

# **THE IMPACT OF OVER-REGULATION ON SMALL ENTERPRISES**

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## **Abstract**

Khale (2015), Marivate (2014) and Asah, Fatoki & Rungani (2015) have highlighted key obstacles of sustained growth and development in start-up enterprises in South Africa. All authors have shown that lack of efficient services, too much bureaucracy, over-regulation, lack of entrepreneurial skills and lack of good governance constitute key obstacles to growth and development in start-up enterprises. This paper is a result of a 3-year long survey (2012 to 2014) that was conducted in the City of Tshwane in order to identify and quantify key predictors of adequate municipal services that are routinely provided to customers who operate newly established small businesses in the Tshwane region of Gauteng Province in South Africa. Data was collected by using a structured, pre-tested and validated questionnaire of study from a stratified random sample of size 1,058 small businesses. The aim of study was to assess the impact of over-regulation and bureaucracy on the long-term survival and viability in small enterprises. Data analyses were performed by using probit analysis and the Cox Proportional Hazards Model. Additional analyses were performed by using in-depth interviews. The study showed that there was a significant association between the perception of over-regulation and failure in small enterprises. The results showed that 74% of businesses that failed were operated by individuals who had the perception of over-regulation and too much bureaucracy. The corresponding figure for viable businesses was only 11%. The viability of businesses was significantly influenced by 3 predictor variables. These 3 influential predictor variables were: negative perception on the quality of municipal services provided to newly established businesses [Hazard Ratio = 3.58; P=0.000; 95% C. I. = (1.45, 5.46)], inappropriate policy [Hazard Ratio = 3.19; P=0.000; 95% C. I. = (1.39, 5.28)], and lack of tailor made training programmes directed at newly established small businesses [Hazard Ratio = 2.89; P=0.000; 95% C. I. = (1.24, 4.77)], in a decreasing order of strength. Similar findings were obtained from the analyses of in-depth interviews.

**Keywords:** City of Tshwane, Small Enterprises, Over-regulation, Perception, Hazard Ratio

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## **1. INTRODUCTION AND BACKGROUND TO STUDY**

Findings of studies conducted in Gauteng Province by Marivate (2014), Kahle (2015), Brownson (2014), Henrekson (2014), Seeletse (2012) and Worku (2014) have found that red tape and too much bureaucracy stifle sustained growth and development in start-up businesses in various parts of Gauteng Province including Tshwane. One of the aims of the study was to assess the degree to which over-regulation affects sustained growth and viability in start-up enterprises in Gauteng Province. The study was based on data gathered from a random sample of n=1058 SMMEs in Tshwane. The study was conducted against the background of a high failure rate among newly established small businesses in the City of Tshwane. The study was conducted over a 3-year period (2012 to 2014). Data was collected monthly during the three-year period of study on socioeconomic variables that are known to affect the perception of business operators on the quality of municipal services to business operators and the general public.

Brownson (2014), Henrekson (2014), Marivate (2014), Khale (2015), Seeletse (2012) and Worku (2014) have reported that one key obstacle to

sustained growth and viability in newly established small businesses is failure to provide small businesses with high quality and efficient municipal services. Since 2012, a number of regulations and guidelines have been introduced by the South African National Department of Trade and Industry (2015) in order to monitor and evaluate the registration of newly established small enterprises. The aim of the study was to assess the relationship between over-regulation and sustained growth and development in newly established SMMEs conducting business in and around the City of Tshwane. According to Marivate (2014), the immediate consequences of over-regulation on start-up small businesses are inefficiency, rising cost of labour and operational cost, administrative burden and heavy tax. According to Seeletse (2012), these obstacles often lead to bankruptcy in newly established businesses.

Edoho (2015) and Henrekson (2014) have pointed out that over-regulation often leads to loss of innovation, loss of efficiency, over-expenditure and bankruptcy in newly established businesses in almost all Sub-Saharan African countries. Booyens (2011) has argued that good governance principles such as accountability, transparency and objectivity

are essential for ensuring sustained growth and viability in start-up businesses. The study conducted by Bezuidenhout and Nenungwi (2012) has shown that over-regulation is synonymous with corruption and the abuse of power. The study conducted by Asah, Fatoki and Rungani (2015) has found that over-regulation and too much bureaucracy are significantly associated with bankruptcy in newly established businesses in most Sub-Saharan African countries.

