveness. They also think that employees are not aware as to what extent they are responsible for continuous improving Service Delivery.

5.5 RECOMMENDATIONS TO MITIGATE THE RESEARCH PROBLEM

The research problem, which as been researched within the ambit of this dissertation, reads as follows: "Service delivery within Government Sector is not within the set standards, culminating in a degradation of service delivery". Analogies drawn from the literature review (chapter 3) and the findings from the survey (chapter 4) culminate in the following research recommendations:

- The Chief Directorate: OD should implement Total Quality Management if it seeks to exploit opportunities to improve processes at every possible level. Refer to Paragraph 3.4 and supporting reference from Flott (1995:43).
- The Chief Directorate: OD should implement ISO 9000, which according to Krasachol, Willey and Tannock (1999), can improve the organisations market share.
- The sharing of good practices can be used as one of the techniques for continuous improvement as highlighted by Gates (1999:25) in the literature study (refer to Paragraph 3.2).
- The Chief Directorate: OD should implement quality improvement programme such as planning for quality improvement, understanding customers, understanding quality costs, quality awareness, measuring of performance and prevention as highlighted by Munro-Faure and Munro-Faure (1992:94) in Paragraph 3.3.
- The Chief Directorate: OD should implement a service quality information system in order to improve service delivery. Refer to Paragraph 3.5 and supporting evidence from Berry, Parasuraman and Zeithaml (1994:33-34).
- The Chief Directorate: OD should implement the following quality improvement initiatives as for the successful implementation of continuous improvement, as suggested by Burrill and Ledolter (1999:497-510) in Paragraph 3.6.
    - Deming's Fourteen Points to Management for management.
    - Juran's Ten Steps to Quality Improvement.
    - Juran's Project-by-project improvement.
    - Juran's Breakthrough sequence.

- Crosby's quality improvement program.
- Juran's quality trilogy.
- Quality and organisational maturity.

- The Chief Directorate: OD should measure performance and implement appropriate performance measures to ensure service delivery that is acceptable by clients. Refer to Paragraphs 3.9 and 3.10.
- Management within Chief Directorate: OD needs to play an active part when it comes to continuous improvement, as their commitment towards continuous improvement is very impartment in order for it to be a success. Refer to Paragraph 3.11- 3.11.1.
- The Chief Directorate: OD must implement Six Sigma in order for the organisation to be more effective and efficient. Refer to Paragraph 3.12.

5.6 FINAL CONCLUSION

While a plethora of individual improvements and mechanisms can be implemented to attain improved efficiency, it is the sustained incremental improvements from various perspectives that would ultimately render results.

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Annexure A :

Descriptive statistics for each variable

Q01	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0-5 yrs	20	43.48	20	43.48
6-10 yrs	6	13.04	26	56.52
11-15 yrs	5	10.87	31	67.39
16-20 yrs	7	15.22	38	82.61
Above 20 yrs	8	17.39	46	100.00

Chi-Square Test for Equal Proportions

Chi-Square	16.3913
DF	4
Pr > ChiSq	0.0025

Sample Size = 46

Q02	Frequency	Percent	Cumulative Frequency	Cumulative Percent
To great extent	8	17.39	8	17.39
Somewhat	31	67.39	39	84.78
Very little	7	15.22	46	100.00

Chi-Square Test for Equal Proportions

Chi-Square	24.0435
DF	2
Pr > ChiSq	<.0001

Sample Size = 46

Q03	Frequency	Percent	Cumulative Frequency	Cumulative Percent
To great extent	9	19.57	9	19.57
Somewhat	26	56.52	35	76.09
Very little	10	21.74	45	97.83
Not at all	1	2.17	46	100.00

Chi-Square Test for Equal Proportions

Chi-Square	28.6087
DF	3
Pr > ChiSq	<.0001

Sample Size = 46

Q04	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Highly agree	3	6.52	3	6.52
Agree	29	63.04	32	69.57
Disagree	11	23.91	43	93.48
Highly disagree	3	6.52	46	100.00

Chi-Square Test for Equal Proportions

Chi-Square	39.2174
DF	3
Pr > ChiSq	<.0001

Sample Size = 46

Q05	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Highly agree	3	6.52	3	6.52
Agree	32	69.57	35	76.09
Disagree	10	21.74	45	97.83
Highly disagree	1	2.17	46	100.00

