

## Factors that Affect Productivity in Emergency and Rescue Services in The City of Tshwane

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### ABSTRACT

The purpose of the study was to assess and evaluate factors that affect the degree of job satisfaction of employees working in the Emergency and Rescue Services Department of the City of Tshwane. Data was collected from a stratified random sample of 149 employees of the Emergency and Rescue Services Department of the City of Tshwane. Data was collected from each one of the 149 respondents who were selected for the study by using a structured, pre-tested and validated questionnaire of study consisting of 47 indicators of productivity in public institutions. Face validity was used for ensuring validity. The Cronbach Alpha test was used for ensuring reliability and internal consistency. Crosstab analyses and logit analysis were used for identifying key predictors of job satisfaction.

The study found that 77.18% of respondents who took part in the study were satisfied enough by the standards of Berman (2015), whereas the remaining 22.82% of respondents were not satisfied enough. Based on results obtained from crosstab analyses, the degree of job satisfaction of employees was significantly associated with 5 factors. These 5 factors were the degree of support provided to employees for doing their jobs, the availability of a good variety of jobs to be done, the practice of appreciation of employees by line function managers, stability of the City of Tshwane, and the practice of evaluation of employees within six months of employment, in a decreasing order of strength. Based on results obtained from logit analysis, the degree of job satisfaction of employees was significantly influenced by 2 factors. These 3 factors were stability (stability of the City of Tshwane) and variety (availability of a good variety of work), in a decreasing order of strength.

**Key words:** City of Tshwane, Emergency and rescue services, Job satisfaction, Logit analysis.

### 1 INTRODUCTION AND BACKGROUND OF STUDY

The main objective of the study was to identify and quantify factors that affect the degree of job satisfaction of employees working in the Emergency and Rescue Services Department of the City of Tshwane. No such study has been conducted until now, and the study aims to fill the gap by conducting an empirical study that would enable the City of Tshwane to assess and evaluate the quality of services provided to residents of Erasmuskloof, Centurion and Hazelwood in the City of Tshwane.

Data was collected from a stratified random sample of 149 participants who were selected for the study from Erasmuskloof, Centurion and Hazelwood on a large number of socioeconomic variables that are known to affect the qual-

ity of service delivery by employees of the City of Tshwane. Data was collected from each of the 149 participants of study by using a structured, pre-tested and validated questionnaire of study consisting of commonly known indicators of service quality. Measurements of expectations and perceptions were done by using a 5-point ordinal scale. Face validity was used for ensuring validity. The Cronbach Alpha test was used for ensuring reliability and internal consistency. Frequency tables, two-by-two crosstab analyses and binary logistic regression analysis were used for performing data analyses. Factors that affect the quality of service delivery were identified by using odds ratios estimated from binary logistic regression analysis.

The key aim of study was to identify key predictors of service quality. The South African Constitution of 1996 (South African Government Communication and Information Sys-

tem, 1996) guarantees all South Africans the right to reliable, efficient and speedy emergency and rescue services at times of disaster and accidents. It is imperative that the City of Tshwane assesses the quality of services provided to the various communities in the City of Tshwane as a means of improving its current level of service delivery.

The study aimed at making a valuable contribution to the quality of emergency and rescue services provided to the various communities by the City of Tshwane. The study was based on a random sample drawn from among residents of the three communities at Erasmuskloof, Centurion and Hazelwood.

The design of the study was descriptive and cross-sectional. Data collection was done by using a questionnaire of study on the perception and expectation of residents. Ethical clearance was obtained from Tshwane University of Technology prior to data collection. Eligible respondents were selected for the study by using a sampling frame obtained from Statistics South Africa. The sample population was selected by means of probability sampling. This was done by using stratification in which zones were used as a stratification criterion. All in all, data was collected from a stratified random sample of size 149 people. The questionnaire used for data collection was pre-tested before it was used for actual data collection. This procedure is known as face validation. As a result of face validation, it was possible to refine the questionnaire of study before it was used for actual data collection. The questionnaire of study was self-administered by each of the 394 respondents who were selected for the study.

