**RISK GOVERNANCE & CONTROL:
FINANCIAL MARKETS & INSTITUTIONS**

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Journal *Risk governance & control: financial markets & institutions* is published four times a year, in September-November, December-February, March-May and June-August, by Publishing House "Virtus Interpress", Gagarina Str. 9, office 311, Sumy, 40000, Ukraine.

Information for subscribers: New orders requests should be addressed to the Editor by e-mail. See the section "Subscription details".

Back issues: Single issues are available from the Editor. Details, including prices, are available upon request.

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*Risk governance & control:
financial markets & institutions*

ISSN 2077-429X (printed version)
2077-4303 (online version)

RISK GOVERNANCE & CONTROL: Financial markets and institutions

VOLUME 5, ISSUE 3, 2015, CONTINUED - 2

CONTENTS

CORPORATE FINANCING STRATEGIES EMPLOYED BY ZIMBABWEAN LISTED FIRMS IN THE MULTIPLE CURRENCY ERA

Farai Kwenda*

Abstract

The aim of this study is to review the corporate financing strategies employed by Zimbabwean listed firms since the adoption of the multiple currency system which set the country on a recovery path after the decade-long political, social and economic crises. The adoption of the multiple currency system necessitated recapitalization and retooling because most firms' balance sheets were wiped away during the hyperinflation era. The study is based on secondary data of 80 firms listed on the Zimbabwe Stock Exchange. The study found that rights issues and high retention ratios were the main strategies used by firms to recapitalize their operations. The recapitalization efforts have been by liquidity challenges that have characterised the multiple currency era.

Keywords: Financial Strategy, Rights Issue, Dividends, Multiple Currency, Liquidity

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1 Introduction

The growth and survival of any business in today's highly competitive and globalized business environment and volatile financial markets largely depends on the use of right strategies in particular sound financial strategies. Financial strategies are defined as choices companies make in raising and deploying capital and distributing earnings. Sound financial strategies enable firms to raise funds at the lowest possible cost, deploy those funds in a manner that optimizes those resources and achieve the shareholder wealth creation goal. Financial strategies are individual firms' preference which, however, determine the firm's financial success and are influenced several internal and external factors. These factors are pronounced in uncertain economic conditions which contemporary literature asserts to be driven by globalization, financialisation and internationalisation, among other factors.

It is against this background that this study seeks to explore the financial strategies in a unique environment; listed firms in Zimbabwe after the adoption of the multiple currency system. In February 2009, Zimbabwe ditched its defenseless currency and adopted the multiple-currency system (hereinafter dollarization[1]) after a decade long political, social and economic crises which almost brought the whole country to its knees. The dollarization of the economy helped the country to achieve some stability but it has also brought a number of serious challenges; chief among them severe liquidity challenges (Ministry of Finance, 2010, Confederation of Zimbabwe Industries 2011).

After the adoption of the multiple currency system, the corporate sector had to recapitalize in order to finance capital expenditures and day-to-day operations in the newly adopted currencies. The recapitalization exercises have been hampered by serious liquidity challenges bedeviling the Zimbabwean economy in the multiple currency era. The liquidity challenges are attributable to the general lack of confidence in the economy and the financial sector and sanctions (Reserve Bank of Zimbabwe, 2010). The enactment of the Indigenization Economic Empowerment Act 14 of 2007 in January 2010 has also been blamed for compounding the liquidity situation. The Act limits foreign ownership in Zimbabwean firms to 49% and requires foreign-owned firms with existing operations to cede 51% of their shareholding to local investors. The ownership structure required by the Act has caused foreign investors to shun Zimbabwe as an investment destination. The financial market facilitates the raising of funds by the private and the public sector. Zimbabwe's current financial market is not performing its role of facilitating the raising of funds because the decade long crises regressed Zimbabwe's financial sector development and left it shallow and under-developed. Zimbabwe's financial sector had made some positive strides in the post-independence era, in particular the liberalization of the financial sector in the early 199s (Kwenda, 2014). According to Chinamo (2013) there are a number of challenges facing the Zimbabwe Stock Exchange (ZSE) and firms

[1]. The terms multiple currency and dollarization will be used interchangeably.

listed on the ZSE. These challenges include among others; 'unjustifiably' low market capitalisations, minimal corporate actions and no new listings, increasing number of de-listings, small stocks struggling to meet continuing obligations, activity on the market limited to a few stocks, contending with odd share prices such as US0.01c and the lost financial history[2].

This study therefore, seeks to review the corporate financial strategies employed by listed firms industry in Zimbabwe to recapitalise their operations in an environment characterized by acute liquidity challenges. The rest of the paper is organised as follows; Section 2 briefly reviews the literature on corporate financial strategies. Data sources and the sample are described in Section 3. Section 4 presents and analyses the principal findings of the study. Section 5 concludes.

2 Literature review

Financial strategy basically involves the raising of funds needed by the business and deployment of funds and distribution or reinvestment profits generated (Bender and Ward, 2013, Mallette, 2006). The raising of funds involves decision such as the appropriate mix of debt and equity in line with the company's desired capital structure. The deployment of capital involves decision about the investment projects to undertake, investment in fixed and current assets. The distribution decision relates to the firm's choice of either paying any profits generated by the business to its shareholders or reinvesting them in the business. The financial strategy of a company should be changed over the life cycle to ensure survival and growth of the company. Mallette (2006) laments that while key components of operations are frequently scrutinized and updated many organisations do not have overarching framework for systematically assessing their financial strategy to ensure it is internally consistent and aligned with the operations of the company. Frequent evaluations and adjustment are necessary because of the rapid changes that take place in the firm's operating environment in today's fast moving and globalized world.

Mhlanga and Sibanda (2013) contend that firms need appropriate financial strategies during different stages of their life cycle for them to achieve their primary objective of creating and maximizing shareholder value. The firm's net asset requirement grows over time; therefore in order for the firm to grow and survive it must have enough financial resources to support its growth in asset requirements (Bender and Ward, 2013, Firer et al., 2012). Firms have a number of financial strategies mainly debt and equity at their disposal which can enhance their survival and growth.

In selecting a financial strategy, a company makes its choice on selecting whether to raise or deploy its finances, and these are supported by four strategic decisions which need to be made by the company's directors. These four strategic decisions are; how large should the asset base be, how much of the finances should be debt, and how much should be in equity, how much profit should be paid out in dividend, and how much should be retained, and should new equity be issued? (Bender and Ward, 2013). Appropriate financial strategies encompasses transactions such as raising seed-capital, start-up capital, flotation on a stock exchange, managing for corporate control and dividend payout policies. For a firm to survive any operating environment, it needs to formulate appropriate strategies to beat competition in the sector in which it operates. We briefly discuss some of the financial strategies that can be employed by firms throughout its life.

2.1 Initial Public Offerings (IPOs)

An IPO is the first sale of shares to the public by a company on a stock exchange. Generally IPOs are underwritten by an investment bank or an underwriting syndicate (Firer et al., 2012). Underwriters undertake to take up any shares that remain unsold, thus giving the issuing firm the assurance that all shares will be bought and the desired funds will be raised. IPOs are used as a way of getting to list on a stock exchange. According to Bender and Ward (2002) a company might seek a listing for either "cash in" or "cash out" reasons. Cash in float is one that is done for raising funds for the company's continued expansion and usually done by growth companies, which issue shares for the funds they need (Mhlanga and Sibanda, 2013). On the other hand cash out float's main purpose of listing is to allow exit for some existing shareholders. Firms in the growth phase of their life cycle usually want to either cash in to finance expansion programmes or cash out to provide exit for start-up investors (Bender and Ward, 2002). The primary purpose for listing on a stock is to raise cheap money through either IPOs on listing or rights issues for those already on the bourse according to The Financial Gazette (2015). Once listed, firms are required to adhere to certain rigorous reporting and accounting standards, and maintain certain minimum internal and external audit and disclosure benchmarks. Other stringent measures include maintaining register of investors, adhering to acceptable corporate governance guidelines, have specialist external financial and legal advisors and adhere to certain board standards. Failure to comply with such requirements will result in a suspension of the non-complying firm from the exchange.

2.2 Rights issues

A rights issue is a method of raising additional capital by issuing more shares to existing shareholders in

[2] 2009 is the new starting point.

proportion to their existing shareholding[3]. A rights offer gives the firm's existing shareholders the right of first refusal that is the existing shareholders will be given an option to exercise their right of buying shares. These new shares would be issued at a discount; hence existing shareholders' proportion of shareholding will not to be diluted by the new issuing of shares. A rights issue can also be used to finance a company in the growth stage of the firm's life cycle (Bender and Ward, 2013).

2.3 The distribution decision

Dividends are payments made out of a firm's earnings to its owners, either in the form of cash or shares (Firer et al., 2012). Cash dividends represent a source of cash flow to shareholders and provide information about the firm's current and future performance (Gitman et al., 2010). The payment of cash dividends is constrained by factors such as the ability to afford cash outflow from the company, the financial performance, the future outlook and recent dividends paid. Zimbabwean firms have been operating in an environment characterized by severe liquidity challenges, low profitability and limited access to credit. Given the difficult operating conditions in the country, it is worth investigating the trends in dividend payments by firms as a corporate financial strategy. Firms experiencing rapid growth usually do not pay dividends because they need funds to further finance their growth. On the contrary, mature firms can afford high dividend payout ratios because they generally have limited investment opportunities to undertake and therefore can afford to pay out most of their earnings as dividends. Firms with difficulties in accessing external funds may opt to retain most of their earnings than pay dividends even if they report good earnings.

Other financial strategies that can be employed by firms include private placements, mergers and acquisitions and convertible loans. A private placement involves the sale of new security (typically bonds and preferred shares) directly to an investor or a group of investors (Gitman et al., 2010, Damodaran, 2011). A merger is formed when two companies combine and usually a new company is formed while in an acquisition, one firm (the offeree) is acquired by another (the offeror) either directly by a purchase of assets or indirectly by obtaining control of management or by acquiring shares (Firer et al., 2012). Convertible loans or debentures can be swapped for shares at a prior agreed rate and time (Gitman et al., 2010, Marx et al., 2011).

This section reviewed literature on corporate financial strategies such as initial public offerings, rights issues and dividend policies. The next section will present the data sources.

3 Data sources

Since this study reviews corporate financial strategies of listed firms in Zimbabwe since the adoption of the multi-currency era, it is based on historic data from 2009 to 2014. Data was collected from company annual reports and financial statements for the accounting period 2009 to 2014 from the INET BFA online database, the Zimbabwe Stock Exchange, corporate announcements, company websites and press releases. We use descriptive statistics guided by an analytic approach to ascertain corporate financial strategies used by the listed firms in Zimbabwe.

4 Discussion of results

In this section we review the corporate strategies used by Zimbabwean listed firms which were divided into fund raising activities, distribution of profits and other survival strategies employed by these firms.

4.1 IPOs, new listings and delistings

Table 1 Column 1shows that there were two new listings on ZSE in 2011 and 2012. However, none of these two listings were IPOs. The 2011 new listing was an unbundling by a listed firm which listed through a dividend in specie. The 2012 new listing was result of a poorly subscribed rights issue which resulted in the investment bankers (the underwriters) taking up the unsubscribed shares and this resulted in the underwriters with a significant shareholding in their client which triggered a takeover. The lack of IPOs validates the lack of liquidity that has characterised the multi-currency era. The lack of liquidity in the Zimbabwean economy means that it difficult for firms with ambitions to use listing as a means of raising funds on the ZSE.

Column 2 of Table 1 shows that a total 16 firms were delisted from the ZSE over the period under review. The delistings were distributed as follows; 5 firms delisted after being placed judicial management, 5 firms delisted after buyouts 5 firms delisted as a result liquidation or being placed curatorship[4] and 1 firm delisted after merging with another listed firm. The liquidity crunch in Zimbabwe has made it impossible for firms to realise the benefits of listing; (raising cheap money through either IPOs on listing or rights issues). According to The Financial Gazette (2015) the companies that successfully managed to raise funds did so by raising those funds from offshore investors and this has necessitated delisting from the ZSE because existing shareholders were left with inconsequential shareholding proportions. The massive dilutions suffered by listed firms in raising new equity funds are blamed on low valuations (Chinamo, 2013, The Financial Gazette, 2015). Some of the firms delisted in order to raise funds using Net Asset Valuation instead of stock market valuation because of depressed stock prices.

[3]BREALEY, R. A. & MYERS, S. C. 2003. *Financing and risk management*, McGraw Hill Professional. call them privileged subscriptions or rights issues

[4]Of these 5 firms, 3 were banks that delisted after being placed curatorship/ liquidation and 2 were non-financial services firms that were liquidated.

Table 1. Corporate financing activities by Zimbabwean listed firms

Year	*New listings*	*De-listings*	*Judicial management*	*Curatorship/ liquidation*	*Private placements ($ m)*	*Rights issues ($ m)*
2009	0	2	1	0	6.62	23.89
2010	0	0	0	0	4.6	64.08
2011	1	0	0	0	10.3	0
2012	1	0	0	0	40	108.09
2013	0	12	4	4	10	53.34
2014	0	2	0	1	16.2	40
Total	2	16	5	5	87.72	289.40

Source: Own calculations based on press releases company annual reports and the ZSE

4.2 Rights issues

$290 million was raised through rights issues on the ZSE over the six year period under review. Table 1 shows the trend of rights issues by ZSE-listed firms between 2009 and 2014. $24 million and $64milliion were raised in 2009 and 2010 respectively through rights issues. There were no rights issues in 2011. The table shows that rights issues peaked up at $108 million in 2012, then declined to at $53 million in 2013 and further declined to $40 million in 2014. These rights issues had varying degrees of subscription success ranging from 2% to 95%, with a majority of them failing to attract significant support. The declining trend is attributable to the tightening liquidity situation and sluggish foreign investment. Some of the reasons given for raising funds through rights issues included raising funds for capital expenditure and working capital, recapitalization and retiring expensive short term debt. Financial sector firms used rights issues to raise funds to meet the high minimum capital requirements[5] set by the Reserve Bank of Zimbabwe (RBZ). The indigenization and economic empowerment laws explain raising equity capital from foreign shareholders was not tenable because the depressed low share prices resulted in new foreign shareholders exceeding the 51% foreign ownership threshold set by the Indigenization Economic Empowerment Act. The depressed prices on the ZSE had two negative effects on firms raising additional funds through rights issues; small amounts of capital raised through rights issues and massive ownership dilution (The Financial Gazette, 2015).