Smallbone, Lieg and North (1995), Smedlund (2008) and Shree & Urban (2012) have shown that the viability of newly established businesses is significantly influenced by determinants such as the quality of municipal services and the efficiency in which licenses are obtained by operators of newly established businesses, and that over-regulation has the potential for discouraging potential entrepreneurs from starting up new enterprises. According to Ladzani & Netswera (2009), over-regulation is a well-known cause of failure in newly established businesses in almost all Sub-Saharan African countries including South Africa. Asah, Fatoki and Rungani (2015) have reported that too much bureaucracy, over-regulation, red tape and lack of entrepreneurial skills are key obstacles to sustained growth and development to start-up enterprises in all economic sectors. Findings obtained from the study conducted by the South African Small Enterprise Development Agency (2013) have shown that 60% of all newly established small businesses in South Africa fail within their first year of operation. The study conducted by Marivate (2014) shows that the quality of routine municipal services that are provided to newly established SMMEs is grossly inadequate. The study by Khale (2015) has shown that lack of efficient municipal services is a key predictor of failure in newly established businesses in the City of Tshwane. A study conducted by the South African Department of Trade and Industry (2013) has pointed out that the degree of support provided to newly established SMMEs in all parts of South Africa is grossly inadequate. As a result of inadequate municipal services, newly established SMMEs are seen failing in a number of areas of specialization (Khale, 2015; Marivate, 2014; South African Chamber of Commerce and Industry, 2013; South African National Department of Trade and Industry, 2013; South African Small Enterprise Development Agency, 2013; Ladzani & Netswera, 2009).

## **2. RESEARCH QUESTIONS**

The study aims to provide adequate answers to the following two research questions:

- What are the key factors that affect negative perception on over-regulation and bureaucracy among operators of small, micro and medium-sized enterprises (SMMEs) in the Tshwane region of Gauteng Province in South Africa?
- Is there a statistically significant relationship between over-regulation and viability in start-up SMMEs?

## **3. OBJECTIVES OF STUDY**

The overall objective of study was to assess the impact of over-regulation on the viability of start-up

enterprises in the Tshwane region of Gauteng Province, South Africa. The study had the following specific objectives:

- To assess the relationship between the perception of over-regulation among operators of small, micro and medium-sized enterprises (SMMEs) and failure in start-up SMMEs in the Tshwane region of Gauteng Province in South Africa; and
- To identify and quantify key predictors of failure in start-up SMMEs in the Tshwane region of Gauteng Province in South Africa.

## **4. LITERATURE REVIEW**

Asah, Fatoki and Rungani (2015) have reported that over-regulation and too much bureaucracy are well known obstacles to start-up businesses. The perception of over-regulation, inefficiency in service delivery and too much bureaucracy are significantly associated with failure in newly established enterprises (Khale, 2015). According to the South African Small Enterprise Development Agency (2013: 1-5), although the South African Government promotes the growth and development of small and medium-sized enterprises by massively investing in local institutions such as the South African Centre for Small Business Promotion (CSBP), Ntsika Enterprise Promotion Agency and Khula Enterprise Finance, the failure rate in newly established South African small and medium-sized enterprises is as high as 60%. The study conducted by Ladzani and Netswera (2009: 17-19) has found that small and medium-sized enterprises often fail due to lack of access to finance and lack of entrepreneurial skills.