The City of Tshwane is the capital of South Africa. According to Statistics South Africa, the population size of the City of Tshwane in 2011 was roughly equal to 3 million (Statistics South Africa, 2012: 2-3). According to Statistics South Africa (2012: 2-3), the City of Tshwane Metropolitan Municipality (CTMM) was established on 05 December 2000, and is made up of 13 former city and town councils. The CTMM covers a total area of 3, 200 square km. The City of Tshwane Metropolitan Municipality consists of the following geographical areas: Akasia, Aeridgeville, Bronberg, Bronkhorstspuit, Centurion, Crocodile River, Cullinan/Rayton/Refilwe, Eersterust, Ekangala, Elands River, Ga-Rankuwa, Hammanskraal, Laudium, Mabopane, Mamelodi, Pienaarsrivier, Pretoria, Rethabiseng, Roodeplaat, Soshanguve, Temba, Winterveld and Zithobeni. The inner city of the CTMM accounts for 40% of the population of the CTMM, and contributes 91% of the economic output of the CTMM. The CTMM contains the following major Local Councils (Mamelodi, Atteridgeville, Parts of Ga-Rankuwa, Soshanguve, and Mabopane and Winterveld). The townships jointly account for about half of the population of the CTMM.

The annual report released by the City of Tshwane Metropolitan Municipality for the year 2011 shows that emergency and rescue services are vital in the CTMM as a means of protecting public and private property, infrastructure, businesses and lives and the general environment. Emergency and rescue operations are an essential aspect of

services that are routinely provided to the general public in the City of Tshwane (City of Tshwane Metropolitan Municipality, 2013: 2-4). The management of emergency and rescue services is budgeted for by the CTMM. According to the United States Environmental Protection Agency (2013: 2-4), major metropolitan municipalities of the world should utilize modern methods and techniques of emergency and rescue operations in order to improve their overall efficiency.

The capacity to render reliable and highly efficient emergency and rescue services is crucially important for metropolitan municipalities such as the CTMM to grow on a sustainable basis. Such capacity is also needed for fulfilling the routine needs and operational requirements of businesses that operate in the CTMM. To this end, the City of Tshwane needs to develop adequate capacity for rendering reliable and efficient emergency and rescue services by utilizing modern technology and highly innovative methods and strategies. Doing so requires drawing on examples set out by large municipalities such as New York, London and Tokyo.

The annual report issued by the City of Tshwane for the financial year 2011/2012 shows that the City has received a qualified audit report from the Auditor-General (Nombebe, 2012: 1-23). According to the Auditor-General, all local councils and municipalities are required to utilize their budgets according to approved plans of action for strategically and operationally justifiable causes of expenditure. In all contemporary organizations, it is vital to adhere to approved plans of action in the course of managing emergency and rescue services. In the City of Tshwane, this is done by developing an International Development Plan (IDP) as is required by the Municipal Systems Act of 2000. The IDP must be constructed in such a way that all emergency and rescue operations are appropriately identified and costed so that expenses can be monitored and evaluated at each stage of accomplishment. The study conducted by Fuller and Tian (2006: 287-304) shows that it is vital for all municipalities to manage their emergency and rescue operations based on a scientifically appropriate and logical operational plan. In this regard, it is vital to adhere to total quality management principles.

## 2 OBJECTIVE OF STUDY

The overall objective of study was to assess the degree to which residents of Erasmuskloof, Centurion and Hazelwood in the City of Tshwane are satisfied with the quality of emergency and rescue services that are provided to them by the City of Tshwane. The study was conducted in order to address the following three specific objectives of study:

To determine the percentage of residents of Erasmuskloof, Centurion and Hazelwood who are satisfied with the quality of emergency and rescue services that are provided to them by the City of Tshwane;

To identify and quantify key indicators of service delivery in respect of emergency and rescue services that are provided to residents of Erasmuskloof, Centurion and Hazelwood in the City of Tshwane; and

To propose feasible remedial actions that could be taken by the City of Tshwane as a means of motivating employees who are responsible for providing emergency and rescue services to residents of Erasmuskloof, Centurion and Hazelwood in the City of Tshwane.

### 3 LITERATURE REVIEW

According to Parasuraman, Zeithaml and Berry (1988: 12-37), service quality can only be assessed appropriately by gathering empirical evidence from customers on five dimensions that are known to influence the degree to which customers are satisfied with the quality of services that are provided to them. These five dimensions are reliability, assurance, tangibles, empathy and responsiveness. This study is based on data gathered on these five dimensions of service quality. According to Zoogah, Vora, Richard and Peng (2011: 510-529), the quality of service delivery in large and complex municipalities such as the City of Tshwane depends on various indicators of service quality standards and measurements. The authors have provided norms and standards that could be used for the assessment of service quality in municipalities. According to the authors, satisfaction with the quality of service delivery in municipalities is affected by perception and expectation. The study conducted by Peng, Rabi and Sea-Jin (2010: 373-376) shows that failure to meet expectations of service quality standards has the potential for undermining the degree of trust and confidence customers have on bodies that are responsible for municipal service delivery. Service quality is measured based on well known definitions. In the case of the City of Tshwane, the following indicators are quite relevant to the measurement of efficiency the provision of emergency and rescue services.