4.3 Private placements

Table 1 shows the trend of funds raised through private placements by ZSE-listed firms between 2009 and 2014. Private placements did not follow a defined pattern over the six year period under review. Table 1 shows that $7million was raised through private placements in 2009. This figure declined to $5million in 2010 before doubling in $10million in 2011. The private placements figure peaked up at $40 million in 2012, then declined to $10million in 2013 before rising to $16 million in 2014. Like right issues, the trend exhibited by private placements is also attributable to the tightening liquidity situation and sluggish foreign investment.

4.4 Dividend policies

Of the 80 listed firms between 2009 and 2014, only twenty three firms paid cash dividends. Figure 1 shows cash dividends paying firms and losing making firms. Four firms paid dividends once, five firms paid dividends twice, four firms paid dividends three times and six firms paid dividends four times. Only one firm managed to pay dividends each of the six years under review. The average payout ratio over the six year period was 32% suggesting that most firms employed a residual dividend policy. Low dividend payout policies from 2009 to 2014 are in line with severe liquidity challenges that reached unprecedented levels during this period. Firms retained earnings in order to preserve cash and recapitalize the operations, to finance existing operations and to exploit acquisition opportunities in the industries.

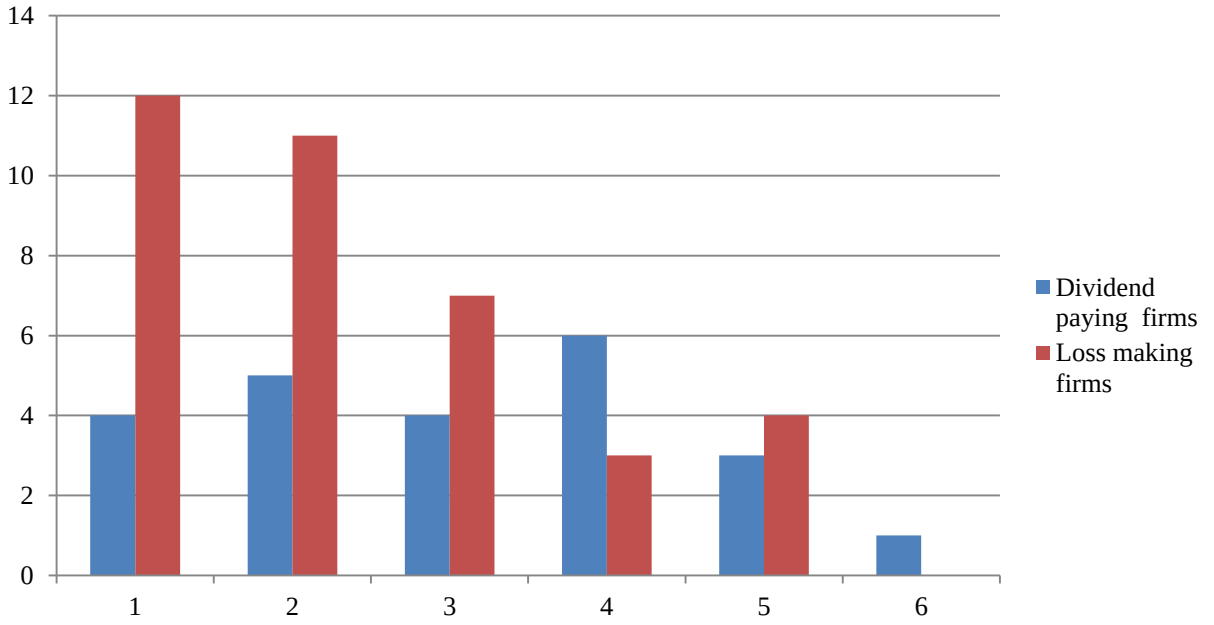
The results of the analysis suggest that firms do not pay dividends over the study period mainly as a survival strategy. Retained earnings are playing a critical role in the recapitalization of Zimbabwean firms. This validates the statement that are a form of internal financing and significantly affects the firm's external financing requirements (Gitman et al., 2010).

A review of company annual reports found the most common reasons cited for not paying dividends were as follows; loss making positions or accumulated losses, low profitability, the need to preserve cash for reinvestment, debt reduction, recapitalization and the need for turnaround, to preserve cash for working capital and to address working capital challenges. 12 firms recorded posted losses once during the six year period under review. 11 firms record losses in two periods. 7 firms and 3 firms reported losses in three and four years respectively of the six years under review. 4 firms consistently made losses over the

[5] The RBZ announced that commercial and merchants banks were now required to have minimum capital requirements of US$100 million from US$12.5 million and US$10 million respectively. Banks are supposed to be fully compliant with these capital requirements by the end of year 2020. RESERVE BANK OF ZIMBABWE, R. 2012. Monetary Policy Statement. . Harare: Reserve Bank of Zimbabwe..

study period. The high number of loss making firms over the period under review is attributable to the difficult operating environment prevailing in Zimbabwe which has resulted in many company closures (Confederation of Zimbabwe Industries 2014, Mangudhla and Mambo, 2013). It is not surprising that the number of dividend paying firms over the six year period under review is low.

Figure 1. ZS-listed dividend paying firms and loss making firms 2009-2014



Source: Author's construction based on financial reports obtained from INET BFA online database and company annual reports

4.5 Mergers and acquisitions

During the period under review 42 mergers and acquisitions[6] were witnessed. Different types of M&As concluded are as follows, two horizontal involving two listed firms, five foreign firms acquiring listed firms, and listed firms acquiring unlisted firms. For the banking sector mergers were motivated by the need to meet the high capital requirements imposed by the Reserve Bank of Zimbabwe to avoid future bank failures. In the financial sector, in 2012 a commercial bank merged with a building society with the main motive of meeting the capital requirements set by the Reserve Bank of Zimbabwe. Two reverse takeovers were witnessed, one in the financial sector and another in the furniture industry. The mergers and acquisitions wave did not sweep as would have been anticipated as Zimbabwean companies are struggling to recapitalize. In addition one would have anticipated foreign firms to target more Zimbabwean firms because the low share prices make ZSE-listed firms real bargains. The low M&As activity has been partly blamed on the country's indigenization law which compels foreigners to limit their shareholding in domestic companies to 49% (Nleya, 2013).

5 Impact of corporate strategies on capital structure

Financial strategies employed by firms impact their capital structures. Trend analysis was employed to examine how the corporate financial employed by these firms affected their capital structures[7]. Table 2 below shows the trends and composition of capital employed by Zimbabwean listed firms over the six year period under review. The results in Table 2 reveal that equity to total assets (ETTA) trended downwards from 55% in 2009 to 42% 2014 while the total debt to total assets; TDTA (which is debt ratio) trended upwards from 28% in 2009 to 47% 2014. ETTA measures the extent to which equity financed total assets and is an inverse of the Equity Multiplier[8]. We disaggregate TDTA into long term debt to total assets (LTDTA) and current liabilities to total assets (CLTA) in an attempt to understand the structure of debt financing of total assets. LTDTA trended upwards from 1% in 2009 to 8% in 2014, indicating that long term finance increased in financing assets but remained low.

[6] This number includes deals involving listed and unlisted firms.

[7] For this section, financial services firms were excluded because their capital structures are highly levered and different from non-financial sector firms.

[8] The equity multiplier measures the extent to which total exceed to total equity and is calculated as total assets divided by total equity

Table 2. ZSE-listed capital structure and financing pattern for the period 2009-2014

Year	*ETTA (%)*	*TDTA (%)*	*LTDTA (%)*	*CLTA (%)*	*TCTA (%)*	*STBTA (%)*
2009	54.70	28.36	1.27	27.09	18.98	7.49
2010	49.32	34.57	1.40	33.17	21.13	11.31
2011	47.68	41.58	3.69	37.89	22.13	15.15
2012	47.15	42.92	5.55	37.37	22.04	14.65
2013	43.00	46.65	6.21	40.42	21.51	15.71
2014	41.95	46.63	8.14	38.48	23.65	13.73
Overall	47.21	40.29	4.37	35.92	21.60	13.17

Source: Authors' calculations using an unbalanced panel over the period 2009 to 2014. Data obtained from the INET BFA online database

The low LTDTA (below 10% over the six year period) attest to the difficulties Zimbabwean firms in accessing long term funds and banks not lending long. The average CLTA is almost nine times higher than LTDTA which further supports the lack of access to long term finance. CLTA represents short-term finance mainly made up of Trade credit to total assets (TCTA) and short-term borrowings debt to total assets (STBTA). TCTA consistently exceeded STBTA over the six year period. While this finding is not surprising as such results have been obtained in developed market) in Zimbabwe's multiple currency era this is attributable to limited bank credit availability.

6 Conclusion

The aim of the study was to review the corporate financing strategies employed by listed firms in Zimbabwe since the adoption of the multiple currency era in 2009. The study found that rights issues, private placements and convertible loans were the main strategies employed by ZSE-listed firms. These firms paid out low dividends in an attempt to recapitalise themselves. The trend analysis of the capital structure of these firms showed a declining trend of the contributing of equity in financing total assets and a simultaneous increase in the proportion debt in financing total assets. The financing strategies employed by the listed firms were affected by the tightening liquidity conditions caused by lack of confidence in the country and the economy and laws that scare away investors. Commercial banks employed financial strategies mainly geared towards meeting the minimum capital requirements set by the RBZ.

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REFORMING THE HEALTH SECTOR IN SOUTH AFRICA – POST 1994

Melody Brauns*, Anne Stanton*

Abstract

This article reviews the efforts of the South African government in recognising development challenges of the post-apartheid era and assesses the approaches employed to bring about economic growth and to address inherited inequalities.

Keywords: Reform, Democracy, Governance, Inequality

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1 Introduction

The legacy of South Africa's socio-economic inequalities has encountered major challenges of attempting to advocate good governance, democratisation, and sustainable human development against a backdrop of gross domestic socio-economic disparities and a history of past conflict. According to Mhone and Edigheji (2003: 5) South Africa is a country that has emerged from one of the most oppressive and exploitative regimes in modern history in which racial, class and gender oppression were consciously intertwined to underpin a system of domination that kept the majority of the African population in relative poverty and destitution, while it empowered the White minority economically, socially and politically. Thus, the previous system was undemocratic, reflecting what is commonly termed bad governance. This system was challenged resulting in its collapse and the emergence of a new dispensation based on democratic and development precepts.

Mhone and Edigheji (2003: 5-6) state that the new South Africa has one of the most progressive constitutions. It is a country that has committed itself to good governance through various initiatives that encompass the establishment of consultative and participatory bodies such as the National Economic Development and Labour Council (NEDLAC) and the Gender and Youth Commissions. It has advanced to support independent structures to monitor relations between the state and the polity through bodies such as the Human Rights Commission and the Public Protector. Hence, the apparatus of the state has been transformed to ensure that it has the capability and potential to live up to good governance as indicated for instance, in the Batho Pele which is an initiative aimed at enhancing the quality and accessibility of government services by improving efficiency and accountability to the recipients of public goods and services. Thus, South Africa is committed not only to formal democracy, but also to good governance in both its narrow and broad dimensions.

Aspirations of democratic South Africa and expectations of domestic constituencies together with various external parties require the development of effective governance mechanisms to make its economy globally competitive while simultaneously improving the standard of living of all South Africans, particularly the previous disadvantaged communities. The activities of trans-national corporations (TNCs) and multilateral organisations such as the World Bank, the International Monetary Fund (IMF) and the World Trade Organisation (WTO) are shaping governance in South Africa whereby these actors apply pressure on the state to liberalise and deregulate the economy as well as to privatise public enterprise. However, the ability of the South African government to meet its democratic commitments to the people – by for instance, expanding job and income generating opportunities, providing improved services, expanding its global competitive economy, depends on the governance capacity within and between the state and society (Mhone and Edigheji 2003).

Mhone and Edigheji (2003: 3) mention that the concept of governance is understood to refer to the manner in which the apparatus of the state is organised, how it executes its mandate and its relationship to society. Good governance may be understood to have at least three aspects: 1) the need for a rule-based, open, transparent, efficient and accountable government; 2) the need for the government to undertake its task in a manner that is participatory and consultative and that generally lives up to the democratic prescripts of formal democracy and 3) the need for the government or the state to ensure that substantive aspects of democracy are achieved. Thus, good governance refers both to the overall environment that is deemed conducive to all three outcomes, and to which each of the outcomes is

formalised and made routine in the everyday affairs of the government and state.

2 What democratic South Africa inherited in 1994?

According to Mogale (2003: 216) the existing post-apartheid democratically elected government in South Africa inherited a perplex melange of administrative, economic, financial and political structures derived from the legacy of decades of apartheid reign. For example, the legal and administrative structures inherited were not intended to serve the broad population of the country, but rather small divided ethnic or racial categories. Neither was the apartheid system known for upholding participatory norms of decision-making and, as a result, different sets of local government administrative structures for different racial groupings were imposed to operationalise discriminatory policies, rather than to deliver basic services to all.

According to Chikulo (2003) with the advent of the new democratic political dispensation, the new South African government faced the problem of how to correct the inherited socio-economic imbalances. In an effort to reduce not only socio-economic imbalances but also meet the high expectations among the majority of the black population, the government pledged itself to rapid socio-economic development by placing alleviation of poverty and inequality at the centre of its development agenda.