Chi-Square Test for Equal Proportions

Chi-Square	52.6087
DF	3
Pr > ChiSq	<.0001

Sample Size = 46

Q06	Frequency	Percent	Cumulative Frequency	Cumulative Percent
To great extent	4	8.70	4	8.70
Somewhat	18	39.13	22	47.83
Very little	21	45.65	43	93.48
Not at all	3	6.52	46	100.00

Chi-Square Test for Equal Proportions

Chi-Square	22.6957
DF	3
Pr > ChiSq	<.0001

Sample Size = 46

Q07	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Highly agree	5	10.87	5	10.87
Agree	28	60.87	33	71.74
Disagree	13	28.26	46	100.00

Chi-Square Test for Equal Proportions

Chi-Square	17.7826
DF	2
Pr > ChiSq	0.0001

Sample Size = 46

Q08	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Definitely	1	2.17	1	2.17
Very probably	4	8.70	5	10.87
Probably	15	32.61	20	43.48
Probably not	17	36.96	37	80.43
Definitely not	9	19.57	46	100.00

Chi-Square Test for Equal Proportions

Chi-Square	20.5217
DF	4
Pr > ChiSq	0.0004
Sample Size = 46	

Q09	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Highly agree	2	4.35	2	4.35
Agree	14	30.43	16	34.78
Disagree	24	52.17	40	86.96
Highly disagree	6	13.04	46	100.00

Chi-Square Test for Equal Proportions

Chi-Square	24.6087
DF	3
Pr > ChiSq	<.0001
Sample Size = 46	

Q10	Frequency	Percent	Cumulative Frequency	Cumulative Percent
To great extent	4	8.70	4	8.70
Somewhat	7	15.22	11	23.91
Very little	25	54.35	36	78.26
Not at all	10	21.74	46	100.00

Chi-Square Test for Equal Proportions

Chi-Square	22.6957
DF	3
Pr > ChiSq	<.0001
Sample Size = 46	

Q11	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Highly agree	1	2.17	1	2.17
Agree	25	54.35	26	56.52
Disagree	19	41.30	45	97.83
Highly disagree	1	2.17	46	100.00

Chi-Square Test for Equal Proportions

Chi-Square	39.9130
DF	3
Pr > ChiSq	<.0001
Sample Size = 46	

Q12	Frequency	Percent	Cumulative Frequency	Cumulative Percent
To great extent	2	4.35	2	4.35
Somewhat	22	47.83	24	52.17
Very little	17	36.96	41	89.13
Not at all	5	10.87	46	100.00

Chi-Square Test for Equal Proportions

Chi-Square	23.7391
DF	3
Pr > ChiSq	<.0001
Sample Size = 46	

Q13	Frequency	Percent	Cumulative Frequency	Cumulative Percent
To great extent	7	15.22	7	15.22
Somewhat	21	45.65	28	60.87
Very little	18	39.13	46	100.00

Chi-Square Test for Equal Proportions

Chi-Square	7.0870
DF	2
Pr > ChiSq	0.0289
Sample Size = 46	

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
Q02	46	1.97826	0.57693	91.00000	1.00000	3.00000	Q02
Q03	46	2.06522	0.71187	95.00000	1.00000	4.00000	Q03
Q04	46	2.30435	0.69505	106.00000	1.00000	4.00000	Q04
Q05	46	2.19565	0.58193	101.00000	1.00000	4.00000	Q05
Q06	46	2.50000	0.75277	115.00000	1.00000	4.00000	Q06
Q07	46	2.17391	0.60752	100.00000	1.00000	3.00000	Q07
Q08	46	3.63043	0.97431	167.00000	1.00000	5.00000	Q08
Q09	46	2.73913	0.74341	126.00000	1.00000	4.00000	Q09
Q10	46	2.89130	0.84927	133.00000	1.00000	4.00000	Q10
Q11	46	2.43478	0.58318	112.00000	1.00000	4.00000	Q11
Q12	46	2.54348	0.75149	117.00000	1.00000	4.00000	Q12
Q13	46	2.23913	0.70505	103.00000	1.00000	3.00000	Q13

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.898283
Standardized	0.897141