Zoogah, Vora, Richard and Peng (2011: 510-529) define assurance as the task of achieving 100% quality and maintaining it as an ongoing process. This means that service providers need to continually identify and solve quality assurance problems by measuring quality assurance indicators on a regular basis. Satisfactory assurance is obtained in cases where a thorough inspection conducted by an independent body confirms that the expectations of customers are totally satisfied or exceeded. Community refers to people living in an area with similar interests or origins. A councilor is defined as a member of a town or county council or a community leader representative. A councilor is the point of contact between ordinary residents and the City of Tshwane. Peng, Rabi and Sea-Jin (2010: 373-376) define leadership as the desire for responsibility, preference for moderated risk, confidence in personal success, desire for immediate feedback, high level of energy a future orientation skill in organization, high degree of commitment and flexibility. Daley-Harris (2011: 46-61) defines local government legislation as an integrated development plan that must be adhered to by all municipalities as a means of achieving service delivery requirements and objectives. Peng, Rabi and Sea-Jin (2010: 373-376) define organizational behavior as characteristics of organizations that

explain how plans of actions are implemented routinely. The authors point out that reliable service quality standards are a product of robust consultation between service providers and customers as well as all relevant stakeholders. According to Ja A Skela and Lo Nnqvist (2011: 289-302), organizational culture is defined as a system of shared beliefs, norms, values and background of members of a group in an organization. The authors point out that organizational culture dictates the overall efficiency of fulfilling service delivery obligations to customers. Dasanayaka and Sardana (2010: 50-70) define service quality as a clear description of achievable and tangible outputs arising from service delivery requirements. According to the authors, the assessment of service quality must be done based on clearly defined and measurable end results, goals and objectives. The authors argue that measurement and assessment of quality must be done by independently and suitably qualified bodies as a means of minimizing the likelihood of conflict of interest. The study conducted by Gliberman, Mike and Daniel (2011: 1-14) shows that quality must clearly define the list of tasks that must be accomplished by service providers, and such activities must be agreed upon by all stakeholders prior to the provision of services. According to Harris and Rae (2010: 4-12), quality assurance is defined as the ability of service providers to fulfill expectations of customers completely based on a mutually agreed set of service delivery standards. The authors point out that the assessment of quality assurance depends upon service delivery norms and standards that have been agreed upon mutually by the service provider, customer and relevant stakeholders. The assessment of quality assurance requires a thorough comparison of expected results and specific objectives in which service delivery requirements are outlined. Such comparison often includes the analysis of indicators, norms and standards that are known to affect the efficiency with which tasks are accomplished, and the cost of service delivery. Some of these factors are related to organizational and individual behavior. The factors also include factors such as labour cost and the quality of working relationship between employers and employees as well as the relevant statutory and legislative conditions in which organizations utilize, manage and pay for labour for accomplishing municipal service delivery. Smedlund (2008: 63-77) defines quality performance as a synergetic combination of knowledge, skills, information, systems, facilities and equipment, behavior and the outcomes the customer receives. The author points out that quality performance requires the use of standard monitoring and evaluation techniques as a means of ensuring value for money in municipal service delivery. Monitoring and evaluation must be done based on well defined indicators of municipal service delivery.

By local and international standards, the list of legislations and Acts listed above suggest that South Africans have adequate legislative tools that are designed for ensuring satisfactory service delivery. The problem has not been the lack of legislation, but rather the failure to enforce the relevant pieces of legislation and Acts (South African Parliament, 2013). According to Alexander (2010: 25-40) and

Zheng, O'Neill and Morrison (2011: 175-179), it is essential for central governments to hold local governments and municipalities accountable to the general public as a means of ensuring optimal service delivery and the optimal utilization of public finances and resources.

#### 4 METHODS AND MATERIALS OF STUDY

The design of this study was descriptive and cross-sectional. It was descriptive because the aim of study was to explain and describe factors that affect the degree of job satisfaction of employees working in the Emergency and Rescue Services Department of the City of Tshwane. The study was cross-sectional because data was collected from the 394 participants who took part in the study once only. According to Babbie (2005:44), a descriptive study design is suitable for an exploratory study of this kind.

A simple random sample of size  $n=149$  respondents was selected for the study from the Emergency and Rescue Services Department of the City of Tshwane. In order to be eligible for taking part in the study, respondents had to be employees of the Emergency and Rescue Services Department of the City of Tshwane. The sample of the size and the sampling technique are both appropriate for an exploratory study of this kind according to White (2005: 44-49).

Data was collected from 149 respondents who worked in the Emergency and Rescue Services Department of the City of Tshwane by using a structured, pre-tested and validated questionnaire of study consisting of 47 indicators of productivity. Measurements of expectations and perceptions were done by using a 5-point ordinal scale. Face validity was used for ensuring validity. The Cronbach Alpha test was used for ensuring reliability and internal consistency.