The twenty year review of South Africa 1994-2014, (2014: 20) states that South Africa's first democratic government inherited a fragmented, unaccountable and racially divided governance system consisting of homeland administrations also referred to as "Bantustans" or "self-governing territories", national and provincial administrations, as well as separate administrations for certain racial groups. The homeland administrations were poorly organised and resourced, largely without local government, and the services they provided were determined by the apartheid state. Those municipalities that were well capacitated were mostly in the urban areas and served the needs of the White minority. These separate apartheid-era institutions had to be amalgamated into a single democratic, non-racial system.

Prior to 1994, the frameworks governing the public service were highly centralised and regulated, resulting in a bureaucratic, unresponsive and risk-averse public service. In addition, the public service lacked transparency and accountability, providing space for abuse of power and corruption. Post-apartheid South Africa needed a reformed governance system that would allow all South Africans to claim political and social ownership of the country. This meant changing the systems of governance to be geared towards transformation by addressing the legacy of apartheid. There was a need to modernise the public service, to make it more efficient, effective, accountable and people-centred, so that it would be able to fulfil its transformative role (the twenty year review of South Africa 1994-2014, (2014: 20).

Mhone (2003:46) maintains that democratic South Africa inherited an economy that was governed by an enclave formal sector, based on protectionist and discriminatory policies, and which while utilising part of the majority population as its labour force also excluded and marginalised it through apartheid. The overall problem confronting the economy and on the basis of which the development problem rests, relates to the fact that a significant proportion of the labour force is marginalised and under-utilised, because of the historical reasons of discrimination and the very manner in which settler-capitalism developed.

Unlike the apartheid governance system that catered for the interests of the White minority, the governance system in the new dispensation would have to cater for the needs of all South Africans (Edigheji 2003: 70). In its electoral manifesto, the ANC set the scene for future policy. It pledged to promote representative and participatory democracy. This entailed the restructuring of state institutions to make them efficient, effective, responsive, transparent and accountable (ANC 1994: 120). According to Hassen (2003: 123) the new government inherited a public service based on apartheid racial structures, coupled with a rule-based and hierarchical work organisation. The central characteristics of this system included: 1) fragmentation - the public service consisted of a plethora of institutions, provincial administrations, administrations in the self-governing territories and racially based administrative structures; 2) pay determination - salaries were set by a commission, without formal negotiations. Staff associations, especially the Public Service Association (PSA), which predominantly represented White workers in the public service, were consulted. Unions organising African workers were excluded; 3) discrimination - salaries and benefits differed according to race and gender and 4) career progression - incentives and benefits were aimed at ensuring long tenure. Systems for career development were not established. Instead, public service workers received a mixture of benefits, merit awards and training that were not linked to increased responsibility or an improvement in their competencies.

Hassim, Heywood and Berger (2007: 16-17) state that in 1994, South Africa's first democratic government inherited great inequalities in health. These included inequalities in: 1) the impact of disease across races; 2) access to health services between urban and rural areas, and between South Africa's nine new provinces and 3) the quality of health services in the public health system compared to the private health system. These 3 aspects are described in more detail below.

2.1 Racial inequalities

Owing to apartheid, the different races in South Africa experienced different diseases and different outcomes in the management of those diseases. While White people generally experienced low levels of infant and child mortality (due to access to clean water and antenatal services), they had higher levels of "life-style diseases", including cardiovascular disease. By contrast, African people experienced high rates of infectious or transmissible diseases such as TB, as well as diseases of poverty such as cholera and kwashiorkor. The table below shows comparative mortality rates – however, it hides the full extent of discrimination because it does not reveal the different ages at which African and White people died, or the differences between the races on key indicators such as infant mortality and maternal mortality (Hassim, Heywood and Berger 2007: 16-17).

2.2 Geographic inequalities

Great inequalities also existed in access to health services between urban and rural areas, and between South Africa's nine new provinces, several of which incorporated former "homelands" such as Venda and KwaNdebele that had become the most poverty-stricken parts of South Africa. Thus, a detailed report on the distribution of health workers in South Africa in 1994/1995 found that: 1) 63% of public sector doctors, 70% of dentists and 61% of pharmacists were located in 2 provinces – Gauteng and the Western Cape and 2) in one Bantustan, Lebowa (now a part of Limpopo), the ratio of doctors to the population was 1: 33 000 people (Hassim, Heywood and Berger (2007: 16-17).

2.3 Public and private inequalities

There was also serious inequality between health services in the public health system, paid for with tax revenue, and the private health system, paid for mainly by employers and individuals who could afford it. For example, in 1994/1995, although the private sector served only 20% of the population, it had 58% of medical doctors, 89% of dentists and 94% of pharmacists. Unfortunately, this division remains much the same today (Hassim, Heywood and Berger (2007: 16-17).

Wooldridge and Cranko (1995: 332) state that the new political party inherited organisational structures from the previous era that were based on regulatory frameworks and scientific management practices that assumed there is a rational response to each organisational issue. The result was an over-reliance on rigid regulatory frameworks which centralised power in the hands of senior management. The tendency towards centralised hierarchies and top-down planning resulted in layers of middle managers who lacked the discretionary power to manage in the operational sense, and rather administer rules. Jobs lower down the hierarchy were deskilled, resulting in the disempowerment of the front-line worker and the subsequent failure of the organisation to respond to user need. The traditional local government administration is a typical example of a rational administration. Benington (1993) states that this environment comprised of separate departments and committees, co-ordinated by a Chief Executive Officer and/or a policy committee which inclined to disperse power away from the centre of the administration into the hands of department heads. This resulted in strong departmentalism with little interdepartmental coordination.

According to Wooldridge and Cranko (1995: 333) the rational administrative model assumes stability and continuity in society. It practices and working style is based on long-term rigid plans which are scientifically determined and once on track are almost impossible to reorient. The rational model may be appropriate for an organisation that mass-produces standard products. The state, however, is an increasingly differentiated organisation, providing a wide range of services to an increasingly diverse population with diverse needs. The state as a public organisation allocates resources across society through its daily activities. State institutions do not operate in a resolved or perfect world, but rather in an unresolved and conflicted environment, characterised by material scarcity, political divergence and a lack of consensus over the rules of the game. Shifting policy priorities and the ongoing realignment of interest groups cannot be managed in a rigid and inflexible working environment. The rational model effectively closes off the space for negotiation and dialogue, and in particular the ability to take account of such interactive processes in policy and strategy formulation and implementation.

Rational administration emerged when Max Weber made a crucial intervention in shaping the nation state. In response to the corruption, nepotism, unequal access and lack of accountability that had characterised emerging states. Weber developed a conception of the rational bureaucracy. Today, the word bureaucracy evokes images of endless queues, triplicate forms, archives, state records and musty books of regulation. At the time of its conception the rational bureaucracy was hailed as the solution to the problems of the state. The rational bureaucracy was to overcome abuse of power, ensure accountability for state expenditure, treat all citizens in an equal way and organise the administration mass produce services. However, noble attempts have been made to move beyond the rational administration. Internationally the failure of the rational model has been recognised and increasingly, governments representing diverse ideologies are beginning to translate their political agendas into institutional strategies and to develop a state apparatus modelled along political lines (Wooldridge and Cranko 1995: 334).

3 Reform in South Africa

According to Vil-Nkomo (1999: 86) when governments seek transformation, it is often an indication of the need to meet new priorities, policies and strategies. In this process a country may emerge with its own innovative and unique ways of approaching it challenges. Often, however, it engages in a logic of discovery based on learning from what other countries have been or practising. Thus, existing ways of doing things are adapted to suit the particular country's needs. The outcome of the transformation process is therefore not always what was initially advocated or in line with the rhetoric which preceded it. Furthermore, in this process the distinction between the areas of reform and transformation within the system of governance become blurred.

The three most important documents framing post-apartheid, socio-economic policy, as well as governance for a new democratic South Africa, are the Reconstruction and Development Programme (RDP) (ANC 1994), the Growth, Employment and Redistribution policy (GEAR) (ANC 1996), and the Constitution of the Republic of South Africa (ANC 1996).

3.1 The Reconstruction and Development Programme (RDP)

According to Schmitz and Kabemba (2001) the first policy model setting out the government's thinking on reform in social development was the RDP. The ANC used this radical programme of reconstruction and development as a blueprint for social and political transformation in South Africa and later proclaimed this programme as an instrument of fundamental change in the new South Africa.

When the ANC came to power in 1994, it promised to implement the principles of the Freedom Charter, and set these out in more detail in a policy document known as the RDP. The RDP recognised that: "The mental and physical health of South Africans has been severely damaged by apartheid policies and their consequences. The healthcare and social services that have been developed are grossly inefficient and inadequate and there are by international standards, probably enough nurses, doctors and hospital beds. South Africa spends R550 per capita per annum on healthcare. This is nearly ten times what the World Bank estimates it should cost to provide basic public healthcare services and essential clinical care for all, yet millions of our people are without such services or care. Health services are fragmented, inefficient and ineffective, and resources are grossly mismanaged and poorly distributed. The situation in rural areas is particularly bad" (RDP 1994).

Heywood (2004: 21) states that long before 1994, the African National Congress (ANC) and other progressive organisations developed an alternative framework for the provision of healthcare that was based on racial equality and human rights. This started with the Freedom Charter, which was drawn up by the people in Kliptown in 1955. In respect of health, the Freedom Charter, proclaimed as follows: 1) a preventive health scheme shall be run by the state; 2) free medical care and hospitalisation shall be provided for all, with special care for mothers and young children; 3) slums shall be demolished, and new suburbs built where all have transport, roads, lighting, playing fields, crèches and social centres and 4) the aged, the orphans, the disabled and the sick shall be cared for by the state (The Freedom Charter 1955).

Under Healthcare, the RDP promised that "the government will develop a national health system offering affordable healthcare. The focus will be on primary healthcare to prevent disease and promote health, as well as to cure illness. The national health system promised to: 1) give free medical care to children under 6 years and to homeless children; 2) improve maternity care for women; 3) provide free services to disabled people, aged people and unemployed people within five years; 4) organise programmes to prevent and treat major diseases like TB and AIDS; 5) expand counselling services (for victims of rape, child abuse, and other kinds of violence); 6) give women the right to choose whether to have an early termination of pregnancy; 7) improve and expand mental healthcare; 8) run special education programmes on health, aimed particularly at young people; 9) improve occupational health in the workplace and 10) involve the fullest participation of communities" (RDP, 1994).

According to Landsberg (2004: 203-204) the overarching goals of the RDP included sustainable growth, viable employment creation and a movement to full employment, reduction in income disparities, and an equitable system of rights. The RDP set some key targets: 1) creating 2, 5 million jobs in 10 years; 2) building one million low-cost houses by 2000; 3) providing electricity to 2, 5 million homes by 2000; 4) redistributing 30% of arable agricultural land to African farmers within five years; 5) providing 10 years of compulsory, free education and instituting adult basic education and training programmes and 6) democratising and restructuring state institutions to reflect the racial, class and gender composition of society.

The RDP was institutionalised in the form of the RDP Ministry and the RDP Fund, both of which became highly centralised in their decision-making. The RDP office formed a focal point of donor support from 1994 to early 1996. It sought to facilitate cross-cutting policy approaches and encourage new approaches to public sector management and budgeting in order to meet the government's overall reconstruction objectives. Criticism of the institutional arrangements and operational mechanisms established under the RDP broadly centred on the fact that it was highly centralised in its operations. Critics suggested

that there was a real centralisation of planning associated with the programme. However, there was also an increasing understanding within the state that the RDP was not a full strategy for governance and development and it was open to wide interpretation (.Landsberg 2004: 204).

According to Chikulo (2003) the RDP was viewed as the cornerstone of government development policy – a yardstick against which the success of the government development policy could be assessed. However, as a development policy document, the RDP had a number of shortcomings. First, it looked more like a 'wish list' than a strategy document focusing on opportunities and constraints. Second, it made no attempt to set priorities; or to assign responsibility for the implementation of each programme component. Third, it lacked mechanisms for inter-departmental coordination. Finally, local government, which has been assigned constitutional responsibility for promoting socio-economic development, did not have adequate planning and implementation capacity.

Even though the government appeared to have been content with the RDP's broadly humanitarian thrusts, problems began to surface from 1995. The economy, in particular, was not growing at the envisaged rates. The sluggish performance of the economy in turn impacted negatively on the RDP, with achievements falling behind expectations. The welfare orientations of the programme also came under critical scrutiny as investors and international financial institutions began demanding greater clarity on national economic policy. Given the major implementation problems caused by this, it was decided to shelve the RDP (Chikulo (2003).

3.2 Growth, Employment and Redistribution policy (GEAR)

According to Landsberg and Mackay (2006: 8) a prime characteristic of post-1994 economic policies was the desire to create a favourable environment for market-led economic growth. To this end, in 1996, the government launched its macro-economic strategy — Growth, Employment and Redistribution (GEAR). Through GEAR, government committed itself to: 1) creating productive employment opportunities for all citizens with a living wage; 2) alleviating poverty, low wages and extreme inequalities in wages and wealth; 3) meeting basic needs; 4) democratising the economy and empowering the historically oppressed; 5) removing racial and gender discrimination and 6) providing a balanced and prosperous regional economy in southern Africa. The core elements of GEAR were: 1) a renewed focus on budget reform; 2) a faster fiscal deficit reduction programme; 3) a monetary policy to keep inflation low and stable; 4) liberalised financial controls; 5) a strong privatisation programme; 6) tax incentives to stimulate new investment in competitive and labour absorbing projects; 7) an expansionary infrastructure programme to address service deficiencies and backlogs; and 8) wage restraint by organised workers and the introduction of regulated flexibility in the labour market. The government in turn has been hard pressed to highlight some of GEAR's successes. Its Ten Year Review addresses these successes by pointing out that: 1) the budget deficit has come down from 9, 5% of GDP in 1993 to a fraction over 1% in 2002/03; 2) investment as a percentage of GDP has averaged around 16% to 17% and 3) since 1999, the government's investment expenditure has grown from 5, 3% to 9, 3%. While per capita growth was negative in the decade prior to 1994, the economy has since 1994 grown at a rate of 2, 8% per annum; but this is way under par if South Africa is to address the problems of poverty and underdevelopment.