Cronbach Coefficient Alpha with Deleted Variable

Deleted Variable	Raw Variables: Correlation with Total	Raw Variables: Alpha	Standardized Variables: Correlation with Total	Standardized Variables: Alpha	Label
Q02	0.461843	0.896894	0.450887	0.896973	Q02
Q03	0.549658	0.893299	0.560704	0.891444	Q03
Q04	0.491458	0.896055	0.506281	0.894202	Q04
Q05	0.449301	0.897400	0.458650	0.896587	Q05
Q06	0.692856	0.885846	0.697092	0.884375	Q06
Q07	0.633539	0.889666	0.623216	0.888232	Q07
Q08	0.745427	0.883358	0.743709	0.881906	Q08
Q09	0.599283	0.890863	0.581560	0.890378	Q09
Q10	0.799842	0.879201	0.787634	0.879555	Q10
Q11	0.659352	0.888838	0.645665	0.887067	Q11
Q12	0.644377	0.888475	0.647950	0.886948	Q12
Q13	0.659455	0.887786	0.652147	0.886729	Q13

Annexure B :

Inferential statistics

Table of Q01 by Q02

Frequency / Percent / Row Pct / Col Pct	To great, extent, or somew, hat	Very lit, tle or n, ot at al, l	Total
0-5 yrs	16	4	20
	34.78	8.70	43.48
	80.00	20.00	
	41.03	57.14	
Above 5 years	23	3	26
	50.00	6.52	56.52
	88.46	11.54	
	58.97	42.86	
Total	39	7	46
	84.78	15.22	100.00

Statistics for Table of Q01 by Q02

Statistic	DF	Value	Prob
Chi-Square	1	0.6273	0.4283
Likelihood Ratio Chi-Square	1	0.6217	0.4304
Continuity Adj. Chi-Square	1	0.1429	0.7054
Mantel-Haenszel Chi-Square	1	0.6137	0.4334
Phi Coefficient		-0.1168	
Contingency Coefficient		0.1160	
Cramer's V		-0.1168	

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	16
Left-sided Pr <= F	0.3498
Right-sided Pr >= F	0.8856
Table Probability (P)	0.2353
Two-sided Pr <= P	0.6816

Sample Size = 46

Table of Q01 by Q03

Frequency / Percent / Row Pct / Col Pct	To great, extent, or somew, hat	Very lit, tle or n, ot at al, l	Total
0-5 yrs	15	5	20
	32.61	10.87	43.48
	75.00	25.00	
	42.86	45.45	
Above 5 years	20	6	26
	43.48	13.04	56.52
	76.92	23.08	
	57.14	54.55	
Total	35	11	46
	76.09	23.91	100.00

Statistics for Table of Q01 by Q03

Statistic	DF	Value	Prob
Chi-Square	1	0.0230	0.8795
Likelihood Ratio Chi-Square	1	0.0229	0.8796
Continuity Adj. Chi-Square	1	0.0000	1.0000
Mantel-Haenszel Chi-Square	1	0.0225	0.8808
Phi Coefficient		-0.0223	
Contingency Coefficient		0.0223	
Cramer's V		-0.0223	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	15
Left-sided Pr <= F	0.5746
Right-sided Pr >= F	0.6930
Table Probability (P)	0.2676
Two-sided Pr <= P	1.0000

Sample Size = 46

Table of Q01 by Q04

Frequency Percent Row Pct Col Pct	Agree to, Highly agree	Disagree, to High, ly disag, ree	Total
0-5 yrs	14 30.43 70.00 43.75	6 13.04 30.00 42.86	20 43.48
Above 5 years	18 39.13 69.23 56.25	8 17.39 30.77 57.14	26 56.52
Total	32 69.57	14 30.43	46 100.00

Statistics for Table of Q01 by Q04

Statistic	DF	Value	Prob
Chi-Square	1	0.0032	0.9552
Likelihood Ratio Chi-Square	1	0.0032	0.9552
Continuity Adj. Chi-Square	1	0.0000	1.0000
Mantel-Haenszel Chi-Square	1	0.0031	0.9557
Phi Coefficient		0.0083	
Contingency Coefficient		0.0083	
Cramer's V		0.0083	