The South African Government provides two broad categories of assistance to SMMEs (financial and training). Financial assistance is provided to SMMEs by the South African Small Enterprises Finance Agency (SEFA), whereas skills based training on entrepreneurial activities is provided to SMMEs by NTSIKA Enterprises. SEFA started providing assistance to SMMEs in 2012. Before then, financial assistance was provided to SMMEs by Khula Enterprise Development Fund (KHULA). According to studies conducted by Rogerson (2012), Seeletse (2012), Urban & Naidoo (2012), Mbonyane & Ladzani (2012), Herrington and Kelley (2013) and Worku (2013), it is prudent to provide South African SMMEs with a combination of financial and non-financial assistance as a means of enabling the SMME sector to grow and develop on a sustainable basis. Karlsson and Warda (2014) have pointed out that the key predictors of incubation in Small, Micro and Medium-Sized business enterprises (SMMEs) are level of entrepreneurial, artisan and vocational skills, the ability to network with business partners and customers, the ability to provide cost effective, reliable, highly efficient and affordable services to customers, the ability to satisfy the business and operational requirements of clients, degree of access to microfinance, and the degree of hands-on mentoring of entrepreneurs working in newly established SMMEs. Although numerous programmes have been implemented by the South African National Department of Trade and Industry to promote the incubation of SMMEs since April 1994, the failure rate in newly established SMMEs is still quite high (Herrington & Kelley, 2013).

The White Paper on the national strategy for the development and promotion of small businesses in South Africa (South African National Department of Trade and Industry, 1995) states that the South African Government provides financial and training-related support to the SMME sector as a means of alleviating poverty and unemployment among the masses. Support is provided to newly established businesses and their operators in terms of finance and entrepreneurial training, mentorship and supervision. The key programmes of support are KHULA Enterprise Development Fund (KHULA), the National Youth Development Agency (NYDA), the Small Enterprise Development Agency (SEDA) and the Tshumisano Trust (South African National Department of Trade and Industry, 2010). A report published by the Small Enterprise Finance Agency (2015) shows the range of financial assistance programmes that could be used by newly established businesses along with the requirements for securing financial assistance. Annual reports issued by the South African National Department of Trade and Industry for the financial years 2008/2009, 2009/2010, 2010/2011, 2011/2012, 2012/2013 and 2013/2014 indicate that the amount of financial assistance provided to newly established small businesses as well as awareness about the financial programmes of assistance has increased steadily on a year-on-year basis between 2008 and 2014 (South African National Department of Trade and Industry, 2008, 2009, 2010, 2011, 2012, 2013, 2014).

A report issued by the South African Chamber of Commerce and Industry (2015) indicates that the business confidence index of South African businesses has decreased between 2008 and 2015 gradually from 107 in 2008 to 90 in 2015. The business confidence index is generated monthly as a measure of the level of business confidence within the South African economy. According to the World Bank (2014) and Gregg and Stewart (2013), the gradual decrease in business confidence between 2008 and 2015 could be attributed to bureaucratic inefficiency, an increase in inflation, an increase in the cost of goods and services, lack of transparency, accountability and good governance, shortage of entrepreneurial skills, shortcomings in macroeconomic policy and the presence of an adverse political environment. According to Smedlund (2008), there is a statistically significant association between the degree to which entrepreneurs working in small enterprises can utilize their enterprising knowledge as a means of increasing revenue and the availability of an economically enabling environment.

The South African Parliament (2008) has promulgated a number of acts in order to provide an economically enabling environment for small businesses. Most of these acts have been implemented by the South African Small Enterprise Development Agency (2013), and indicate that entrepreneurial skills must be developed, monitored and evaluated on a regular basis in emerging and newly established SMMEs as a means of reducing the high failure rate in newly established small businesses. The South African Industrial Development Corporation (IDC, 2015) provides financial assistance for industrial development to South African entrepreneurs. The IDC falls under the

Department of Economic Development. In 2008 and 2009, the IDC provided financial assistance to 159 small enterprises at a cost of 2.13 Billion Rand. The requirements for securing financial assistance from the IDC are the feasibility and viability of the proposed industrial project, the ability to pay back the loan borrowed for development, and the availability of adequate technical and entrepreneurial expertise and skills by applicants.