According to Landsberg and Mackay (2006: 8) the new state placed an emphasis on financial management, and government passed the Public Finance Management Act of 1999. This led to improved budgeting and planning at national and provincial levels. The National Planning Framework was also introduced to improve policy planning. Outside government and the private sector, GEAR has been consistently criticised by, among others, the labour movement and the South African Communist Party (SACP). Among the criticisms advanced is that GEAR failed to facilitate growth and bring about serious redistribution of income and, as a result, South Africa witnessed a widening gap between the rich and poor.

According to the OECD/ADB (2002: 207) one of the major objectives of GEAR was to enhance the credibility of the South African government by signalling to the international investor community South Africa's commitment to a stable macro policy. Moreover, the fiscal policy was designed to solve the employment crisis through significant growth increases. One of GEAR's biggest problems is that growth has remained low while unemployment has increased massively. Landsberg and Mackay (2006: 8) suggest that the rapid depreciation of the South African currency during 2001 and 2002 put further pressure on the economy. It was only towards the last quarter of 2003 that the currency appreciated again. Privatisation of state assets remained government policy despite criticism from its social partners, especially the Congress of South African Trade Unions (COSATU) and the South African Communist Party (SACP). The main objections from these critics centred on the potentially negative impact on employment and consumer prices of privatised services.

Mhone and Edigheji (2003: 123-124) maintain that it is within this context that South Africa during the period 1994 and 1999 was characterised by the development of a coalition for change. The expectations of unions, utilising the wider political alliance to forge a progressive agenda for public service transformation, were heightened with the

release of the RDP. The RDP argued for people-centred development, participatory democracy and an accountable development state. However there were ambiguities in the RDP document in relation to the public service. In particular, the clauses on privatisation were left open. The RDP argued that the democratic government would have to assess whether to increase or decrease the size of the public service. During this period the government and unions attempted to forge a common agenda that would take on board the needs of all parties.

The first democratic government of the country, elected in 1994, explicitly committed itself to redress inequality in South Africa. For example, the RDP stated that attacking poverty and deprivation must be the first priority of a democratic government (ANC 1994: 4). This commitment was supported by the 1996 Constitution and associated Bill of Rights. Although equity has remained a key policy goal across sectors since 1994, the approach to its achievement has been heavily shaped by the 1996 GEAR. GEAR overtook the RDP as the governments' pre-eminent policy framework and places greater emphasis on economic growth as a strategy for redistribution than the RDP.

McIntyre and Gilson (2002: 1652) state that while the RDP set the broad parameters for the government's economic policy, it was the development of the GEAR policy in 1996 which has had the most dramatic impact on social sector policies. Much subsequent policy development in the social sectors, including health, has been strongly shaped by GEAR (Gilson and McIntyre 2002). Gilson, Doherty, McIntyre, Thomas, Brijlal, Bowa and Mbatsha (1999) suggest that GEAR is comprised of three main objectives: 1) promoting private (especially foreign) investment; 2) encouraging export-led growth 3) and improving productivity. These objectives are to be achieved by: 1) reducing the deficit to improve business confidence and private investment; 2) increasing government spending at a rate slower than overall economic growth and 3) tight monetary controls and the removal of import tariffs and exchange controls to encourage private (notably foreign) investment. The emphasis on private investment and export promotion has constrained job creation and raising income levels for the poor. Wadee, Gilson, Thiede, Okorafor and McIntyre (2003: 11) maintain that the macro-economic environment is one that encourages private investment creating the space for greater private sector engagement in the health system.

According to Mhone and Edigheji (2003: 125) the government started experiencing pressure to transforming the public service. For instance, the White Paper on Transforming Public Service Delivery under the rubric of Batho Pele, fundamentally redefined citizenship, whereby citizens were equated with customers. To treat citizens as customers according to the Batho Pele White Paper entailed: 1) listening to the views and taking account of them; 2) treating them with consideration and respect; 3) making sure that the promised level and quality of service is always of the highest standard and 4) responding swiftly and sympathetically when standards of service was not met.

According to Muthien, Khosa and Magubane (2000: 5-6) given the legacy of repression and discrimination, systematic destruction of the African family life and social capital, and the distorted nature of service delivery and social structures under apartheid, the democratic state faced a formidable challenge to not only establish new democratic forms of governance, but fundamentally transform society. According to Khosa (2000) a key feature of this transformative agenda is the delivery of substantive political and economic democracy. This agenda according to Muthien et al (2000: 6) was captured in the RDP, aimed at not only transforming the state and society, but also on substantially improving the material well-being of the majority of the population. According to Bond and Khosa (1999) the programme lead to public debt escalation amidst a drive to reduce the size of the civil service. In addition, the RDP Office, created a 'super ministry' in the President's Office, did not realise the aim of policy implementation. Hence the RDP Office was abolished and a new policy framework premised on neo-liberal economic assumptions was operationalised. This new macro-economic policy framework – the Growth, Employment, and Redistribution (GEAR) policy emphasises the redistributive thrust of the reprioritisation of government expenditure and the role of social and sectoral policies in meeting basic needs, improving services available to the poor and building social infrastructure. It stresses that growth needs to be translated into redistribution of incomes and opportunities through appropriate social development policies and programmes and deliberate promotion of employment creation. GEAR envisages increased state expenditure on infrastructure as an enhancer of growth.

According to the De Beer and Broomberg (1990: 119) change began to occur from about 1990 where individuals and health organisations campaigned for a better, healthier future for all citizens, and debated the ways in which more inclusive healthcare for instance could be brought about through radical change. Planning an equitable system that would end the vested interests of apartheid was perceived to be part of a broader democratic process involving a wide process of consultation. According to Benatar (1990) there was recognition that South Africa was one of the most unequal societies in the world, and hence an acceptance that it was imperative to have universal access to healthcare, as a right rather than a privilege.

4 Developments since 1994

According to Savage (1979) in Digby (2006: 424) practical attempts after 1994 to improve health by

redressing the racially-based injustices of the past needed to reach beyond a restructuring of hospitals and clinics to a broader environmentally-based government strategy to improve the basic infrastructure in which millions lived. Arguably, it was not medical care but inadequate socio-economic structures and environment that most affected the health of the African population.

According to the twenty year review of South Africa 1994-2014 (2014: 20) the country's governance landscape has been significantly transformed since 1994. The Constitution of the Republic of South Africa (1996) provided the foundations for building a democratic and inclusive state and is hailed as one of the most progressive in the world. Apartheid laws were repealed and a Bill of Rights enshrined in the Constitution, guaranteeing all citizens' socioeconomic and human rights. Independent institutions were established under Chapter 9 of the Constitution to strengthen accountability, safeguard democracy and build a responsive state. An independent judiciary and the constitutional freedom of speech and assembly were legally established. This has enabled citizens to pursue their political views and ideals freely and to trust the decisions of the judicial system.

Post 1994 the structures of the state were reorganised by the Constitution. The previous so-called independent Bantu homelands were re-incorporated into South Africa, and the self-governing Bantu homelands were dissolved. In their place nine provinces with their own legislatures and executives were established. These nine provinces each have a legislature with significant, delegated powers yet integrating the former administrations and Bantustans into a unified public service, operating in the national and provincial spheres, proved to be a daunting task (The twenty year review of South Africa 1994-2014 2014: 20).

The twenty year review of South Africa 1994-2014 (2014: 20) admits that despite this dramatic expansion, access to quality services remains uneven. These disparities result from apartheid spatial and governance systems, compounded by institutional weakness in some provinces and municipalities. In short, the state's capacity is weakest where socio-economic pressures are the greatest. The National Development Plan (NDP) mentions that there is unevenness in capacity that leads to uneven performance in the public service. This is caused by a range of factors, including tensions in the political administrative interface, instability of administrative leadership, skills deficits, insufficient attention to the role of the state in reproducing the skills it needs, weaknesses in organisational design and low staff morale. Other causal factors include the lack of a culture of continuous improvement, insufficient attention to operational management and a lack of management accountability. The last part of this article identifies the steps that are being taken to overcome these challenges and build a capable and developmental state that can drive the country's development and transformation.

According to Muthien, Khosa and Magubane (2000: 8) an important feature of transformation during the first term of office of the democratic state was the decentralisation of public policy making. The new political environment introduced a variety of new processes and practices that differed radically from those that marked policy making during the apartheid era. In particular, the previously semi-secretive, technocratic, authoritarian mode of policy making was replaced by a more public and accountable policy making. Perhaps the most significant example of this new political culture was the Constitutional Assembly Project (CAP), which aimed to draw civil society in constitution writing. The objective was to empower institutions and community organisations outside of the state to participate in decision making. The creation of the new democratic state, which was more inclusive and more responsive to the needs of the previously excluded majority, required a fundamental overhaul of all policy and implementation frameworks for service delivery. The ANC took office armed with new policy initiatives, contained in the RDP, which in itself was developed through constituency inputs and consultation. Hence, policy making in the new government became open to mass public input, thus introducing participatory democracy, accountability and transparency.

The opening sentence of the State and Social Transformation of the ANC (1996) reads: "The struggle for the social and economic transformation of the South African society is essentially the task of replacing the apartheid state with a democratic one". The ANCs Draft Strategy and Tactics (1997) under the heading 'Programme of National Democratic Transformation in the Current Phase', points out four main transformative tasks for the democratic state: 1) democratisation and governance – the central aim is to a democratic state underpinned by the principles of good governance; 2) transformation of state machinery – the aim is to change the doctrines, composition and the management style of civil service; 3) Economic transformation – the central aim is to promote growth and development and 4) meeting social needs – the central aim of transformation is to improve the living conditions of the people, especially the poor. According to Muthien, Khosa and Magubane (2000: 42) the transformative role of the state is explicitly recognised in most policy documents of the new democratic state. These policy documents include the term 'transformation' in their titles. These include the White Paper of the Department of Health, Transformation of the health system, the White Paper of Transformation of the Public sector and the White Paper on Transforming Service Delivery.

When the democratic government came into power, it promised to alleviate the division between the public and private sectors through the unification of Bantustan health systems under the jurisdiction of

provincial and national healthcare systems. As a result, the rural health sector was consolidated from 400 independently-run local systems into nine provincial healthcare systems (Kon & Lackman, 2008). Although responsibility for implementing public programs remained at the provincial level, the national government sought to ensure that the collection and distribution of revenue was equitable, and it set new standards for service provision (Schneider and Stein 2001).

According to Landsberg and Mackay (2006: 6), since 1994 government has had to systematically and deliberately unscramble apartheid institutions and replace them with new democratic and legitimate institutions. It was determined to replace the apartheid-order and polity with a rule based democratic society based on the principles of equity, non-racialism and non-sexism. The state has been gradually democratised and universal franchise has been extended to all citizens. However, the government's highly ambitious transformation programme placed enormous strain on an inexperienced state. The transformation of the state involved overhauling the state machinery, fundamentally changing the entire policy tapestry, and introducing a new legislative framework. To this end, some 90 pieces of legislation were passed per annum for instance the Bantustans were reincorporated and their public services were melded with those in South Africa to create a single public service.

According to Landsberg and Mackay (2006: 6), the restructuring of the public service also involved reskilling and retraining. It addressed representivity to the extent that some 72% of all public servants are now Africans. The affirmative action and equity drive has ensured that the civil service reflects the demographics of society. The size of the public service was reduced from 1, 2 million in 1994 to just over a million in 2001. But the public service faced many capacity constraints making it heavily reliant on consultants, with 25% to 30% of state tenders going to consultants. Governance and administration objectives were also focused around delivery, and the government introduced the idea of integrated governance between different departments at the national level, strengthening the centre, and the co-ordination between the national, provincial and local government spheres. By 2002, a new focus had emerged and the government and governance stressed support for the New Partnership for African Development (NEPAD) activities. Thus, South Africa's continental objectives began to be reflected in its internal policies.

According to Venter and Landsberg (2011: 9) the reign of the ANC since 1994 faced formidable challenges of governance. Four White provincial governments and nine former Bantu homeland governments had to be incorporated into nine provincial governments and one national government. Moreover, the whole state administration had to be restructured into a non-racial system, and African people who had historically been excluded from high-level civil service positions had to be recruited, appointed and trained. The new government had to follow a balancing act in maintaining system stability - mainly White staff expertise and new Black empowerment in the civil service. Moreover, the economy had to be revitalised from an apartheid economy to one that had to face the international economy in which highly developed industrial economies had to be engaged.

Twenty years later, the evidence of the ANC as government in restructuring the South African body politic is varied. The formal institutional structures of the nine provinces and 280 local governments have been achieved. The civil service has been restructured to demographically reflect the face of South African society. The economy has adapted to the new international political economy. South Africa has been accepted in the international community of states as a valuable member of the group of developing nations. The ANC has to get credit for managing such a fundamental reorientation of the South African political landscape (Venter and Landsberg (2011: 9).