Fisher's Exact Test

Cell (1,1) Frequency (F)	14
Left-sided Pr <= F	0.6455
Right-sided Pr >= F	0.6069
Table Probability (P)	0.2524
Two-sided Pr <= P	1.0000

Sample Size = 46

Table of Q01 by Q05

Frequency Percent Row Pct Col Pct	Agree to, Highly , agree	Disagree, to High, ly disag, ree	Total
0-5 yrs	15 32.61 75.00 42.86	5 10.87 25.00 45.45	20 43.48
Above 5 years	20 43.48 76.92 57.14	6 13.04 23.08 54.55	26 56.52
Total	35 76.09	11 23.91	46 100.00

Statistics for Table of Q01 by Q05

Statistic	DF	Value	Prob
Chi-Square	1	0.0230	0.8795
Likelihood Ratio Chi-Square	1	0.0229	0.8796
Continuity Adj. Chi-Square	1	0.0000	1.0000
Mantel-Haenszel Chi-Square	1	0.0225	0.8808
Phi Coefficient		-0.0223	
Contingency Coefficient		0.0223	
Cramer's V		-0.0223	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	15
Left-sided Pr <= F	0.5746
Right-sided Pr >= F	0.6930
Table Probability (P)	0.2676
Two-sided Pr <= P	1.0000

Sample Size = 46

Table of Q01 by Q06

Frequency Percent Row Pct Col Pct	To great, extent ,or somew, hat	Very lit, tle or n, ot at al, l	Total
0-5 yrs	11 23.91 55.00 50.00	9 19.57 45.00 37.50	20 43.48
Above 5 years	11 23.91 42.31 50.00	15 32.61 57.69 62.50	26 56.52
Total	22 47.83	24 52.17	46 100.00

Statistics for Table of Q01 by Q06

Statistic	DF	Value	Prob
Chi-Square	1	0.7298	0.3929
Likelihood Ratio Chi-Square	1	0.7312	0.3925
Continuity Adj. Chi-Square	1	0.3098	0.5778
Mantel-Haenszel Chi-Square	1	0.7139	0.3981
Phi Coefficient		0.1260	
Contingency Coefficient		0.1250	
Cramer's V		0.1260	

Fisher's Exact Test

Cell (1,1) Frequency (F)	11
Left-sided Pr <= F	0.8754
Right-sided Pr >= F	0.2891
Table Probability (P)	0.1645
Two-sided Pr <= P	0.5525

Sample Size = 46

Table of Q01 by Q07

Frequency Percent Row Pct Col Pct	Agree to, Highly , agree	Disagree, to High, ly disag, ree	Total
0-5 yrs	14 30.43 70.00 42.42	6 13.04 30.00 46.15	20 43.48
Above 5 years	19 41.30 73.08 57.58	7 15.22 26.92 53.85	26 56.52
Total	33 71.74	13 28.26	46 100.00