The questionnaire of study consisted of 47 socioeconomic variables of study. These were variables that are known to affect the degree of job satisfaction of employees working in service delivery institutions such as municipalities. Appendix A shows details of the 47 variables of study. The questionnaire of study is based on the study conducted by Haji and Lewis (2013: 58-65) for the assessment of the degree of job satisfaction of employees working in large service delivery institutions such as the City of Tshwane.

Three statistical procedures of data analysis were used in the study. These were frequency tables, cross-tab analyses (Pearson's chi-square tests of association), and logit analysis. Two-by-two crosstab analyses or Pearson's two-by-two chi-square tests of association (Hair, Black, Babin and Anderson, 2010) were performed between the dependent variable of study, Y, and each of the other independent variables of study. Logit analysis (Hosmer and Lemeshow, 2013) was used for identifying key predictors of job satisfaction of employees by estimating odds ratios.

#### 5 RESULTS OF STUDY

Table 1 shows frequency proportions that indicate the general characteristics of the 149 employees of City of Tshwane

who were selected for the study. It can be seen from the table that 115 of the 149 respondents who were selected for the study (77.18%) were satisfied enough with their jobs by the standards of Berman (2015), whereas the remaining 34 of the 149 respondents who were selected for the study (22.82%) were not satisfied enough with their jobs by the same standards. The table shows that 70.47% of the 394 participants of the study were male, whereas the remaining 43.40% were female. About 89% of respondents were African, whereas about 11% of respondents were White. About 17% of respondents had ages of 18 to 30 years. About 40% of respondents had ages of 31 to 40 years. About 33% of respondents had ages of 41 to 50 years. About 10% of respondents had ages of 51 to 60 years. Only one respondent had an age of 61 years or above. About 40% of respondents had served the City of Tshwane for 5 to 10 years at the time of the study. About 15% of respondents had served for 11 to 15 years. About 16% of respondents had served for 16 to 20 years. About 17% of respondents had served for 21 years or longer at the time of the study. About 14% of respondents had matric level academic qualifications or less. About 29% of respondents had post-matric certificates. About 30% of respondents had diplomas. About 26% of respondents had Bachelor's degrees. Only 2 of the 149 respondents (1.34%) had Master's degrees or above.

Table 2 shows frequency proportions for positions occupied by the 149 respondents who took part in the study along with their annual salaries in Rand. About 2% of respondents were assistant chief officers. About 2% of respondents were deputy chief officers. About 5% of respondents were divisional officers. About 2% of respondents were emergency practitioners. About 44% of respondents were leading officers. About 9% of respondents were senior fire officers. About 27% of respondents were officers. The table shows that about 18% of respondents had annual salaries of R350, 000 or above. About 10% of employees had annual salaries of R300, 001 to R350, 000. About 23% of employees had annual salaries of R250, 001 to R300, 000. About 21% of employees had annual salaries of R200, 001 to R250, 000. About 18% of employees had annual salaries of R150, 001 to R200, 000. About 5% of employees had annual salaries of R100, 001 to R150, 000. About 3% of employees had annual salaries of R100, 000 or less.

Table 3 shows frequency proportions for the working divisions of the 149 respondents who took part in the study. It can be seen from the table that about 19% of respondents worked in the Emergency Management Services Division. About 75% of respondents worked in the Fire Division. About 5% of respondents worked in the Control Centre. Only 2 respondents worked in the Training Division.

Table 4 shows frequency counts and percentages for factors that motivate employees to serve the City of Tshwane loyally.

Table 5 shows frequency counts and percentages for factors that affect the perception of employees on salaries and employee benefits.

Table 6 shows frequency counts and percentages for factors that affect the perception of employees on valuable training opportunities.

**Table 1.** General characteristics of respondents (n=149)

Variable of study	Frequency count (Percentage)
Satisfaction with job by the standards of Berman (2015)	Adequate: 115 (77.18%) Inadequate: 34 (22.82%)
Gender of respondents	Male: 105 (70.47%) Female: 44 (29.53%)
Age category of respondents	18 to 30 years: 25 (16.78%) 31 to 40 years: 59 (39.60%) 41 to 50 years: 49 (32.89%) 51 to 60 years: 15 (10.07%) 61 years or more: 1 (0.67%)
Duration of service in years	5 to 10 years: 60 (40.27%) 11 to 15 years: 22 (14.77%) 16 to 20 years: 24 (16.11%) 21 years or more: 26 (17.45%)
Highest level of education	Matric level or less: 21 (14.09%) Certificate: 43 (28.86%) Diploma: 45 (30.20%) Bachelor's degree: 38 (25.50%) Master's degree or above: 2 (1.34%)
Race group of respondent	African: 133 (89.26%) White: 16 (10.74%)