4.1 Policy-making and Implementation

According to Landsberg and Mackay (2006:9) when South Africa's new inclusive democracy was initiated in 1994, the government sought to adopt policies and practices designed to serve the interests of all, regardless of race or gender, rather than separate development. The new government was open to innovative approaches to policy. However, policy and policy challenges took place against the backdrop of a tough developing country setting. Resources and skills were limited, and the capacity to implement the new policies was in short supply. The Nelson Mandela government placed an emphasis on policy-making and overhauling the old policy landscape. The government felt pressed to make new and progressive policies which enjoyed legitimacy. The Mbeki government in turn felt the need to shift away from policy-making to a greater emphasis on consolidation and the implementation of policy. The emphasis was on policy formulation, with an increased focus on improving the effectiveness of implementation systems and enhancing the provision and delivery of basic services. The government articulated a programme of action aimed at 'speedier transformation towards delivery, and an improved quality of life for all South Africans, especially the poor'. Both the Mandela and Mbeki governments adopted policies and policy implementation strategies that had to respond to the massive and daunting apartheid legacy by focusing on alleviating poverty, creating African middle class or 'patriotic bourgeoisie', free market policies in search of foreign direct investment and job creation, and putting in place a responsive civil service.

However, ten years into South Africa's democracy, there was clearly a gap between policy and implementation. Policy-makers and bureaucrats charged with implementation have often been unaware of the many unintended consequences of policies and the fact that policies were often highly ambitious. Policies often came up against tough practicalities in the field for instance the implementation of policies was often more costly than initially anticipated at the policy-making phase. Furthermore, the government was under constant pressure to revamp the skills of those people intended to implement them. This often brought about uncertainty in the ranks of implementers about their competencies and skills (Landsberg and Mackay 2006: 9).

According to Landsberg and Mackay (2006:9) suggest that while the intentions behind many of the policies were always good and noble, often unexpected consequences resulted. For example, the government had a clear goal of empowering local communities, but policy sometimes achieved the opposite. Where policy-makers failed adequately to consult the intended beneficiaries, such policies had unintended consequences. Foisting policies that worked in developed countries into a developing country may have negative consequences. The quest for 'world class policies' denotes such a practice. South Africa developed a penchant for trying to learn from and emulate the developed countries. Sometimes, such 'world class' policies were not always readily implementable, as the necessary conditions for their successful implementation did not exist on the ground. Thus the policies are set up for failure, or they benefit only those sectors of the population that are able to access them.

Yet, policies do not have to be world class to be successful; what is needed are good policies for the particular circumstances that they seek to address. Policies based on one important consideration may have consequences for other areas. Many policy areas also required co-ordination with other sectors in order to ensure the delivery of the intended end-product to the beneficiaries. In the health sector, for instance, the policy decision to provide primary healthcare in rural areas through the provision of clinics was an important one, as the intention was to bring accessible healthcare closer to rural populations. However, several of these clinics have been built and are standing empty. This is because there are no roads leading to them, or there is no energy to power basic equipment, or there is no sufficient and professionally competent staff. So the Department of Public Works for instance should also have been consulted when making of this policy (Landsberg and Mackay (2006: 9).

According to Ngwenya (2006: 81) as part of the transformation from apartheid, South Africa has followed international human rights jurisprudence in recognising rights concerning health as fundamental rights. While the South African Constitution has a number of provisions dealing with rights concerning health, the most significant is Section 27, which provides that:

(1) Everyone has the right to have access to:

(a) Healthcare services, including reproductive healthcare;

(b) Sufficient food and water; and

(c) Social security, including, if they are unable to support themselves and their dependants, appropriate social assistance.

(2) The state must take reasonable and other measures, within its available resources, to achieve a progressive realisation of each of these rights.

(3) No one may be refused emergency medical treatment (Constitution of the Republic of South Africa Act 108 of 1996).

Since 1994, numerous major reforms have taken place. Health policy, health legislation, and the structure and content of the healthcare system have fundamentally changed (Van Rensburg 1999). The reforms are essentially aimed at rectifying the gross disparities in access to healthcare that characterised the pre-democratic era. The RDP of the ANC and the ANC's National Health Plan were initially instrumental in delineating the direction of reform. Subsequently, however, the 1997 White Paper on the transformation of the health system in South Africa (1997) has articulated comprehensively the direction, strategies and pace of reform whilst the Constitution has served as a firm basis for legitimising ongoing reforms.

The edifice of policies, laws and structures that ensured differential and unequal access to healthcare services, as part of shoring up separate amenities, homelands and tri-cameral policies, have been dismantled. The erstwhile 14 departments of health have been dismantled in favour of a unified, but decentralised, system with one national department and nine provincial departments. The current National Health Act puts the new structure on a statutory footing (Ngwenya 2006: 81).

According to Ngwenya (2006: 81) Primary HealthCare (PHC) is now the concept around which healthcare is organised, born out of the World Health Organisation's (WHO) Alma Ata Declaration. A central tenet of PHC is universal access to a package of essential health services. The government has developed a framework for implementing PHC which according to Van Rensburg (1999) is organised around a decentralised system — the District Health System (DHS). The DHS is an instrument for decentralising, regionalising and democratising healthcare so as to bring it as close as possible to the people. The DHS entails dividing the nine provinces into smaller administrative and service units — 50 health regions and 170 districts. Communities become part of the planning and organisation of healthcare services. Both the PHC and the DHS call for a fundamental shift in allocation of healthcare resources. They entail not only dismantling the racial bias of the past, but also,

equally significant, dismantling the curative and urban biases of the past. According to Van den Heever and Brijlal (1997) the health budget has being diverted from academic and tertiary hospitals to fund PHC and DHS. From 1996/97 to 1997/98, there was a shift of 8% from hospital services and 10, 7% towards district health services. Abbot (1997) states that as part of rectifying the dearth of services in rural areas, a massive Clinic Building and Upgrading Programme has been underway to reduce an unmet need of 1 000 clinics. From 1994 to 1999, between 450 and 500 clinics were built.

Since 1994, significant progress has been made towards removing income as an impediment to access healthcare services. Notice 657 of 1994, 1 July 1994 states that the state will provide free health services for pregnant women and children under the age of 6 years. Van Rensburg (1999) maintains that access to free health care has also been broadened to PHC services. This is in line with the egalitarian values that underlie the concept of PHC. Free services have also been introduced for children up to 12 years at public clinics. Several pieces of legislation that impact on free health care policies have been passed. For instance, the Choice on Termination of Pregnancy (Act 92 of 1996) has radically transformed access to abortion services. In the first 12 weeks of pregnancy, abortion is obtainable on re- quest. Abortion services are free at the point of access. Parliament introduced new laws to regulate healthcare to meet the needs of people. The Medical Schemes Act (131 of 1998) makes it illegal for a medical scheme to refuse membership to a person on the grounds of disability and state of health. The Act requires medical schemes to offer a prescribed minimum of benefits to all members.

The Pharmacy Amendment Act (88 of 1997) for example extends ownership to non-pharmacists providing that prescribed medicines are dispensed under the supervision of a pharmacist. It is envisaged that this measure will encourage the setting up of pharmacies in underserved areas, such as rural areas. The Medicines and Related Substances Control Act (90 of 1997) was passed with a view to making medicines cheaper through a variety of ways, including parallel importation; institution of price controls; promotion of generic substitution; and prohibition of bonusing and rebates, which drug companies use to offer discounts to dispensers of medicines. Another important new policy was the 1996 National Drug Policy that set out to ensure the universal availability of high-quality, low-cost drugs. This policy aimed to: 1) rationalise the use of medicines by creating and Essential Drug List (EDL) of medicines that should be available at all health facilities and 2) encourage the use of affordable generic medicines, rather than expensive patented medicines.

Subsequently there has also been significant restructuring within the health sector. The ANCs national health plan for South Africa (1994) defines this restructuring. The national Department of Health is now largely responsible for policy making and co-ordination functions, while the provincial health departments are responsible for the vast majority of health service provision. In addition, local governments have a constitutional responsibility for the provision of .municipal health services (a contested term, variously defined as including environmental health services only, or also primary care facilities or also the district hospital). There is a commitment to establishing a district health system that will integrate the primary care services currently provided by provincial administrations and local governments. However, the major obstacle to establishing health districts has been lack of clarity about their governance structure specifically, whether the district health system will be rooted in deconcentration of authority to provincial health departments or devolution to local governments. Recent legislation suggests that local governments will become the dominant structure at health district level in the future, but in the interim provincial health departments are likely to continue to play the dominant role in primary care provision in most provinces.

According to Hassim, Heywood and Berger (2007: 19-20) the government faces great challenges in fulfilling its duty to ensure that all people are able to access healthcare services. These involve improving the social conditions that influence health and restructuring the management of the health sector by: 1) integrating racially divided health services – 14 separate health departments had to be integrated into a national health department and nine provincial health departments; 2) establishing a district-based health system - this was seen as critical to implementing the PHC approach.

An additional obstacle was the difference on conditions of service between staff in different authorities, e.g. provincial health departments paying their staff differently to local authority staff; 3) creating equity in access to health services – equity was needed between races, classes and people in different parts of the country. This may require government to increase spending on historically disadvantaged parts of the country and decrease spending in other areas and 4) transforming the human resources profile of the health system – apartheid skewed the distribution of health workers, depriving African people of access to healthcare and African healthcare workers from access to skills, training and experience. The new government has plans to:

- Improve racial and gender diversity among health workers;
- Redistribute health workers to rural and poor urban areas; and
- Provide new skills to health workers in order to manage and provide an effective primary healthcare system (Hassim, Heywood and Berger 2007: 19-20).

The new vision of health was to be achieved through a re-organisation of the structure and management of the health system, and through reforms in policy legislation and financing.

In April 1997, the government published the White Paper for the transformation of the health system in South Africa to improve health though achieving a new mission, goals and objectives for the health sector. It stated that in future the national health system would aim to provide caring and effective services through primary healthcare approached, based on the district health system. The White Paper maintained that the challenge was to establish an integrated health system and an effective referral system between the different levels of care. The objective was to ensure that most people enter the health system at the primary care level, where they receive basic care and health education, and that more complicated healthcare services are dealt with by district and specialist hospitals.

Under apartheid, health funding was predominantly directed at White people in urban areas who used hospitals for healthcare. The new challenge was: 1) fund health for all people in both urban and rural areas and 2) correct the balance between funds available for the private sector and the public sector, by spending more on the public sector as the sector servicing the majority of South Africans.

According to Benatar (1990: 441) the current healthcare system can be accurately described as mal-distributed, poorly funded and coordinated, fragmented and duplicated, discriminatory on a racial basis, hospital-based and supported by very poorly developed ancillary services. According to Digby (2006: 434) practical changes in healthcare have been slow to emerge after the democratic transition. The ANCs RDP of 1994 included requirements for basic health needs in its proposals and in the following year workshops were held in the provinces to develop health goals, objectives and indicators. In 1995 a policy document on a district health system was issued by the department of health, and in April 1997a White Paper on health system transformation was endorsed by Parliament. Its objectives included unifying the fragmented health services into a comprehensive and integrated system that would promote equity, accessibility and community participation.

Conclusion

This article has noted that pre-1994 South Africa created political, socio-economic and human rights crises that will likely haunt South Africa for decades. Pre-1994 South Africa was one of the worst violators of human rights and thus came to be dubbed by the UN and many states as committing a 'crime against humanity'. South Africa is a democracy with deep-seated poverty and inequality. This is a challenge that South Africa must confront.

Although there have been many important reforms in healthcare for example, there are many challenges that remain. It can also be argued that whilst discrimination on the grounds of race is no longer allowed, there is still great discrimination on the grounds of class – and that the people who benefited under apartheid continue to have access to a better quality of care in the new South Africa.

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FINANCIAL KNOWLEDGE AND SUBJECTIVE FINANCIAL RISK TOLERANCE AMONG STUDENTS AT A SOUTH AFRICAN UNIVERSITY

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Abstract

This study used a self-administered questionnaire to determine the effect of financial knowledge and other demographic variables on Financial Risk Tolerance (FRT) among South African University students. Descriptive statistics and a binary logistic regression model were used to analyse information from 330 participants selected from a South African University in the Gauteng province. The results indicated that the probability of being risk tolerant was high among students with financial knowledge compared to those without financial knowledge. Among demographic variables, monthly expenditure and religion were found to have a significant effect on Financial Risk Tolerance. The results of the study thus draw attention to a number of factors that can help investment managers in finding suitable financial products for their clientele.

Keywords: Risk Tolerance, Subjective Risk, Risk Aversion, Financial Knowledge, University Students

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1 Introduction

In financial planning and investment processes, education plays a very important role in determining an individuals' level of financial risk tolerance (FRT) (Ryack, 2011:181). The role of education in this regard has however received limited attention especially on the concept of type of education (field of study) as opposed to level of education as a demographic factor affecting FRT (Ryack, 2011). FRT refers to the extent to which an individual is willing and able to accept a relatively high level of uncertainty in anticipation of possible higher returns (Sulaiman, 2012). In financial planning and investment processes, FRT is given a considerable amount of attention as it can be used to predict investment and savings behaviour (Yao et al., 2005). A number of demographic factors including education, age, gender, race and income have emerged as possible drivers and determinants of FRT (Grable and Lytton, 1999). Various researchers have reached different conclusions on the link between FRT and these demographics. For example, Barsky et al. (1997) and Gilliam et al. (2010) found a positive relationship between an individual's level of education and FRT; while Gumede (2009) found no significant relationship between level of education and FRT. Bajtelsmit and Bernasek (1996), Harlow and Brown (1990) and Hallahan et al. (2004) found a negative relationship between age and FRT while Bommier and Rochet (2006) and Wang and Hanna (1997) concluded that older individuals tend to hold riskier assets compared to younger individuals. Grable and Joo (1997) and (Ryack, 2011) indicated that high levels of FRT can be attributed to high levels of financial education as opposed to non-financial education.