Statistics for Table of Q01 by Q07

Statistic	DF	Value	Prob

```
Chi-Square                      1      0.0528    0.8183
Likelihood Ratio Chi-Square     1      0.0527    0.8185
Continuity Adj. Chi-Square      1      0.0000    1.0000
Mantel-Haenszel Chi-Square      1      0.0516    0.8202
Phi Coefficient                       -0.0339
Contingency Coefficient                0.0339
Cramer's V                            -0.0339

          Fisher's Exact Test
     ffffffffffffffffffffffffffffffffff
     Cell (1,1) Frequency (F)         14
     Left-sided Pr <= F           0.5373
     Right-sided Pr >= F          0.7132

     Table Probability (P)        0.2505
     Two-sided Pr <= P            1.0000
              Sample Size = 46


           Table of Q01 by Q08
   Frequency     ,
   Percent       ,
   Row Pct       ,
   Col Pct       ,Definite,Probably,  Total
                 ,ly or ve, not or ,
                 ,ry proba,definite,
                 ,bly or p,ly not  ,
                 ,robably ,        ,
   fffffffffffffffffffffffffffffffffff
   0-5 yrs       ,      12 ,      8 ,     20
                 ,  26.09 ,  17.39 ,  43.48
                 ,  60.00 ,  40.00 ,
                 ,  60.00 ,  30.77 ,
   fffffffffffffffffffffffffffffffffff
   Above 5 years ,       8 ,     18 ,     26
                 ,  17.39 ,  39.13 ,  56.52
                 ,  30.77 ,  69.23 ,
                 ,  40.00 ,  69.23 ,
   fffffffffffffffffffffffffffffffffff
   Total              20        26       46
                   43.48     56.52   100.00

      Statistics for Table of Q01 by Q08
Statistic                       DF       Value      Prob
fffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffff
Chi-Square                      1      3.9304    0.0474
Likelihood Ratio Chi-Square     1      3.9677    0.0464
Continuity Adj. Chi-Square      1      2.8309    0.0925
Mantel-Haenszel Chi-Square      1      3.8450    0.0499
Phi Coefficient                       0.2923
Contingency Coefficient               0.2806
Cramer's V                            0.2923

          Fisher's Exact Test
     ffffffffffffffffffffffffffffffffff
     Cell (1,1) Frequency (F)         12
     Left-sided Pr <= F           0.9891
     Right-sided Pr >= F          0.0460

     Table Probability (P)        0.0351
     Two-sided Pr <= P            0.0726
              Sample Size = 46


           Table of Q01 by Q09
   Frequency     ,
   Percent       ,
   Row Pct       ,
   Col Pct       ,Agree to,Disagree,  Total
                 , Highly , to High,
                 ,agree   ,ly disag,
                 ,        ,ree     ,
   fffffffffffffffffffffffffffffffffff
   0-5 yrs       ,       9 ,     11 ,     20
                 ,  19.57 ,  23.91 ,  43.48
                 ,  45.00 ,  55.00 ,
                 ,  56.25 ,  36.67 ,
   fffffffffffffffffffffffffffffffffff
   Above 5 years ,       7 ,     19 ,     26
                 ,  15.22 ,  41.30 ,  56.52
                 ,  26.92 ,  73.08 ,
                 ,  43.75 ,  63.33 ,
   fffffffffffffffffffffffffffffffffff
   Total              16        30       46
                   34.78     65.22   100.00

      Statistics for Table of Q01 by Q09
Statistic                       DF       Value      Prob
fffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffff
Chi-Square                      1      1.6284    0.2019
Likelihood Ratio Chi-Square     1      1.6252    0.2024
Continuity Adj. Chi-Square      1      0.9290    0.3351
Mantel-Haenszel Chi-Square      1      1.5930    0.2069
Phi Coefficient                       0.1882
Contingency Coefficient               0.1849
Cramer's V                            0.1882

          Fisher's Exact Test
     ffffffffffffffffffffffffffffffffff
     Cell (1,1) Frequency (F)          9
     Left-sided Pr <= F           0.9438
     Right-sided Pr >= F          0.1676

     Table Probability (P)        0.1114
     Two-sided Pr <= P            0.2288
              Sample Size = 46
```

Table of Q01 by Q10

Frequency Percent Row Pct Col Pct	To great extent or somewhat	Very little or not at all	Total
0-5 yrs	9 19.57 45.00 81.82	11 23.91 55.00 31.43	20 43.48
Above 5 years	2 4.35 7.69 18.18	24 52.17 92.31 68.57	26 56.52
Total	11 23.91	35 76.09	46 100.00

Statistics for Table of Q01 by Q10

Statistic	DF	Value	Prob
Chi-Square	1	8.6476	0.0033
Likelihood Ratio Chi-Square	1	8.9795	0.0027
Continuity Adj. Chi-Square	1	6.7187	0.0095
Mantel-Haenszel Chi-Square	1	8.4596	0.0036
Phi Coefficient		0.4336	
Contingency Coefficient		0.3978	
Cramer's V		0.4336	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	9
Left-sided Pr <= F	0.9996
Right-sided Pr >= F	0.0045
Table Probability (P)	0.0041
Two-sided Pr <= P	0.0050

Sample Size = 46

Table of Q01 by Q11

Frequency Percent Row Pct Col Pct	Agree to, Highly agree	Disagree, to High, ly disagree	Total
0-5 yrs	15 32.61 75.00 57.69	5 10.87 25.00 25.00	20 43.48
Above 5 years	11 23.91 42.31 42.31	15 32.61 57.69 75.00	26 56.52
Total	26 56.52	20 43.48	46 100.00