The Services Sector Education and Training Authority (SSETA) were established in the year 2000 in terms of the skills development Act of 1998 and are responsible for the disbursement of the training levies payable by all employers. These levies are collected by the South African Revenue Service (SARS) via the Department of Higher Education and Training (DHET), and are ploughed back into entities that provide skills-based training programmes to the youth. The authority provides quality education and training that meets sector needs in rural and urban areas. The Skills Development Act requires all employees earning over 500, 000 Rand per year to contribute a skills levy of 1% of their annual income.

KHULA Enterprise Finance (KEF) was established in 1996 by the South African Government in order to provide financial assistance to Small, Micro and Medium-Sized Enterprises (SMMEs) in South Africa (South African National Department of Trade and Industry, 2015). The Small Enterprise Finance Agency (SEFA) was established in 2012 as a result of the merger of South African Micro Apex Fund, Khula Enterprise Finance Ltd and the small business activities of IDC. The key mandate of SEFA is to foster the establishment, survival and growth of SMMEs as a means of alleviating poverty and creating jobs for the unemployed. SEFA has offices in all nine regions of South Africa and provides loans of 50, 000 Rand to 5 million Rand to SMMEs that meet the criteria for borrowing money needed for entrepreneurial activities (SEFA, 2015). The primary aim of KHULA Enterprises was to provide loans to SMMEs that do not qualify for loans at commercial banks. According to SEFA (2015), the agency provided assistance to retailers, and provided credit guarantee to applicants with no collateral. KHULA was operational between 1996 and 2011. Since 2012, the services of KHULA are being offered by SEFA. The key services that are offered to SMMEs by SEFA are financial assistance. This is done in phases known as mentorship and segmentation. Mentorship entails a pre-loan process in which the business seeks assistance for a business project. SEFA would then evaluate the proposal and assign a mentor to it to develop a sound business plan. SEFA would also pay up to 75% of the consultant's costs. The business would then submit this business plan to the banks to gain financing. The second stage refers to the start-up process. SEFA provides a mentor to that business project for a period of three months at no cost to the business. They would then monitor and assess the skills of that business, would recommend any form of training needed and even link that business with the right kind of people that would take the business venture forward. At the end of the 3-month period, the business operator could negotiate with SEFA to provide additional assistance at a nominal cost to the business. SEFA provides

financial assistance to SMMEs that are owned by South African citizens (SEFA, 2015).

According to Edoho (2015), the South African Micro Finance Apex Fund (SAMAF) was established to provide access to microloans and support to the social capital mobilisation. SAMAF is a wholesale funding institution tasked to facilitate the provision of affordable access to finance by micro, small and survivalist businesses for the purpose of growing their own income and asset base. The primary purpose of SAMAF is to reduce poverty and unemployment among the youth. It places a special emphasis on rural youth. The agency provides finance to financial intermediaries such as Financial Services Cooperatives (FSCs) and MFIs who in turn on-lend to their members and clients. Therefore, anyone who wants to obtain a SAMAF-backed loan should first join an FSC or apply to the MFI for a loan. SAMAF offers two types of loans via its financial intermediaries, microenterprise loans and development loans.

The National Youth Development Agency (NYDA) was established in 2009 in order to help the youth to start and run businesses. The NYDA funds training and gives out loans. The Agency disbursed 7, 500 micro loans to value of R23 million and a further R4 million in loans in the 2009/10 financial year. The Micro-Agricultural Financial Institute of South Africa (MAFISA) was established to contribute to the working poor's ability to run existing agricultural businesses; to start new ones and be able to develop these into fully commercial operations. MAFISA propels and facilitates the development of financial services intended to uplift very small and micro level farmers, farm workers, farm tenants, small holders, landless emerging farmers and processes, etc (Edoho, 2015).