The research interest in FRT and its determinants arose because financial companies and investment managers felt that it could help them find suitable financial products for their clientele (Roszkowski and Snelbecker, 1989). This helps them develop and market relevant products to a relevant group of customers. Furthermore, risk tolerance is not static, but a continuously moving target; thus requiring regular valuation (Larkin et al., 2013). In addition, Riley & Russon (1995) have also demonstrated that recommendations by financial advisors are influenced by their perceptions of FRT which are related to an individual's demographic factors. Although these demographic variables have shown a significant impact on FRT, they only provide a partial explanation of the variance in FRT. There are still a number of variables that may be important determinants of FRT, but have not received equal attention. The role played by financial education/knowledge on FRT is one area that has received relatively limited attention. This paper thus aims to investigate the extent to which financial education and other demographic variables influence an individual's willingness to take on financial risk in a South African context. The specific objectives of the study are to:

- Determine whether students in finance related careers tolerate more financial risk than those in non-finance related careers;

- Examine whether postgraduate students tolerate more financial risk that undergraduate students; and
- Determine whether some demographic variables have an effect on subjective FRT.

2 Literature review

The study of FRT has been of interest to investors and academics for hundreds of years and tended to revolve around methodologies such as choice dilemmas, utility theory, objective measures, subjective assessment and heuristic judgements (Grable and Lytton, 1999). Whether measured for the purpose of self-assessment or for documentation of investment suitability, FRT is assumed to be a fundamental issue underlying a number of financial decisions (Sung and Hanna, 1996). Formally, Harlow and Brown (1990) define personal FRT as the extent to which an individual is personally capable and willing to accept the likelihood of an uncertain financial outcome in exchange for the possibility of a higher financial return. This risk tolerance is concerned with personal attitudes, opinions and beliefs towards accepting financial risk (Chaulk et al., 2003). Furthermore, subjective FRT is referred to as an indication of an individual's attitude towards accepting risk (Hallahan et al., 2004). When dealing with subjective FRT, one is essentially looking at the attitudes that people hold towards financial uncertainty (Faff et al., 2006). The notion of FRT is inversely related to the concept of risk aversion which refers to the unwillingness of an investor to accept a bargain which has an uncertain outcome rather than one with high levels of certainty, but lower expected outcome (Faff et al., 2006). Therefore, individuals who are more risk averse will have lower tolerance for financial risk and those who are less risk averse will have higher level of FRT (Faff et al., 2006).

There are two common measures of FRT in subjective measures and objective measures (Hanna and Chen, 1997). Objective measures determine risk preferences by examining revealed behaviour (Hanna et al., 2001), whilst subjective measures generally assess an individual's self-perceived risk tolerance level (Chang et al., 2004). Since this study focuses on university students, subjective measures will be utilised. This is because the participants, being students, are not likely to have accumulated some sort of risky investments or assets for objective measures to work.

Measured by calculating the total number of schooling years or by qualifications obtained, level of education usually has a positive effect on FRT levels (Sung and Hanna, 1996). Hence, higher levels of education are associated with higher FRT levels (Barsky et al., 1997). Financial education on the other hand refers to the possession and understanding of financial matters and is mainly used in connection with personal finance matters (Starcek and Trunk, 2013). This branch of education often entails the ability to properly make decisions pertaining to certain personal finance areas such as real estate, insurance, investing and savings (Starcek and Trunk, 2013). Financial education can include self-taught education through years of experience or taught in school when pursuing a certain financial related career. As a dynamic concept, financial education is very difficult to measure; however, in this study it is measured according to a career an individual is pursuing with commerce students assumed to acquire some financial knowledge from their curriculum. For most of humanity students, their curriculum may not necessary involve financial knowledge; thus, they are assumed not to have financial education. Although it has not been examined to the same extent as other variables, some studies (Grable, 2000; Ryack, 2011) found a strong association between financial education and FRT. The results of these studies suggest that FRT increases for higher levels of financial education.

3 Methodology

3.1 Sampling and description of participants

A self-administered questionnaire was used to collect data, during July and August 2014, from a sample of 350 randomly selected undergraduate final year and post graduate students at a South African university in the Gauteng province. The initial sampling stage involved a purposive sampling where participants where controlled for field of study and year of study. Random sampling which ensures that each element in the population has an equal chance of being included in the sample (Brown et al., 2011), was then used to recruit particpants in each group. As such, participants were divided into two groups depending on their field of study and questionnaires were apportioned evenly. From the 350 administered questionnaires, a total of 330 (94%) usable questionnaires were returned with 51% of the questionnaires completed by commerce students and 49% by Humanity students.

3.2 Research instruments and procedure

A quantitative research approach was adopted for the purpose of this study. Arising from a comprehensive literature study, a questionnaire was developed mainly by revising and combining the Grable and Lytton (1999) questionnaire and the Hanna and Lindamood (2004) questionnaire. The developed questionnaire addressed a major problem of understand-ability encountered in previous questionnaires that were difficult to understand for people without financial based education or exposure to financial knowledge. With two major sections, the first section of the questionnaire captured basic demographics of the students; while the second section captured risk tolerance levels of the students. The second section

was divided into three subsections covering income risk, investment risk and speculative risk.

The questions in the second section of the questionnaire were structured in the form of a multiple choice, with options ranging from 3-6 options in each question. In identifying FRT levels, each option in the multiple-choice questions was assigned a score ranging from 1-6 depending on the number of options in each specific question. A low score of 1 was assigned to the least risky option in each question; while risky options were assigned a higher score. This meant that a multiple-choice question with three options would have a minimum score of 1 for the least risky option and a maximum score of 3 for the most risky option. This is the same system used by both Grable and Lytton (1999) and Hanna and Lindamood (2004) in their questionnaires. The total score for each sub-section was added together and using the Grable risk tolerance scoring method, individuals were classified accordingly. This risk tolerance scoring method calls for participants with an FRT score below the average recorded score to be classified as not risk tolerant and for participants with an FRT score above the total recorded score to be classified as risk tolerant individuals (Grable and Lytton, 1999).

3.3 Model specification

In addition to descriptive analysis, this study employed a binary logistic regression model which has a dependent variable of a dichotomous nature. Five independent variables in financial education, level of education, gender, religion and expenditure were considered. The participants were ultimately classified as either risk tolerant or not-risk tolerant depending on their FRT score. The dependent variable was assigned a value of 1 for a risk tolerant participant and a value of 0 for a not-risk tolerant participant. The binary FRT status is therefore expressed by a linear variable $Y^{\wedge *}$ as follows:

$$Y_i^* = \Sigma\beta X_i + u_i \quad (1)$$

Where X_i represents a set of independent demographic variables that determine an individual's FRT status, β on the other hand represents coefficients $(\beta_1, \beta_2, \ldots \beta_n)$, while u_i represents the error term. Since Y^* is a latent variable and thus not observable, we thus observe an event represented by a dummy variable Y defined as follows:

$$Y = 1 \; if \; Y^* > 0 \; and \; Y = 0 \; otherwise. \quad (2)$$

Therefore, from equation one and two, the probability of being financial risk tolerant can be represented as follows:

$$\begin{aligned} Prob\,(Y_i = 1) &= F(\beta Xi) \\ Prob\,(Y_i = 0) &= 1 - F(\beta Xi) \end{aligned} \quad (3)$$

Ultimately, the binary logistic model with the assumption of normal distribution is as follows:

$$FRT_i = \beta_0 + \beta_1 FE_i + \beta_2 LoE_i + \beta_3 G_i + \beta_4 EX_i + \beta_5 RE_i + e_i \quad (4)$$

Where: FRT_i = the financial risk tolerance status, β_0 = the intercept, $\beta_1, \beta_2, \beta_3, \beta_4 \; and \; \beta_5$ = the coefficients, FE_i = exposure to financial education (1 for exposure to financial education and 0 otherwise), LoE_i= level of education of participants (1 representing postgraduate and 0 undergraduate), G_i = gender of participants (1 for male and 0 for female), EX_i = expenditure of participants (continuous values), RE_i = religion of participants (1 for Christian participants and o for non-Christian participants), and e_i = the error term.

4 Empirical results

4.1 Demographic information of participants

When analysing the observations according to financial education, participants that have been exposed to financial education were separated from those who are not exposed to financial education as measured by the qualification one is studying towards (Field of study). These demographics and their respective descriptive statistics are represented in Table 1. The observed results indicate a total of 330 participants where 168 (51%) have been exposed to financial education in their field of study and 162 (49%) are not exposed to financial education. On average, participants with financial education appear to be just a year younger than participants that do not have financial education. The unemployment rate for finance students is 70%, slightly less than that of non-finance students of 75%. The average expenditure of finance participants was observed at R 1 638 per month compared to R 1 532 per month for no finance students.

Off the 208 Christian participants, 71% (148) were students exposed to financial education, while the remaining 29% (60) were from non-finance background. The descriptive statistics also show that there were 180 postgraduate participants compared to 150 undergraduate participants. Among postgraduate students 59% (107) were from humanity studies, while 41% (73) were from commerce studies. For undergraduate students, 63% (95) and 37% (55) of participants were from commerce and humanity studies, respectively. It was also observed that there were more female participants (94 or 59%) with exposure to financial education compared to 66 (41%) non-finance female participants. Table 1 also shows that the proportion of male participants with exposure to financial education to male participants with no exposure to financial education is less by 22.

Expenditure is a continuous variable with a minimum of R 200, average of R 1 586 and a maximum of R 19 000.

Table 1. Descriptive statistics of the participants according to field of study

Description		*With financial education*	*Without financial education*	*Total*
Count		168	162	330
Gender	Male	74	96	170
	Female	94	66	160
Level of education	Postgraduates	73	107	180
	Undergraduates	95	55	150
Population group	African	121	81	202
	Non-African	47	81	128
Religion	Christian	148	60	208
	Non-Christian	20	102	122
Age (Avg)		23	24	23
Employment rate		30%	25%	27%
Income (Avg)		R 2008	R 1880	R 1946
Expenditure (Avg)		R 1638	R 1532	R 1586

4.2 Distribution of FRT within the status of financial education

The distribution of the FRT between participants with financial education and those without financial education is summarised in Table 2. This table 2 shows that there were 55 (34%) financial risk tolerant participants without financial education as opposed to the 145 (86.3%) from the participants with financial education. Similarly, there were 107 (66%) participants without financial education who are not tolerant of financial risk as opposed to the 23 (13.7%) participants with financial education who are not tolerant of financial risk. It can thus be seen that majority of participants with financial education are tolerant of financial risk; while majority of participants without financial education are not tolerant of financial risk. These results clearly show that being exposed to financial education increases the level of financial risk tolerance. Thus, participants with a superior level of financial knowledge seem to understand and relate better to risk, hence they are able to assume more financial risk than those with lower levels of financial knowledge. These findings are also in line with those from other studies (Barsky et al., 1997; Chang et al., 2004) which found that FRT is influenced by financial knowledge.

Table 2. Financial risk tolerance within the status of financial education

	Subjective financial risk		*Total*
	Not Risk tolerant	*Risk tolerant*	
Participants without financial education	107	55	162
	66.0%	34.0%	100.0%
Participants with financial education	23	145	168
	13.7%	86.3%	100.0%
Total	130	200	330
	39.4%	60.6%	100.0%

4.3 Analysis of determinants of FRT

Table 3 summarises the logistic regression results estimated from Equation (4). The level of education has a positive coefficient, suggesting that the probability of being risk tolerant increases with level of education. This means that postgraduate participants will tend to tolerate more financial risk compared to undergraduate participants. However, a low z-statistic of 0.61859 (with a p-value = 0.5362), implies that level of education is not a significant predictor of FRT. Exposure to financial education (field of study) has a z-statistic of 6.662 (with a p-value = 0.00); implying that it is statically significant at the 1% level of significance. This coefficient is also positive indicating that having financial knowledge increases the probability of being financial risk tolerant. Students with exposure on financial education tend to tolerate more risk than those without exposure on financial education. The coefficient for student's expenditure is also positive and has a z-statistic of 2.248, (with a p-value = 0.0246 meaning

that it is statically significant at the 5% level of significance. Thus, increases in student expenditure increases the probability of being risk tolerant. With male coded as 1 and female 0, a positive beta means that being male increases the probability of being risk tolerant. However, a z-statistic of 0.853 with (a p-value = 0.3938) means that gender was not a significant determinant of FRT. The last examined variable was religion with 1 for Christian participants and 0 for non-Christian participants. The results with a positive beta indicated that being Christian increases the probability of being risk tolerant. A z-statistic of 4.442 (with a p-value = 0.000) was recorded for this variable indicating that it was significant at the 1% level of significance.

Table 3. Regression results

Variable	*Coefficient*	*Std. Error*	*z-Statistic*	*Prob.*	*Odd ratios*
C	-4.80221	0.64372	-7.46008	0.0000*	---
Level of education	0.17706	0.28624	0.61859	0.5362	1.193703
Financial education	1.97268	0.29609	6.66244	0.0000*	7.18992
Expenditure	0.00034	0.00015	2.24791	0.0246**	1.00034
Gender	0.24297	0.28491	0.85279	0.3938	1.27503
Religion	1.53259	0.34501	4.44215	0.0000*	4.630153

Note: *Significant at 1% level, **Significant at 5% level

In summary, the probability of being risk tolerant increases for Christian participants and participants with exposure to financial education and those with higher level of monthly expenditure. The odd ratios for exposure to financial education is about 7.19 meaning that participants with exposure to financial education are 7.19 times more likely to be risk tolerant as those without exposure to financial education. For participants' expenditure, an increase of 1 unit (rand in case) in student expenditure increases the odds of being risk tolerant by 1.00. As for religion, Christians are 4.63 times more likely to be risk tolerant as non-Christians.

Findings of this study are in line with previous studies (Bommier and Rochet, 2006; Charyton et al. 2013; Grable and Joo, 1997; Ryack, 2011; Strydom and Metherell, 2012; Wang and Hanna, 1997) which found that the FRT is explained by demographic variables such as gender, religion, income or expenditure and exposure to financial education. Furthermore, findings of this study are inline with those of Cooper et al. (2013) who found that individuals' level of education has not effect on risk tolerance. Contrary to prior research (Grable and Lytton, 1999; Strydom and Metherell, 2012) this study found non-significant relationship between FRT and both level of education and gender. This may therefore suggest that gender is not a key determinant of FRT among young participants such as students but it may be a significant determinant among older (non-students) participants.