Statistics for Table of Q01 by Q11

Statistic	DF	Value	Prob
Chi-Square	1	4.9164	0.0266
Likelihood Ratio Chi-Square	1	5.0655	0.0244
Continuity Adj. Chi-Square	1	3.6761	0.0552
Mantel-Haenszel Chi-Square	1	4.8095	0.0283
Phi Coefficient		0.3269	
Contingency Coefficient		0.3107	
Cramer's V		0.3269	

Fisher's Exact Test

Cell (1,1) Frequency (F)	15
Left-sided Pr <= F	0.9947
Right-sided Pr >= F	0.0266
Table Probability (P)	0.0214
Two-sided Pr <= P	0.0375

Sample Size = 46

Table of Q01 by Q12

Frequency Percent Row Pct Col Pct	To great extent or somewhat	Very little or not at all	Total
0-5 yrs	15 32.61 75.00 62.50	5 10.87 25.00 22.73	20 43.48
Above 5 years	9 19.57 34.62 37.50	17 36.96 65.38 77.27	26 56.52
Total	24 52.17	22 47.83	46 100.00

Statistics for Table of Q01 by Q12

Statistic	DF	Value	Prob

Chi-Square	1	7.3885	0.0066
Likelihood Ratio Chi-Square	1	7.6474	0.0057
Continuity Adj. Chi-Square	1	5.8587	0.0155
Mantel-Haenszel Chi-Square	1	7.2279	0.0072
Phi Coefficient		0.4008	
Contingency Coefficient		0.3720	
Cramer's V		0.4008	

Fisher's Exact Test

Cell (1,1) Frequency (F)	15
Left-sided Pr <= F	0.9989
Right-sided Pr >= F	0.0072
Table Probability (P)	0.0061
Two-sided Pr <= P	0.0086

Sample Size = 46

Table of Q01 by Q13

Frequency / Percent / Row Pct / Col Pct	To great, extent, or somewhat	Very little, tle or not at all	Total
0-5 yrs	16	4	20
	34.78	8.70	43.48
	80.00	20.00	
	57.14	22.22	
Above 5 years	12	14	26
	26.09	30.43	56.52
	46.15	53.85	
	42.86	77.78	
Total	28	18	46
	60.87	39.13	100.00

Statistics for Table of Q01 by Q13

Statistic	DF	Value	Prob
Chi-Square	1	5.4369	0.0197
Likelihood Ratio Chi-Square	1	5.6724	0.0172
Continuity Adj. Chi-Square	1	4.1087	0.0427
Mantel-Haenszel Chi-Square	1	5.3187	0.0211
Phi Coefficient		0.3438	
Contingency Coefficient		0.3251	
Cramer's V		0.3438	

Fisher's Exact Test

Cell (1,1) Frequency (F)	16
Left-sided Pr <= F	0.9965
Right-sided Pr >= F	0.0201
Table Probability (P)	0.0166
Two-sided Pr <= P	0.0324

Sample Size = 46

Annexure C :

Inferential statistics

Wilcoxon Scores (Rank Sums) for Variable Q02
Classified by Variable Q01

Q01	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0-5 yrs	20	478.0	470.0	37.364247	23.900000
Above 5 years	26	603.0	611.0	37.364247	23.192308

Average scores were used for ties.

Wilcoxon Two-Sample Test

Statistic	478.0000
Normal Approximation	
Z	0.2007
One-Sided Pr > Z	0.4205
Two-Sided Pr > |Z|	0.8409
t Approximation	
One-Sided Pr > Z	0.4209
Two-Sided Pr > |Z|	0.8418

Z includes a continuity correction of 0.5.

Kruskal-Wallis Test

Chi-Square	0.0458
DF	1
Pr > Chi-Square	0.8305

Wilcoxon Scores (Rank Sums) for Variable Q03
Classified by Variable Q01

Q01	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0-5 yrs	20	440.50	470.0	40.416312	22.025000
Above 5 years	26	640.50	611.0	40.416312	24.634615

Average scores were used for ties.

Wilcoxon Two-Sample Test

Statistic	440.5000
Normal Approximation	
Z	-0.7175
One-Sided Pr < Z	0.2365
Two-Sided Pr > |Z|	0.4730
t Approximation	
One-Sided Pr < Z	0.2384
Two-Sided Pr > |Z|	0.4768

Z includes a continuity correction of 0.5.