**Table 2.** Positions and monthly salaries of respondents (n=149)

Variable of study	Frequency count (Percentage)
Positions of respondents	Assistant chief officer: 3 (2.01%) Deputy chief officer: 3 (2.01%) Divisional officer: 8 (5.37%) Emergency practitioner: 3 (2.01%) Leading officer: 65 (43.62%) Senior fire officer: 13 (8.72%) Officer: 40 (26.85%) Others: 14 (9.40%)
Annual salaries of respondents in Rand	Above R350, 000: 27 (18.12%) R300, 001 to R350, 000: 15 (10.07%) R250, 001 to R300, 000: 35 (23.49%) R200, 001 to R250, 000: 32 (21.48%) R150, 001 to R200, 000: 27 (18.12%) R100, 001 to R150, 000: 8 (5.37%) R100, 000 or less: 5 (3.36%)

**Table 3.** Working divisions of respondents (n=149)

Variable of study	Frequency count (Percentage)
Working divisions of respondents within the Emergency and Rescue Services Department of the City of Tshwane	Emergency Management Services: 28 (18.79%) Fire Division: 112 (75.17%) Control Centre: 7 (4.70%) Training Division: 2 (1.34%)

Table 7 shows frequency counts and percentages for factors that affect the perception of employees on working conditions.

Table 8 shows frequency counts and percentages for factors that affect the perception of employees on the provision of mentorship and support to employees.

Table 9 shows frequency counts and percentages for factors that affect the perception of employees on the provision of effective supervision at the workplace.

Table 10 shows frequency counts and percentages for factors that affect the perception of employees on day-to-day

activities at the workplace.

It can be seen from the above tables that employees were generally fairly well satisfied with their working conditions and incentives that were provided to them by the City of Tshwane.

Table 11 shows 5 factors that are significantly associated with job satisfaction at the workplace. All 5 factors are highly significant at the 0.001 level as their P-values are all smaller than 0.001. At the 0.001% level of significance, significant associations have large observed chi-square values and P-values that are smaller than 0.001. For the each

**Table 4.** Factors that motivate employees to serve the City of Tshwane loyally (n=149)

Variable of study	Frequency count (Percentage)
Annual performance bonus payments (pbonus)	Strongly agree: 52 (34.90%) Agree: 36 (24.16%) Neutral: 16 (10.74%) Disagree: 14 (9.40%) Strongly disagree: 31 (20.81%)
Long service awards (longservice)	Strongly agree: 26 (17.45%) Agree: 31 (20.81%) Neutral: 26 (17.45%) Disagree: 34 (22.82%) Strongly disagree: 32 (21.48%)
Prestige (prestige)	Strongly agree: 8 (5.37%) Agree: 11 (7.38%) Neutral: 48 (32.21%) Disagree: 36 (24.16%) Strongly disagree: 46 (30.87%)
There is meaning in the work that I do (meaning)	Strongly agree: 63 (42.28%) Agree: 58 (38.93%) Neutral: 15 (10.07%) Disagree: 8 (5.37%) Strongly disagree: 5 (3.36%)
There is work-life balance such as having time for family (balance)	Strongly agree: 29 (19.46%) Agree: 47 (31.54%) Neutral: 44 (29.53%) Disagree: 21 (14.09%) Strongly disagree: 8 (5.37%)

**Table 5.** Factors that affect perception on salaries and employee benefits (n=149)

Variable of study	Frequency count (Percentage)
Total remuneration is good (rem)	Strongly agree: 14 (9.40%) Agree: 43 (28.86%) Neutral: 51 (34.23%) Disagree: 25 (16.78%) Strongly disagree: 16 (10.74%)
Fringe benefits (housing, medical and pension) are good (fringe)	Strongly agree: 17 (11.41%) Agree: 41 (27.52%) Neutral: 47 (31.54%) Disagree: 28 (18.79%) Strongly disagree: 16 (10.74%)
Service bonus is good (sbonus)	Strongly agree: 15 (10.07%) Agree: 45 (30.20%) Neutral: 41 (27.52%) Disagree: 17 (11.41%) Strongly disagree: 15 (10.07%)
Annual increases are good (annual)	Strongly agree: 19 (12.75%) Agree: 35 (23.49%) Neutral: 35 (23.49%) Disagree: 40 (26.85%) Strongly disagree: 20 (13.42%)
It is a stable organisation to work for (stable)	Strongly agree: 33 (22.15%) Agree: 62 (41.61%) Neutral: 25 (16.78%) Disagree: 21 (14.09%) Strongly disagree: 8 (5.37%)