5 Summary and conclusion

With a variety of studies having demonstrated a strong association between FRT and demographic factors such as education, gender, age and income, this paper built upon existing research by examining how financial education and level of education affect FRT in a sample of students at a South African university in the Gauteng province. Consistent with most past researches, this study found that expenditure, religion and type of education are important determinants of FRT. Contrary to prior research, this study found non-significant relationship between FRT and both level of education and gender. This study proves that in line with international findings, there exist a very important relationship between FRT and demographic variables. The implications of this study for financial companies is that they may need to spend more time with effective measures to market risky products to individuals without financial education. These findings can also help improve and lead to direct marketing strategies thus saving financial companies a lot of money. Investment managers and advisors can also take from this study an estimate of risk appetite that their clients may have given their various demographic factors and as such manage their funds better by keeping their investments within limits and buying financial products that are within their desired risk limits.

This study also provide a basis for individuals to understand their own financial drive and risk appetite before making any financial decisions, be it investments or savings decisions. The various limitations encountered during this research include the limited number of field of studies (humanities and commerce studies were investigated); and the gap in level of education as it was not broad enough (it was only limited to final year undergraduate and postgraduate students). Over and above the findings and limitations of this study, various opportunities for

further research in this field can be identified. More fields of study can be introduced such as Engineering, Medicine, Information Technology and Law so that the results can be more specific as to which group of students tolerate more financial risk.

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EXPLORING THE RELATIONSHIP BETWEEN SERVICE QUALITY AND CUSTOMER SATISFACTION IN POSTAL FINANCIAL SERVICES

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Abstract

Service quality and customer satisfaction are related and are important factors for the success of service providers be it in the public or the private sector. This study aims to examine the relationship between service quality and customer satisfaction in the Malawian public postal service, specifically its banking division. A cross-sectional, quantitative and descriptive study was undertaken and data was collected from 400 customers using the SERVPERF model. A non-probability sampling approach was adopted and respondents were selected using convenience sampling. Reliability of the study was tested using Cronbach alpha. Correlation tests were conducted using Spearman's rho. The results show that all the five service quality dimensions, viz. tangibles, reliability, empathy, assurance and responsiveness, are significantly and positively correlated. There was also a significant correlation between the service quality dimensions and overall service quality, customer satisfaction and customer loyalty.

Keywords: Service Quality, Customer Satisfaction, Post Office, Financial Services

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1 Introduction

In Malawi, access to quality financial services has been a subject of debate. The government of Malawi is championing financial inclusion which is aimed at driving the financial services sector to open up access to financial services to its citizens. However, the challenge has been to convince financial players such as banks to invest in brick and mortar in rural areas. There is a perception that such investment will not be profitable in the short term due to low economic activity and also the fact that cash generating activities in these areas are largely seasonal (Bill and Melinda Gates Foundation, 2010; Aggarwal & Klapper, 2013). Dupas, Green, Keats and Robinson (2012) observe that whilst the financial services industry is channelling its efforts into increasing accessibility, it pays little attention to improving the quality of financial services. The financial services industry in Malawi is small and under developed and the market is saturated with a few dominant institutions. The problems in the sector emanate from loopholes in the regulatory and technological regime, high capital outlay requirements and inadequate computerised systems (Stone, Grossman, Breul, Carpio & Cabelo, 2009). The Finscope study (Finmark Trust, 2013) shows that 19% of adults use banking services, 7% use legal or licensed financial services, 19% use informal services while 55% of the adult population are financially excluded. In addition, the statistics pertaining to financial services infrastructure shows that there are 0.93 branches per 1000 square kilometres, 1 branch per 100,000 adults, 2.5 ATMs per 1000 square kilometres and 8.52 point of sales per 100,000 adults. In terms of regional comparison in the Southern Africa Development Community (SADC) comprising 14 member states, Malawi is ranked number 13 on banking penetration which stands at 1 branch per 100,000 individuals.

The financial services sector in Malawi is currently attracting new entrants such as mobile phone companies who are technologically driven, customer centric and have come up with superior quality mobile money transfer solutions. Banks have also started to provide mobile banking facilities by sending mobile vans or pickup trucks to rural areas on designated days (Bill and Melinda Gates Foundation, 2010). The public postal operator in Malawi is one of the key financial services providers. According to Okibo & Shikanda (2011), the Post Office in Malawi enables the unbanked poor to have access to some form of financial services. However, the waiting period to access these services coupled with poor service delivery in general affect the quality and effectiveness

of the service (Finmark Trust, 2013). The problems of quality in the financial services sector largely emanate from the failure of financial services institutions to foster financial inclusion. Amidzic, Massara and Mialou (2014) observe that the three dimensions of financial inclusion are outreach, usage and quality of financial services. Limited physical access points in rural and urban areas affect quality and access to financial services. However, Suarez and Gonzalez (2010) found that a shortage of branches in rural areas is compounded by security concerns because financial services institutions do not want to operate in areas where they will be exposed to risks such as violent attacks.

The importance of service quality and customer satisfaction has been highlighted by various scholars. Ramachandran and Chidambaram (2012) have noted that successful businesses value quality of service and customer relationships to achieve competitiveness. They further observe that in financial services, customer satisfaction and business growth can only be achieved by offering superior quality service. Angelova & Zekiri (2011) believe that delivering superior service quality is an important business strategy if organisations are to be competitive and intend to generate profits. Bhatt & Sunil (2012) note that apart from driving profits, service quality helps service providers increase productivity through increased customer satisfaction. Research on service quality and customer satisfaction in financial services has largely been conducted in the mainstream banking sector with a dearth of research on postal financial services. As such, there is a gap in the literature as far as postal financial services quality is concerned. This paper therefore examines the relationship between service quality and customer satisfaction in the sector. It is envisaged that the findings of this study will assist the management of public postal operators in under-developed countries to better understand service quality as an antecedent to customer satisfaction. This paper is guided by the following hypotheses:

H1: There is no significant correlation amongst the service quality dimensions.

H2: There is no significant correlation between the service quality dimensions and overall service quality.

H3: There is no significant correlation between the service quality dimensions and customer satisfaction.

H4: There is no significant correlation between the service quality dimensions and customer loyalty.

2 Literature review

2.1 Perceived service quality

Rahaman, Abdullah & Rahman (2011) believe that service quality revolves around the management of business processes that address customer satisfaction and competitiveness in the market. On the other hand, Summers (2010) believes that quality means different things to different individuals and notes that quality can be defined based on three aspects viz. quality of design which signifies quality that addresses the specifications of a customer, quality of conformance which refers to the provision of quality based on the customer's perspective and quality of performance which means that the performance of the service must live up to the expectation of the customer. Culiberg & Rosjek (2010) advocate that perceived service quality is derived from the service environment, conceptualisation and delivery. Service conceptualisation means that quality of a service can be assessed based on features or attributes whereas service delivery meaning that the service experience or interaction between employees and customers or any other support mechanism has an impact on perceived service quality. Wirtz, Chew & Lovelock (2012) believe that the service environment is influential through shaping or undermining the service experience and this particular notion relates to ambience.

Gronroos (1984) posits that service quality hinges on perceived and expected service assessment. However, it is essential for service providers to understand the business environment in order to evaluate elements that are within and beyond the control of the organisation. In addition, quality has two dimensions, viz. technical and functional quality. Quality in technical terms is the outcome of a service interaction between the employee and the customer. Quality in functional terms is the approach used to render a service by the service provider and encompasses factors such as the conduct of employees both in terms of behaviour and job performance. What is important for service providers is to know that these two factors do not operate independent of each other. As such, a good outcome is not a sufficient measure of good quality if the process has certain flaws. Winer & Dhar (2011) identify a third dimension to quality, viz. image. Service quality is assessed based on the image of the organisation. The image of a service provider depends on the organisation's communication and its approach to addressing the needs of the customer. Customer expectation and image of the organisation are formed from the information customers get from the company or based on previous encounters and performance. Rao (2009) notes that customers may sometimes forgive organisations that enjoy a favourable image in the event of a minor mistake but if mistakes are repetitive, there is a danger of a service provider tarnishing its market image.

2.2 Measuring service quality

According to Solomon, Marshall & Stuart (2012), one of the methods used for measuring quality is the critical incident technique. This technique entails that organisations should assess service quality by scrutinising all service encounters where complaints

were registered and to come up with solutions. They further note that sometimes customers' expectations are far-fetched and cannot be met but the organisation can prevent dissatisfaction by explaining to the customer why they are unable to meet his or her request. Customers sometimes reduce their initial demands when a proper explanation is given. In addition to this, Parasuraman, Zeithaml & Berry (1988) proposed a "gaps model" for measuring service quality based on the following five gaps: Customer's expectations and management's perceptions gap, management's perceptions and service quality specifications gap, service quality specifications and service delivered gap, actual service delivered and external communication gap, and consumers' expectation and perception of service gap.

The SERVQUAL model has been criticised by a numbers of scholars and researchers. Martinez and Martinez (2010) suggest that service quality is multidimensional and cannot operate independently of its dimensions. The conceptualisation of the SERVQUAL model raises a lot of questions and according to Al-allak and Bekhet (2011), SERVQUAL has operational shortcomings and does not fit for all scenarios, countries and industries hence researchers should try to explore other tools for measuring quality that can be adapted to their study. Another school of thought is that it is not appropriate to measure expectation and perception together after a service experience. Palmer (2011) believes that the intention of measuring expectations is to understand what a customer thinks of a service before usage and not after consumption. However, this seems to be the practice among scholars and practitioners when measuring service quality. Cronin and Taylor (1992) proposed that the SERVPERF model be used as a tool to measure service quality based on perception only. Kalidos and Ravikumar (2014) reinforce this view by observing that the use of expectations in measuring service quality affects the reliability of quality evaluation and add that quality can also be measured based on service delivery or execution. SERVPERF is an excellent tool for evaluating quality of service. Vanpariya & Ganguly (2010) and Gica & Moisescu (2013) have noted that SERVPERF better explains the service quality variations than SERVQUAL.

2.3 Customer satisfaction

In an environment of intense competition, several organisations have realised the importance of customer satisfaction. Customer satisfaction is regarded as a tool for organisation viability, competitiveness and for developing a sustainable bond with customers (Hanif, Hafeez & Riaz, 2010, Gupta & Gupta, 2012). Customer satisfaction is complex and has been understood and explained differently by researchers and as such, is deemed to be subjective (Santouridis & Trivellas, 2010). Customer satisfaction is based on the disconfirmation experience. This notion compares service performance with customer expectations. Consequently, a mismatch between perception and expectation will result in either dissatisfaction or satisfaction (Johnston, Clark & Shulver, 2012). When customer expectation and perception meet, confirmation of initial expectation takes place whereas when the two do not meet, there is disconfirmation of expectations. Negative disconfirmation happens when perception is low compared to expectation and this scenario results in dissatisfaction and bad publicity. Positive disconfirmation takes place when perception is higher than expectation and this scenario results in contentment and favourable publicity (Bateson & Hoffman, 2011).

Customer satisfaction is an after-purchase phenomenon and is induced by the benefit derived from service performance. The implication is that customers who are dissatisfied defect to competitors and when they have no choice, they vent their anger and express their dissatisfaction (Harris, 2013). Furthermore, dissatisfied customers are bad messengers of the business and can affect the image of the organisation if not handled properly. The reality is that dissatisfied customers are mercenary customers and have ''ripple effects'' because they communicate to other customers about their poor service experience (Timm, 2011). In order to maintain satisfaction, organisations should continuously scrutinise elements that contribute to satisfaction or dissatisfaction and work towards improving these elements so that they are able to address customer needs (Dukic & Kijevcanin, 2012).

Customer satisfaction can be used as a tool for competitiveness and differentiating services from competition. Service providers with high satisfaction ratings do not experience competitive pressure in respect of price because customers are ready to pay more for a company that meets their needs than to defect to a company offering lower price because the risk of such action is not known (Bateson & Hoffman, 2011). It is therefore essential for financial services institutions to address areas and elements that affect customer satisfaction because the business environment has become increasingly competitive (Fararah & Al-Swid, 2013). Any service provider who has not made customer satisfaction as an overriding objective or focal point of the business is operating on the sympathy of customers. If businesses are to operate without a base of loyal and satisfied customers, other service providers will move in quickly to meet their needs. Consequently, the customer base will shrink as a result of rising customer attrition. In today's highly competitive world, offering personalised and differentiated services can be critical to an organisation such as the Post Office's success (Gupta & Gupta, 2012).

Organisations that provide good customer service are progressing, whereas poor service providers fumble and collapse. The reality is that most

organisations have strategies aimed at improving customer service. However, despite having these strategies, customer satisfaction levels remain persistently low, having a negative impact on the business (Timm, 2011). The real test for service providers is to know that provision of excellent customer service is a continuous struggle and never ends. Performance by employees must be frequently examined. It is therefore the responsibility of management to frequently evaluate customer satisfaction. Customers must be given a chance to point out areas that need improvement (Harris, 2013).

2.4 The relationship between service quality and customer satisfaction

There is a thin line of distinction between the concepts of service quality and customer satisfaction as both expectation and perception are used in determining quality of services and satisfaction of customers (Bateson & Hoffman, 2011). Customer satisfaction can be attained if service quality is good or high and vice versa. Munusamy, Chelliah & Mun (2010) believe that changes in quality can affect customer satisfaction regardless of the frequency the customer has patronised a service. As such, variations in service quality should be a matter of concern for businesses. When service quality meets the expectation of the customer, it reinforces the trust the customer has in the product, and when service quality fails to meet customer expectation, the customer is dissatisfied and may resort to trying competing brands (Malik, Ghafor & Iqbal, 2012).