Studies conducted by Ladzani and Netswera (2009), Seeletse (2012), Marivate (2014), Brownson (2014), Henrekson (2014), Shree and Urban (2012), Booyens (2011), Bezuidenhout and Nenungwi (2012), Asah, Fatoki and Rungani (2012), Edoho (2015) and Worku (2014) have shown that the key obstacles for sustained growth and development in newly established SMMEs in South Africa are lack of entrepreneurial skills, lack of access to finance, poor vocational skills, cumbersome bureaucratic problems and lack of adherence to the fundamental principles of good governance in the management and administration of newly established SMMEs. Khale (2015) has found that newly established SMMEs in Gauteng Province are adversely affected as a result of poor municipal services. The annual report issued by the South African Small Enterprises Development Agency (SEDA, 2014) has also pointed out that newly established SMMEs fail due to lack of adequate municipal services. According to SEDA (2014), small, micro and medium-sized enterprises (SMMEs) are defined as enterprises that employ less than or equal to 250 employees. SMMEs are also defined as an enterprise with a maximum asset base of about 10 million Rand excluding land and working capital in which between 10 and 300 employees work. Marivate (2014) defines an SMME as an enterprise that has an asset of between 2, 500 and 20 million Rand excluding the cost of land and working capital. There are various business structures that are suitable for small businesses.

Studies conducted in the City of Tshwane by Khale (2015) and Marivate (2014) have shown that the quality of municipal services that are being provided to start-up businesses operating in Tshwane are of poor quality, and that sustained viability in SMMEs was being undermined as a result of this. A similar finding has been reported by the South African Chamber of Commerce and Industry (2013), the South African National Department of Trade and Industry (2013), the South African Small Enterprise Development Agency (2013) and Ladzani and Netswera (2009). The study was prompted by the need to improve the plight of struggling start-up businesses in the various parts of Tshwane by improving the quality of municipal services that are needed routinely by SMMEs operating in the various geographical parts of Tshwane, South Africa.

According to the South African Chamber of Commerce and Industry (2015), more than 30% of the total gross domestic product of South Africa is attributed to SMMEs. About 20% of all units exported by South Africa are produced by small and medium-sized enterprises. The study was conducted with a view to quantify the strength of association between the perception of over-regulation among operators of SMMEs and failure in start-up enterprises. Based on the contribution made by SMMEs to the national economy, SMMEs deserve to be provided with highly efficient municipal services that are free from red tape, over-regulation and cumbersome bureaucracy.

## **5. METHODS AND MATERIALS OF STUDY**

The design of study was longitudinal (2012 to 2014). Data was gathered (Khale, 2015) from a random sample of 1058 small, micro and medium-sized businesses conducting business in and around the City of Tshwane. Monthly data was gathered on a large number of socio-economic variables that affect the long-term survival of businesses. Data were gathered on the perception held by owners and operators of SMMEs on the quality of routine municipal services that were provided to SMMEs by municipal officials and employees, over-regulation and cumbersome bureaucracy. Additional data was collected from the businesses selected for the study on several socioeconomic variables that are known to affect viability in SMMEs. Examples of such variables are the duration of operation, amount of startup capital, level of education of business operators, level of skills of business operators, suitability of business premises, level of support provided by the South African Department of Trade and Industry to small businesses, source of finance, amount of loan borrowed by business operators, profit made, total revenue, operational cost, access to training opportunities on business operations, supervisory assistance, tax amount, method used for tax assessment, access to supplies needed by businesses, demand for goods and services in the local market, perception on level of assistance provided by the government, etc. Data collection was made by the City of Tshwane Metropolitan Municipality (Khale, 2015).

Statistical data analyses were performed by using Pearson's chi-square tests of association (Hair, Black, Babin and Anderson, 2010), panel data analysis (Cleves, Gould & Gutierrez, 2004) and Markov Chain Monte Carlo (MCMC) algorithms

(Browne & Goldstein, 2010: 453-473). Makov Chain Monte Carlo (MCMC) algorithms (Browne and Goldstein, 2010: 453-473) were used for performing bootstrapping simulations. MCMC algorithms are used for solving multilevel problems that involve the construction of constrained variance matrices in cases where linear estimation techniques fail to produce theoretically reliable estimates of parameters. The statistical package STATA was used for data entry and analyses.

## 6. RESULTS OF STUDY

Table 1 shows the general characteristics of two groups of businesses (viable and non-viable businesses). The table provides frequency proportions for 6 key predictors of viability in small businesses.