**Table 6.** Factors that affect perception on valuable training opportunities (n=149)

Variable of study	Frequency count (Percentage)
I am sufficiently trained to do my job effectively (trained)	Strongly agree: 53 (35.81%) Agree: 52 (35.14%) Neutral: 23 (15.54%) Disagree: 15 (10.14%) Strongly disagree: 5 (3.38%)
I would like to be groomed to become a leader or manager (leader)	Strongly agree: 16 (10.74%) Agree: 43 (28.86%) Neutral: 45 (30.20%) Disagree: 30 (20.13%) Strongly disagree: 15 (10.07%)
I would like to be groomed to become a senior specialist (specialist)	Strongly agree: 7 (4.76%) Agree: 49 (33.33%) Neutral: 45 (30.61%) Disagree: 32 (21.77%) Strongly disagree: 14 (9.52%)
I have great opportunities for career advancement (advancement)	Strongly agree: 12 (8.05%) Agree: 38 (25.50%) Neutral: 47 (31.54%) Disagree: 30 (20.13%) Strongly disagree: 22 (14.77%)
My personal development needs are not being addressed (development)	Strongly agree: 12 (8.05%) Agree: 34 (22.82%) Neutral: 44 (29.53%) Disagree: 32 (21.48%) Strongly disagree: 27 (18.12%)

one of the 5 factors listed in the table,  $P = 0.000$ . Based on results obtained from crosstab analyses, the degree of job satisfaction of employees was significantly associated with 5 factors. These 5 factors were the degree of support provided to employees for doing their jobs, the availability of a good variety of jobs to be done, the practice of appreciation of employees by line function managers, stability of the City of Tshwane, and the practice of evaluation of employees within six months of employment, in a decreasing order of strength.

It can be seen from Table 11 that all 5 factors are highly significant at the 0.001 level of significance. This is because all 5 P-values are significantly smaller than 0.001. The Pearson chi-square test of association is commonly used as a screening tool in cases where the number of variables of study is large. The results obtained above in Table 4.2.1 were used for subsequent analysis was done by using logit analysis.

Table 12 shows odds ratios estimated from logit analysis. It can be seen from the table that both predictor variables were significant at the 5% level of significance.

The percentage of overall correct classification for this procedure was equal to 75.23%. Percentage sensitivity for the fitted logistic regression model was equal to 52.94%. Percentage specificity for the fitted logistic regression model was equal to 87.18%. The P-value obtained from the Hosmer-Lemeshow goodness-of-fit test was equal to  $0.2146 > 0.05$ . This indicates that the fitted logistic regression model is fairly well reliable.

### 5.1 Interpretation of significant odds ratios

The odds ratio of the variable “Stability of City of Tshwane” is equal to 3.56. This indicates that an employee who believes that the City of Tshwane is a stable organisation is 3.56 times as likely to be satisfied with his or her job in comparison with another employee who does not believe that the City of Tshwane is a stable organisation.

The odds ratio of the variable “Availability of a good variety of jobs” is equal to 3.22. This indicates that employees who believe that there is a good variety of jobs at the workplace are 3.22 times as likely to be satisfied with their jobs in comparison with employees who do not believe that there is a good variety of jobs at the workplace.

## 6 DISCUSSION OF RESULTS

The purpose of the study was to assess and evaluate factors that affect the degree of job satisfaction of employees working in the Emergency and Rescue Services Department of the City of Tshwane. Data was collected from a stratified random sample of 149 employees of the Emergency and Rescue Services Department of the City of Tshwane. Data was collected from each one of the 149 respondents who were selected for the study by using a structured, pre-tested and validated questionnaire of study consisting of 47 indicators of productivity in public institutions. Face validity was used for ensuring validity. The Cronbach Alpha test was used for ensuring reliability and internal consistency. Crosstab anal-