Kruskal-Wallis Test

Chi-Square	0.5328
DF	1
Pr > Chi-Square	0.4654

Wilcoxon Scores (Rank Sums) for Variable Q04
Classified by Variable Q01

Q01	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0-5 yrs	20	471.0	470.0	38.705003	23.550000
Above 5 years	26	610.0	611.0	38.705003	23.461538

Average scores were used for ties.

Wilcoxon Two-Sample Test

Statistic	471.0000
Normal Approximation	
Z	0.0129
One-Sided Pr > Z	0.4948
Two-Sided Pr > |Z|	0.9897
t Approximation	
One-Sided Pr > Z	0.4949
Two-Sided Pr > |Z|	0.9898

Z includes a continuity correction of 0.5.

Kruskal-Wallis Test

Chi-Square	0.0007
DF	1
Pr > Chi-Square	0.9794

Wilcoxon Scores (Rank Sums) for Variable Q05
Classified by Variable Q01

Q01	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0-5 yrs	20	448.0	470.0	36.471152	22.400000
Above 5 years	26	633.0	611.0	36.471152	24.346154

Average scores were used for ties.

Wilcoxon Two-Sample Test

Statistic	448.0000
Normal Approximation	
Z	-0.5895
One-Sided Pr < Z	0.2778
Two-Sided Pr > |Z|	0.5555
t Approximation	
One-Sided Pr < Z	0.2792
Two-Sided Pr > |Z|	0.5585

Z includes a continuity correction of 0.5.

Kruskal-Wallis Test

Chi-Square	0.3639
DF	1
Pr > Chi-Square	0.5464

Wilcoxon Scores (Rank Sums) for Variable Q06
Classified by Variable Q01

Q01	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0-5 yrs	20	424.50	470.0	41.470087	21.2250
Above 5 years	26	656.50	611.0	41.470087	25.2500

```
                    Average scores were used for ties.

                        Wilcoxon Two-Sample Test
                    Statistic             424.5000
                    Normal Approximation
                    Z                       -1.0851
                    One-Sided Pr <  Z        0.1389
                    Two-Sided Pr > |Z|       0.2779

                    t Approximation
                    One-Sided Pr <  Z        0.1418
                    Two-Sided Pr > |Z|       0.2836
                Z includes a continuity correction of 0.5.

                        Kruskal-Wallis Test
                    Chi-Square               1.2038
                    DF                            1
                    Pr > Chi-Square          0.2726

               Wilcoxon Scores (Rank Sums) for Variable Q07
                        Classified by Variable Q01
                             Sum of      Expected       Std Dev          Mean
Q01                 N        Scores      Under H0      Under H0         Score
ƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒ
0-5 yrs            20         447.0         470.0     39.108545     22.350000
Above 5 years      26         634.0         611.0     39.108545     24.384615
                    Average scores were used for ties.

                        Wilcoxon Two-Sample Test
                    Statistic             447.0000
                    Normal Approximation
                    Z                       -0.5753
                    One-Sided Pr <  Z        0.2825
                    Two-Sided Pr > |Z|       0.5651

                    t Approximation
                    One-Sided Pr <  Z        0.2840
                    Two-Sided Pr > |Z|       0.5679
                Z includes a continuity correction of 0.5.
                        Kruskal-Wallis Test
                    Chi-Square               0.3459
                    DF                            1
                    Pr > Chi-Square          0.5565

               Wilcoxon Scores (Rank Sums) for Variable Q08
                        Classified by Variable Q01
                             Sum of      Expected       Std Dev          Mean
Q01                 N        Scores      Under H0      Under H0         Score
ƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒ
0-5 yrs            20         409.0         470.0     42.982639     20.450000
Above 5 years      26         672.0         611.0     42.982639     25.846154
                    Average scores were used for ties.

                        Wilcoxon Two-Sample Test
                    Statistic             409.0000
                    Normal Approximation
                    Z                       -1.4075
                    One-Sided Pr <  Z        0.0796
                    Two-Sided Pr > |Z|       0.1593

                    t Approximation
                    One-Sided Pr <  Z        0.0831
                    Two-Sided Pr > |Z|       0.1661
                Z includes a continuity correction of 0.5.

                        Kruskal-Wallis Test
                    Chi-Square               2.0141
                    DF                            1
                    Pr > Chi-Square          0.1558

               Wilcoxon Scores (Rank Sums) for Variable Q09
                        Classified by Variable Q01
                             Sum of      Expected       Std Dev          Mean
Q01                 N        Scores      Under H0      Under H0         Score
ƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒ
0-5 yrs            20         406.0         470.0     41.062224     20.300000
Above 5 years      26         675.0         611.0     41.062224     25.961538
                    Average scores were used for ties.

                        Wilcoxon Two-Sample Test
                    Statistic             406.0000
                    Normal Approximation
                    Z                       -1.5464
                    One-Sided Pr <  Z        0.0610
                    Two-Sided Pr > |Z|       0.1220

                    t Approximation
                    One-Sided Pr <  Z        0.0645
                    Two-Sided Pr > |Z|       0.1290
                Z includes a continuity correction of 0.5.

                        Kruskal-Wallis Test
                    Chi-Square               2.4293
                    DF                            1
                    Pr > Chi-Square          0.1191

               Wilcoxon Scores (Rank Sums) for Variable Q10
                        Classified by Variable Q01
                             Sum of      Expected       Std Dev          Mean
Q01                 N        Scores      Under H0      Under H0         Score
ƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒƒ
0-5 yrs            20         354.50         470.0     41.001002     17.725000
Above 5 years      26         726.50         611.0     41.001002     27.942308
                    Average scores were used for ties.

                        Wilcoxon Two-Sample Test
                    Statistic             354.5000
                    Normal Approximation
                    Z                       -2.8048
                    One-Sided Pr <  Z        0.0025
                    Two-Sided Pr > |Z|       0.0050

                    t Approximation
                    One-Sided Pr <  Z        0.0037
                    Two-Sided Pr > |Z|       0.0074
                Z includes a continuity correction of 0.5.
```