The results showed that there was a statistically significant association between sustained viability in small businesses and positive perception on the quality of routine municipal services delivered to small businesses. The results showed that there was a significant association between the perception of over-regulation and failure in small enterprises. Seventy four percent of businesses that failed were operated by individuals who had the perception of over-regulation and too much bureaucracy. The results showed that 89% of viable businesses had a positive perception on the degree of over-regulation, whereas only 26% of non-viable businesses had a positive perception on the degree of over-regulation. The results also showed that 87% of viable businesses were satisfied with the quality of routine municipal services that were provided to them by the City of Tshwane, whereas only 14% of non-viable businesses were satisfied with the quality of municipal services provided to them. The corresponding figure for non-viable businesses was only 14%. It can be seen from Table 1 that 631 of the 1058 businesses that took part in the study (59.64%) were viable whereas 427 of them (40.36%) were not viable. The table shows that the perception held by owners and operators of viable businesses were relatively more positive in comparison with the perceptions held by the owners and operators of non-viable businesses with regards to capacity, policy, the suitability of training programmes provided to newly established businesses, the ease of securing loans, entrepreneurial skills and past history of bankruptcy. Viable businesses were operated by owners and managers with relatively higher levels of entrepreneurial skills. Non-viable businesses were characterized by inability to secure loan needed for business operation (65%) and past history of bankruptcy (54%). The corresponding figures for viable businesses were only 27% and 13% respectively.

Table 2 shows adjusted hazard ratios estimated from panel data analysis in which the Cox Proportional Hazards Model was used.

It can be seen from Table 2 that failure in small businesses was significantly influenced by 3 predictor variables. These 3 influential predictor variables were: negative perception on the quality of municipal services provided to newly established businesses [Hazard Ratio = 3.58; P=0.000; 95% C. I. = (1.45, 5.46)], inappropriate policy [Hazard Ratio =

3.19; P=0.000; 95% C. I. = (1.39, 5.28)], and lack of tailor made training programmes directed at newly established small businesses [Hazard Ratio = 2.89; P=0.000; 95% C. I. = (1.24, 4.77)], in a decreasing order of strength.

**Table 1.** Group proportions with regards to the financial viability of small businesses

Predictor variable	Viable (n=631)	Not viable (n=427)
Perception of over-regulation of start-up SMMES	Positive: 89% Negative: 11%	Positive: 26% Negative: 74%
Perception on the quality of municipal services provided to newly established SMMES	Positive: 87% Negative: 13%	Positive: 14% Negative: 86%
Capacity for fulfilling the business and entrepreneurial needs of newly established SMMES	Adequate: 71% Inadequate: 29%	Adequate: 28% Inadequate: 72%
Policy used for supporting newly established small businesses	Adequate: 56% Inadequate: 44%	Adequate: 31% Inadequate: 69%
Presence of tailor-made training programmes for owners and operators of SMMES	Adequate: 69% Inadequate: 31%	Adequate: 34% Inadequate: 66%
Ability to secure loan needed for business operation	Easy: 73% Difficult: 27%	Easy: 35% Difficult: 65%
Level of entrepreneurial skills of business owners and operators	Adequate: 74% Inadequate: 36%	Adequate: 33% Inadequate: 65%
Past history of bankruptcy	Yes: 13% No: 87%	Yes: 54% No: 46%

**Table 2.** Adjusted hazard ratios estimated from panel data analysis

Variable	*Adjusted Hazard Ratio	P-value	95% C.I.
Negative perception on the quality of municipal services	3.58	0.000	(1.45, 5.46)
Inappropriate policy	3.19	0.000	(1.39, 5.28)
Lack of tailor made training programmes	2.89	0.000	(1.24, 4.77)

Note: \*Adjustment was done for geographical location, age of owner and gender

The percentage of overall correct classification for the fitted logistic regression model was equal to 88.53%. The P-value for the Hosmer-Lemeshow goodness-of-fit test was equal to 0.1109 > 0.05, thereby indicating that the fitted logistic regression model was theoretically reliable.