**Table 7.** Factors that affect perception on working conditions (n=149)

Variable of study	Frequency count (Percentage)
There is flexibility at work (flexibility)	Strongly agree: 11 (7.38%) Agree: 45 (30.20%) Neutral: 45 (30.20%) Disagree: 32 (21.48%) Strongly disagree: 16 (10.74%)
There is a good variety of work (variety)	Strongly agree: 17 (11.41%) Agree: 63 (42.28%) Neutral: 35 (23.49%) Disagree: 20 (13.42%) Strongly disagree: 14 (9.40%)
I have autonomy at work (autonomy)	Strongly agree: 10 (6.71%) Agree: 49 (33.33%) Neutral: 47 (31.54%) Disagree: 29 (19.46%) Strongly disagree: 14 (9.52%)
I am able to juggle work and family responsibilities easily (juggle)	Strongly agree: 11 (7.38%) Agree: 54 (36.24%) Neutral: 52 (34.90%) Disagree: 21 (14.09%) Strongly disagree: 11 (7.38%)
I like large open-plan offices (openplan)	Strongly agree: 11 (7.38%) Agree: 52 (34.90%) Neutral: 40 (26.85%) Disagree: 32 (21.48%) Strongly disagree: 14 (9.40%)
I have the tools and equipment to do my job (tools)	Strongly agree: 13 (8.78%) Agree: 45 (30.41%) Neutral: 38 (25.68%) Disagree: 34 (22.97%) Strongly disagree: 18 (12.16%)

yses and logit analysis were used for identifying key predictors of job satisfaction.

The study found that 77.18% of respondents who took part in the study were satisfied enough by the standards of Berman (2015), whereas the remaining 22.82% of respondents were not satisfied enough. Based on results obtained from crosstab analyses, the degree of job satisfaction of employees was significantly associated with 5 factors. These 5 factors were the degree of support provided to employees for doing their jobs, the availability of a good variety of jobs to be done, the practice of appreciation of employees by line function managers, stability of the City of Tshwane, and the practice of evaluation of employees within six months of employment, in a decreasing order of strength. Based on results obtained from logit analysis, the degree of job satisfaction of employees was significantly influenced by 2 factors. These 3 factors were stability (stability of the City of Tshwane) and variety (availability of a good variety of work), in a decreasing order of strength.

The key finding of the study is that more than 75% of respondents who were selected for the study expressed satisfaction with the overall quality of services that were provided to them by the emergency and rescue staff of the City of Tshwane. Less than 5% of respondents had previ-

ously used emergency or rescue services that are provided to residents of Erasmuskloof, Centurion and Hazelwood in the City of Tshwane. Based on the findings of study, one can conclude that the vast majority of respondents were happy with the quality of services that were provided to them by the City of Tshwane.

People who experience emergency situations expect prompt and highly efficient action. This is human nature that is common to all people. In this regard, it is highly important for emergency and rescue staff to be appropriately equipped, trained and motivated in order to be dependable at all times. The study conducted by Jonsson and Lindbergh (2012: 548-561) indicates that local municipalities such as the City of Tshwane must have adequate capacity and resources in order to handle emergency situations that crop up from time to time. In this regard, the City of Tshwane is guided by the Municipal Systems Act of 2000 (Act 32 of 2000). The Act requires all local governments and municipalities to have an International Development Plan (IDP) that could be used as a guideline for managing the requirements, plan, review, monitoring, evaluation, assessment and consequences of all emergency and rescue operations. According to the Act, the City of Tshwane is required to develop a comprehensive emergency and rescue



**Table 8.** Perception on the provision of mentorship and support to employees (n=149)

Variable of study	Frequency count (Percentage)
I was given enough support and mentoring for doing my job (support)	Strongly agree: 12 (8.11%) Agree: 63 (42.57%) Neutral: 39 (26.35%) Disagree: 26 (17.57%) Strongly disagree: 8 (5.41%)
I was well received by my manager and colleagues (manager)	Strongly agree: 29 (19.46%) Agree: 73 (48.99%) Neutral: 29 (19.46%) Disagree: 14 (9.40%) Strongly disagree: 4 (2.68%)
I was well received by members of the community (community)	Strongly agree: 29 (19.46%) Agree: 92 (61.74%) Neutral: 17 (11.41%) Disagree: 8 (5.37%) Strongly disagree: 3 (2.01%)
I was given enough explanation on my core functional duties (duty)	Strongly agree: 25 (16.78%) Agree: 77 (51.68%) Neutral: 30 (20.13%) Disagree: 10 (6.71%) Strongly disagree: 7 (4.70%)
I was evaluated within six months of my employment (evaluation)	Strongly agree: 28 (18.79%) Agree: 67 (44.97%) Neutral: 27 (18.12%) Disagree: 17 (11.41%) Strongly disagree: 10 (6.71%)

management plan. One of the key aspects of such a plan is to secure adequately trained, equipped and motivated employees who could be relied upon at all times of crises. The regular training and motivation of such employees is crucially important for ensuring adequate preparedness. The study conducted by Judge and Piccolo (2012: 755-768) has shown that quality leadership and good governance are critical elements of the IDP plan. The IDP process requires all South African local governments and municipalities to prepare 5-year strategic and operational plans of action in consultation with communities and stakeholders. The plan covers budgets that are required for fulfilling infrastructural, development-related, socioeconomic and poverty alleviation projects that are run by municipalities such as the City of Tshwane. A well designed and comprehensive IDP plan has various parts. Such a plan adequately accounts for potential disaster management and emergency situations along with potential costs arising from logistical and manpower requirements of operations. The IDP plan also caters for the needs of communities that are affected by disasters and emergency situations. The IDP system allows all local governments and municipalities to budget for potential emergency and disaster managements. In cases where local municipalities lack the resources to cater for such needs, the IDP plan enables the South African national government to provide assistance.