Kruskal-Wallis Test	
Chi-Square	7.9355
DF	1
Pr > Chi-Square	0.0048

Wilcoxon Scores (Rank Sums) for Variable Q11
Classified by Variable Q01

Q01	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0-5 yrs	20	377.0	470.0	39.584191	18.850000
Above 5 years	26	704.0	611.0	39.584191	27.076923

Average scores were used for ties.

Wilcoxon Two-Sample Test	
Statistic	377.0000
Normal Approximation	
Z	-2.3368
One-Sided Pr < Z	0.0097
Two-Sided Pr > |Z|	0.0195
t Approximation	
One-Sided Pr < Z	0.0120
Two-Sided Pr > |Z|	0.0240

Z includes a continuity correction of 0.5.

Kruskal-Wallis Test	
Chi-Square	5.5198
DF	1
Pr > Chi-Square	0.0188

Wilcoxon Scores (Rank Sums) for Variable Q12
Classified by Variable Q01

Q01	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0-5 yrs	20	354.50	470.0	41.341163	17.725000
Above 5 years	26	726.50	611.0	41.341163	27.942308

Average scores were used for ties.

Wilcoxon Two-Sample Test	
Statistic	354.5000
Normal Approximation	
Z	-2.7817
One-Sided Pr < Z	0.0027
Two-Sided Pr > |Z|	0.0054
t Approximation	
One-Sided Pr < Z	0.0039
Two-Sided Pr > |Z|	0.0079

Z includes a continuity correction of 0.5.

Kruskal-Wallis Test	
Chi-Square	7.8055
DF	1
Pr > Chi-Square	0.0052

Wilcoxon Scores (Rank Sums) for Variable Q13
Classified by Variable Q01

Q01	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0-5 yrs	20	354.0	470.0	41.406434	17.700000
Above 5 years	26	727.0	611.0	41.406434	27.961538

Average scores were used for ties.

Wilcoxon Two-Sample Test	
Statistic	354.0000
Normal Approximation	
Z	-2.7894
One-Sided Pr < Z	0.0026
Two-Sided Pr > |Z|	0.0053
t Approximation	
One-Sided Pr < Z	0.0039
Two-Sided Pr > |Z|	0.0077

Z includes a continuity correction of 0.5.

Kruskal-Wallis Test	
Chi-Square	7.8484
DF	1
Pr > Chi-Square	0.0051