Estimates obtained from panel data analysis were adjusted for potential confounding variables such as geographical location, age of business owner and gender. Controlling for potential confounding variables is helpful for improving the degree of reliability of parameter estimates.

The adjusted hazard ratio of the variable "Negative perception on the quality of municipal services" is 3.58. This shows that businesses that were owned or operated by people with a negative perception on the quality of municipal services provided to newly established businesses were 3.58 times as likely to fail in comparison with businesses

that were owned or operated by people with a positive perception on the quality of municipal services provided to newly established businesses. The adjusted hazard ratio of the variable "inappropriate policy" is 3.19. This shows that businesses that were owned or operated by people with the perception that the City of Tshwane was implementing inappropriate policy on the growth and development of newly established SMMEs were 3.19 times as likely to fail in comparison with businesses that were owned or operated by people with the perception that the City of Tshwane was implementing an appropriate policy on the growth and development of newly established SMMEs. The adjusted hazard ratio of the variable "lack of tailor made training programmes" is 2.89. This shows that businesses that were owned or operated by people with the perception that the City of Tshwane did not have a tailor made training programme for newly established SMMEs were 2.89 times as likely to fail in

comparison with businesses that were owned or operated by people with the perception that the City of Tshwane has a tailor made training programme for newly established SMMEs".

### 6.1. Results obtained from Makov Chain Monte Carlo (MCMC) algorithms

Makov Chain Monte Carlo (MCMC) algorithms (Browne and Goldstein, 2010: 453-473) were used for performing bootstrapping simulations. MCMC algorithms are used for solving multilevel problems that involve the construction of constrained variance matrices in cases where linear estimation techniques fail to produce theoretically reliable estimates of parameters. MCMC algorithms are used extensively as part of Bayesian analysis. Table 3 shows adjusted regression coefficients estimated from MCMC algorithms.

**Table 3.** Adjusted linear regression coefficients estimated from MCMC algorithm

<i>Predictor variable</i>	<i>*Adjusted linear regression coefficient</i>	<i>95% Confidence Interval</i>	<i>P-value</i>
Negative perception on the quality of municipal services	1.29	(0.79, 3.41)	0.000
Inappropriate policy	1.18	(0.76, 3.39)	0.000
Lack of access to tailor made training programmes	1.08	(0.64, 3.27)	0.000

*Note: \*Adjustment was done for geographical location, age of owner and gender*

At the 5% level of significance, influential predictor variables of satisfactory performance are characterized by estimated regression coefficients that differ from 0 significantly, P-values that are smaller than 0.05, and 95% confidence intervals that do not contain the number 0.

Estimates obtained from Bayesian analysis were adjusted for potential confounding variables such as geographical location, age of business owner and gender. Controlling for potential confounding variables is helpful for improving the degree of reliability of parameter estimates. The estimates obtained by using MCMC algorithms and Bayesian analysis were fairly similar to estimates obtained from panel data analysis.

## 7. DISCUSSION OF RESULTS

The study has shown that was a significant statistical association between the perception of over-regulation and failure in small enterprises. The results showed that 74% of businesses that failed were operated by individuals who had the perception of over-regulation and too much bureaucracy. The corresponding figure for viable businesses was only 11%. The results showed that 87% of viable businesses were satisfied with the quality of routine municipal services that were provided to them by the City of Tshwane. The corresponding figure for non-viable businesses was only 14%. The study found that nearly 60% of the 1058 business owners and operators that were selected for the study were viable whereas the remaining 40% of businesses were not viable. Viable businesses were run by owners and operators who felt that the quality of municipal services provided to newly established SMMEs was generally satisfactory, whereas non-viable SMMEs were run by

owners and operators who felt that the quality of municipal services provided to newly established SMMEs was not satisfactory. In general, the perception held by owners and operators of viable businesses were relatively more positive in comparison with the perceptions held by the owners and operators of non-viable businesses with regards to the quality of municipal service delivery, capacity, policy, the suitability of training programmes provided to newly established businesses, the ease of securing loans, entrepreneurial skills and past history of bankruptcy. Viable businesses were operated by owners and managers with relatively higher levels of entrepreneurial skills. Non-viable businesses were characterized by inability to secure loan needed for business operation (65%) and past history of bankruptcy (54%). The corresponding figures for viable businesses were only 27% and 13% respectively.