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**Table 9.** Perception on the provision of effective supervision (n=149)

Variable of study	Frequency count (Percentage)
My line function manager appreciates me whenever I do a good job (appreciation)	Strongly agree: 29 (19.59%) Agree: 67 (45.27%) Neutral: 32 (21.62%) Disagree: 10 (6.76%) Strongly disagree: 10 (6.76%)
My line function manager treats me as an adult (adult)	Strongly agree: 23 (15.44%) Agree: 54 (36.24%) Neutral: 46 (30.87%) Disagree: 15 (10.07%) Strongly disagree: 11 (7.38%)
My line function manger responds quickly to grievances (quickly)	Strongly agree: 22 (14.77%) Agree: 41 (27.52%) Neutral: 47 (31.54%) Disagree: 29 (19.46%) Strongly disagree: 10 (6.71%)
My line function manger delivers on promises made (deliver)	Strongly agree: 26 (17.45%) Agree: 47 (31.54%) Neutral: 39 (26.17%) Disagree: 24 (16.11%) Strongly disagree: 13 (8.72%)
My line function manager avoids favouritism (nofavour)	Strongly agree: 19 (12.75%) Agree: 47 (31.54%) Neutral: 39 (26.17%) Disagree: 27 (18.12%) Strongly disagree: 17 (11.41%)
My line function manager takes the time to mentor and coach me (mentor)	Strongly agree: 27 (18.24%) Agree: 53 (35.81%) Neutral: 35 (23.65%) Disagree: 23 (15.54%) Strongly disagree: 10 (6.71%)
My line function manager involves me in decision making (decision)	Strongly agree: 40 (26.85%) Agree: 54 (36.24%) Neutral: 35 (23.49%) Disagree: 9 (6.04%) Strongly disagree: 11 (7.38%)
I have a good relationship with my line function manager (relationship)	Strongly agree: 15 (10.07%) Agree: 53 (35.57%) Neutral: 36 (24.16%) Disagree: 29 (19.46%) Strongly disagree: 16 (10.74%)
My line function manager is too busy to attend to my needs (toobusy)	Strongly agree: 8 (5.37%) Agree: 74 (49.66%) Neutral: 43 (28.86%) Disagree: 14 (9.40%) Strongly disagree: 10 (6.71%)

**Table 10.** Perception on day-to-day activities (n=149)

Variable of study	Frequency count (Percentage)
I have enough access to people and technology (access)	Strongly agree: 30 (20.13%) Agree: 66 (44.30%) Neutral: 42 (28.19%) Disagree: 9 (6.04%) Strongly disagree: 2 (1.34%)
I am able to meet my performance targets (targets)	Strongly agree: 17 (11.41%) Agree: 53 (35.57%) Neutral: 39 (26.17%) Disagree: 24 (16.11%) Strongly disagree: 16 (10.74%)
There is no backstabbing at the workplace (backstab)	Strongly agree: 23 (15.54%) Agree: 70 (47.30%) Neutral: 35 (23.65%) Disagree: 18 (12.16%) Strongly disagree: 2 (1.35%)
My colleagues are generally positive towards me (positive)	Strongly agree: 24 (16.11%) Agree: 81 (54.36%) Neutral: 33 (22.15%) Disagree: 6 (4.03%) Strongly disagree: 5 (3.36%)

**Table 11.** Results obtained from Pearson’s chi-square tests of associations

Factors that affect job satisfaction at the workplace (satisfied)	Observed Pearson chi-square value	P-value
I was given enough support and mentoring for doing my job (support)	45.3497	0.0000***
There is a good variety of work (variety)	16.1182	0.0000***
My line function manager appreciates me whenever I do a good job (appreciation)	13.7345	0.0000***
It is a stable organisation to work for (stable)	12.4191	0.0000***
I was evaluated within six months of my employment (evaluation)	12.4191	0.0000***

Legend: Significance levels at \* P<0.05; \*\* P<0.01; \*\*\* P<0.001

**Table 12.** Results from logit analysis

Factors that affect job satisfaction	Odds Ratio	P-value	95% C. I.
Stability of City of Tshwane	3.56	0.014	(1.29, 9.86)
Availability of a good variety of jobs	3.22	0.030	(1.12, 9.28)

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