Results obtained from Pearson's chi-square tests of associations ( $P < 0.05$ ) showed that businesses fail due to lack of initial capital, failure to utilize finance in accordance with business plan, high labour cost, shortage of entrepreneurial skills that are needed for operating business, adverse market conditions, difficulty in securing loans needed for business, inability to pay fees that are required for renting business premises, inability to draw up business plans, inability to do bookkeeping, the practice of selling on credit, the status of business being operated, and lack of training opportunities that are relevant to the business being operated. Businesses that failed were characterized by loss of money, inability to draw up business plans, inability to do book-keeping, inability to acquire technical and vocational skills due to shortage of finance.

Results obtained from panel data analysis and Bayesian analyses showed that failure in newly established small businesses was significantly influenced by 3 predictor variables. These 3 influential predictor variables were: negative perception on the quality of municipal services provided to newly established businesses [Hazard Ratio = 3.58; P=0.000; 95% C. I. = (1.45, 5.46)], inappropriate policy [Hazard Ratio = 3.19; P=0.000; 95% C. I. = (1.39, 5.28)], and lack of tailor made training programmes directed at newly established small businesses [Hazard Ratio = 2.89; P=0.000; 95% C. I. = (1.24, 4.77)], in a decreasing order of strength.

The key findings of this study are in agreement with results reported by Ladzani and Netswera (2009), Seeletse (2012), Marivate (2014), Brownson (2014), Henrekson (2014), Shree and Urban (2012), Booyens (2011), Bezuidenhout and Nenungwi (2012), Asah, Fatoki and Rungani (2012), Worku (2014) and Edoho (2015). The study conducted by Marivate (2014) shows that the South African educational curriculum does not prepare potential entrepreneurs adequately for the task of operating newly established businesses. The content of the curriculum for vocational training at the high school and undergraduate level is vastly inadequate and irrelevant to the specific needs of young graduates who aspire to thrive in business. This failure constitutes a major obstacle to the growth and development in small and medium-sized businesses and enterprises in South Africa.

## 8. RECOMMENDATIONS

Based on findings obtained from the study, the following recommendations are made to the City of Tshwane, the South African National Department of Trade and Industry, the South African National Department of Higher Education and Training, and the South African Chamber of Commerce and Industry with a view to improve viability in small and medium-sized enterprises operating in the Pretoria region of Gauteng Province. The recommendations have the potential for improving the plight of struggling SMMEs in the City of Tshwane.

- It is strategically vital for the City of Tshwane to improve the quality of routine municipal services that are provided to owners and operators of start-up enterprises. Cumbersome bureaucratic procedures that are related to license applications should be simplified as a means of minimising the burden on SMMEs.
- The City of Tshwane must develop tailor made customer service programmes that are aimed at providing efficient municipal services to newly established SMMEs that operate in the various parts of the City of Tshwane;
- The South African National Department of Trade and Industry must develop and implement tailor-made skills based training programmes on vocational and entrepreneurial activities for owners and operators of newly established SMMEs;
- It is necessary to provide mentorship and supervisory assistance to newly established SMMEs for a period of at least three years or more;
- It is vital to encourage academic and research institutions to create academic programmes in which trainees can acquire experiential training by

working for businesses and industries as part of their academic training in South African institutions of higher learning. Such programmes should be jointly coordinated and funded by the South African Department of Higher Education and Training, the South African Department of Trade and Industry, and the South African Chamber of Commerce. Doing so has the potential for producing graduates who possess skills that are relevant to the actual needs of business, industry and government;

- It is necessary to monitor and evaluate the viability of newly established small businesses on a monthly basis. This task falls under the ambit of the South African Department of Trade and Industry. Such an intervention has the potential for minimizing the rate at which newly established small businesses fail in and around the City of Tshwane.

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