Studies have shown a relationship between service quality and customer satisfaction. For instance, in a study of the banking industry in India, using SERVPERF, it was found that the attributes of quality have a positive association with satisfaction (Anand & Selvaraj, 2012). In Bangladesh, Siddiqi (2011) examined the association between the service quality dimensions, satisfaction and loyalty in the banking industry. The study findings show that all five dimensions of quality (tangibles, responsiveness, assurance, empathy and reliability) have a positive association with satisfaction. Furthermore, the banks performed very well on empathy and performed least well on tangibles. Similarly, Mukhtar, Iman, Ashiq, Amjad & Nasar (2014) in their study in Pakistan noted a positive association between quality and satisfaction among consumers in the banking industry. However, tangibility had a stronger impact compared to other dimensions whereas responsiveness ranked low in terms of correlation with customer satisfaction A study on quality and satisfaction in the banking sector in Pakistan found a significant relationship between service quality dimensions that were evaluated on satisfaction. Siddiquei, Awan and Bukhari (2012) contend that despite finding a positive relationship between quality and satisfaction with respect to services, it is consistent execution of quality that leads to more satisfied customers. Offering quality service alone on a single encounter and failure to replicate the same in subsequent encounters is a recipe for customer dissatisfaction and business failure.

3 Methodology

The choice of research design for this study is descriptive because the objective is to measure and ascertain the relationships between variables (Hair, Celsi, Ortinau and Bush, 2013). The importance of descriptive research is that it underlines the magnitude of general problems and helps to trigger action that provides the foundation for policy intervention (De Vaus, 2014). In addition to being descriptive, the study was quantitative and cross-sectional in nature. According to Hair et al. (2013), quantitative studies are descriptive because numbers and statistics are often used to condense demographics, attitudes and behaviours. The target population of this study were all financial service customers in the Post Office. Data was collected from 400 customers using convenience sampling. In this study, the SERVPERF questionnaire was used to elicit responses from the study sample. Parasuraman et al., (1985) developed the service quality model (SERVQUAL) which is an instrument for assesing quality based on five dminensions, viz., tangibles, responsiveness, assurance, reliability and empathy. The SERVQUAL model was modified by Cronin and Taylor (1992) into a perfomance instrument known as SERVPERF. Several studies have used the 22 item instrument (SERVPERF) to evaluate service quality (Culiberg and Rojsek, 2010; Mwatsika, 2014; Ushantha, Wijerante and Samantha, 2014). A five-point Likert scale (strongly disagree – strongly agree) was used. Correlation tests were conducted to analyse data using Spearmans' rho by means of the SPSS statistical package. Spearman rho is a non-parametric test that was used to ascertain the relationship or association between variables. Wegner (2000) suggests that in order to determine correlation between two ordinal scale (ranked) random variables, spearman's rank correlations can be used. Reliability of the study was tested using Cronbach Alpha.

4 Results

4.1 Test for normality

The test for normality was conducted to ascertain if the data follows a normal distribution and whether parametric tests can be done. The findings reveal that the dimensions do not follow a normal distribution. Zikmund, Babin, Carr & Griffin (2010) suggest that non-parametric statistics are suitable if the dimensions or data do not follow a known or normal distribution.

4.2 Reliability

The overall reliability score for the study is 0.979 and this reflects a very high degree of inter-item consistency. According to Sekaran and Bougie (2013), ''reliability scores less than 0.60 are considered poor, those in the 0.70 range acceptable, and those over 0.80 good'

4.3 Measures of central tendency

Measure of central tendency such as mean are often used in research to indicate the suitability of responses to a question but also to compare variables whereas measures of dispersion such as standard deviation highlight how data is spread around measures of central tendency (Wiid & Diggines, 2013). Table 1 reflects the mean and standard deviation (SD) of the service quality dimensions.

The mean score for the tangibles dimension was 3.588, implying that customers of the Post Office rated this particular dimension highly and were satisfied with the physical facilities, dressing of employees and the materials were visually appealing. This was the highest ranked dimension. Armstrong and Kotler (2011) identify evidence management as critical to service quality. Service providers must give customers organised and honest evidence of their capabilities. The empathy dimension was ranked second highest with a mean score of 3.450 suggesting that customers believed that they were well assisted, given the necessary attention and have confidence in the public postal service.

Table 1. Mean and standard deviation of the service quality dimensions

	n	*Min.*	*Max.*	*Mean*	*SD*
Tangibles	400	1.00	5.00	3.588	.907
Reliability	400	1.00	5.00	3.428	1.100
Empathy	400	1.00	5.00	3.450	1.141
Assurance	400	1.00	5.00	3.411	1.127
Responsiveness	400	1.00	5.00	3.398	1.170

The reliability dimension was ranked third with a mean score of 3.428. Customers of the Post Office ranked this particular dimension generally well and were satisfied with the delivery of services as per the company's promises. Customers expect service providers to stick to their promises because if the organisation does not provide the core service customers think they are buying, it will be seen as failing them (Berndt & Tait, 2012). The assurance dimension was ranked fourth with a mean score of 3.412, also suggesting that there was overall satisfaction that the conduct of employees generally instilled confidence and trust among customers. This can enhance customers' perception of service quality and also lead to a positive image of the organisation (Bose & Gupta, 2013). Although the responsiveness dimension was the lowest ranked, the rating of 3.398 suggested that respondents were of the perception that the Post Office generally understood their specific needs and gave them personalised service or attention. A study on service quality in the Vietnam banking sector revealed that service quality dimensions mean scores were also generally satisfactory. In addition, the responsiveness dimension also registered the lowest mean score (Dinh & Pickler, 2012).

The standard deviations of the service quality dimensions range from 0.907 to 1.170. In terms of responses, variability was significant as demonstrated by the lowest response (minimum) which was 1 and the highest response (maximum) which was 5 thereby signifying that opinions ranged across the response categories by participants (Burns & Bush, 2014).

4.4 Correlation amongst the service quality dimensions

It emerged that all the service quality dimensions have varying degrees of correlation. The correlation coefficients range from 0.528 to 0.844. As shown in Table 2, all correlations between the dimensions of service quality are significant at the 0.01 level (2-tailed). There is a significant correlation between tangibles and: reliability ($r = .634$; $p < 0.01$), empathy ($r = .528$; $p < 0.01$), assurance ($r = .560$; $p < 0.01$) and responsiveness ($r = .554$; $p < 0.01$).

The results also indicate that reliability has a positive and significant correlation with: empathy ($r=0.772$, $p<0.01$), assurance ($r=0.740$, $p<0.01$), responsiveness ($r=0.737$, $p<0.01$) and tangibles ($r=0.634$, $p<0.01$), i.e. reliability has the strongest correlation with empathy and the weakest with tangibles.

As depicted in Table 2, empathy has a positive and significant correlation with: reliability ($r=0.772$, $p<0.01$) assurance ($r=0.737$, $p<0.01$), responsiveness ($r=0.728$, $p<0.01$), and tangibles ($r=0.528$; $p<0.01$). The strongest correlation is between empathy and reliability and the weakest is with tangibles. The assurance dimension has a positive and significant correlation with: responsiveness ($r=0.844$, $p<0.01$), reliability ($r=0.740$, $p<0.01$), empathy ($r=0.737$, $p<0.01$) and tangibles ($r=0.560$, $p<0.01$). It emerges that assurance has the strongest correlation with responsiveness and the weakest with tangibles.

Table 2. Correlation amongst the service quality dimensions

	Spearman's rho (r)			*Assurance*	*Responsiveness*
	Tangibles	*Reliability*	*Empathy*		
Tangibles	1.000	.634**	.528**	.560**	.554**
Reliability	.634**	1.000	.772**	.740**	.737**
Empathy	.528**	.772**	1.000	.737**	.728**
Assurance	.560**	.740**	.737**	1.000	.844**
Responsiveness	.554**	.737**	.728**	.844**	1.000

Note: ** $p \leq 0.01$

The findings further indicate that responsiveness has a positive and significant correlation with: assurance (r=0.844, p<0.01) reliability (r=0.737, p<0.01), empathy (r=0.728, p<0.01) and tangibles (r=0.554, p<0.01). The correlation between responsiveness and assurance is the strongest whereas the correlation between responsiveness and tangibles is the weakest. This study confirms the findings of a study in the Vietnam banking sector which found that there was a significant and positive correlation between the service quality dimensions (Dinh & Pickler, 2012).

Based on the results, the null hypothesis is not accepted. It can therefore be concluded that there is a significant correlation amongst the service quality dimensions.

4.5 Correlation between the service quality dimensions and overall service quality, customer satisfaction and customer loyalty

4.5.1 The service quality dimensions and overall service quality

The results, as presented in Table 3, indicate that all the service quality dimensions were significantly correlated to overall service quality with tangibles being moderately correlated (r=.474) and responsiveness being very strongly correlated to overall service quality (r=.804). The null hypothesis is therefore not accepted. It can be concluded that there is a significant correlation between the service quality dimensions and overall service quality.

Table 3. Correlation between the service quality dimensions and overall service quality, customer satisfaction and customer loyalty

	Spearman's rho (r)			*Assurance*	*Responsiveness*
	Tangibles	*Reliability*	*Empathy*		
Overall service quality	.474**	.689**	.712**	.745**	.804**
Customer satisfaction	.444**	.645**	.679**	.739**	.786**
Customer loyalty	.453**	.657**	.688**	.761**	.782**

Note: $P \leq 0.01$

4.5.2 The service quality dimensions and customer satisfaction

As depicted in Table 3, the tangibles dimension exhibited a weak correlation (r=.444) and responsiveness, a very strong correlation (r=.786) with customer satisfaction. All four service quality dimensions are significantly correlated to customer satisfaction. This is consistent with the findings of Ravichandran, Man, Kumar & Prabhakaran (2010) in a study on service quality and satisfaction at private banks of India, that found a positive correlation of all the five service quality attributes on customer satisfaction. It also emerged that responsiveness had the strongest correlation with customer satisfaction.

Based on the results, the null hypothesis is not accepted. It can therefore be concluded that there is a significant correlation between the service quality dimensions and customer satisfaction.

4.5.3 The service quality dimensions and customer loyalty

It emerged that the tangibles dimension exhibited a moderate correlation (r=.453) and responsiveness, a very strong correlation (r=.782) with customer satisfaction. All four service quality dimensions are significantly correlated to customer satisfaction. The null hypothesis is therefore not accepted. It can be concluded that there is a significant correlation between the service quality dimensions and customer loyalty.

5 Conclusion

The study examined the relationship between service quality dimensions (tangibles, reliability, empathy, assurance and responsiveness), overall service quality, customer satisfaction and customer loyalty. The tangibles dimension reflected the highest mean score whereas the responsiveness dimension reflected the

lowest mean score. It emerged that there is a significant correlation among the five service quality dimensions. The findings also indicate a significant correlation between the service quality dimensions and overall service quality, customer satisfaction and customer loyalty. The results highlight the need to foster the spirit of continuous improvement in all aspects of the business. The fact that a dimension has been rated highly in the present study does not guarantee future satisfaction if efforts are not made to improve on service quality, by focusing on the dimensions. As such, improvements and monitoring of the dimensions should be ongoing. In addition, the assessment of service quality dimensions and their impact on customer satisfaction was significant and responsiveness had the strongest correlation with customer satisfaction. This study provides the management of the Post Office with an opportunity to review its business strategy and channel resources appropriately to areas that need intervention, particularly the responsiveness dimension. In addition, customer service employees should be equipped with tools to be able to understand customer specific needs, give customers personalised attention and have their welfare at heart. Furthermore, In order to achieve customer satisfaction, management of the Post Office should inculcate a service quality culture across the organisation. The service quality objective should be explicit and communicated to every employee and the responsibility not left to the front desk alone. The management of the Post Office should devise key performance indicators and communicate them to all members of staff in order to enhance reliability of the service. These standards should serve as a reminder to members of staff of the minimum tolerable deviations and the framework within which they are expected to deliver service quality to customers. Lastly, customer feedback should be collected on regular basis to evaluate customer satisfaction and the performance of service quality predictors.

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THE CREDIT CONSUMPTION PATTERN IN SOUTH AFRICA: A TREND ANALYSIS

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Abstract

While the developed countries witnessed a significant contraction in credit consumption in response to the financial crisis in 2008, South Africa's household debt continues to be on the increase. This article is based on empirical research on the relationship between household debt and disposable income, net wealth, interest rates and inflation for the period between 1975 and 2013. Using regression analyses, the study examines the linkage between household debt and consumption spending in South Africa to capture the short-run and long-run dynamics. The results show that there is a significant relationship between household debt and disposable income, net wealth and inflation. Further tests indicate that there is a bidirectional causality running from economic growth to household debt and vice versa. However, it is revealed that there is no direct relationship between household debt and lending rates.

Keywords: Credit Consumption, Household Debt, Disposable Income, Economic Growth, South Africa

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1 Introduction

The global credit crunch of 2008-2009 that originated from the subprime mortgage imbroglio in the United States had wide-reaching socioeconomic and political implications that affected a host of countries globally. However, it appears that South Africa did not just survive but emerged relatively unscathed, being insulated from the worst of the financial contagion by the vestiges of the exchange controls that were introduced during the apartheid era to prevent capital flight. In addition, inflationary pressures that were caused by the commodities boom had already caused South African interest rates to rise. This process reduced demand for credit before the global crisis hit. Further, the tighter bank lending requirements imposed after the implementation of the Financial Intelligence Centre Act (FICA) of 2001 and the National Credit Act (NCA) of 2005 also helped to curb reckless lending practices that reduced the number of borrowers who were over-leveraged. Despite these regulatory measures in place, credit consumption is believed to have increased prior to- and post the global financial crisis period (Chipeta and Mbululu, 2012). In many countries, consumption accounts for more than half of GDP (Gerlach-Kristen, 2013). Consumption directly affects households' living standards and thus is an important measure of wealth (O'Toole, O'Connell and Gerlach-Kristen, 2013).

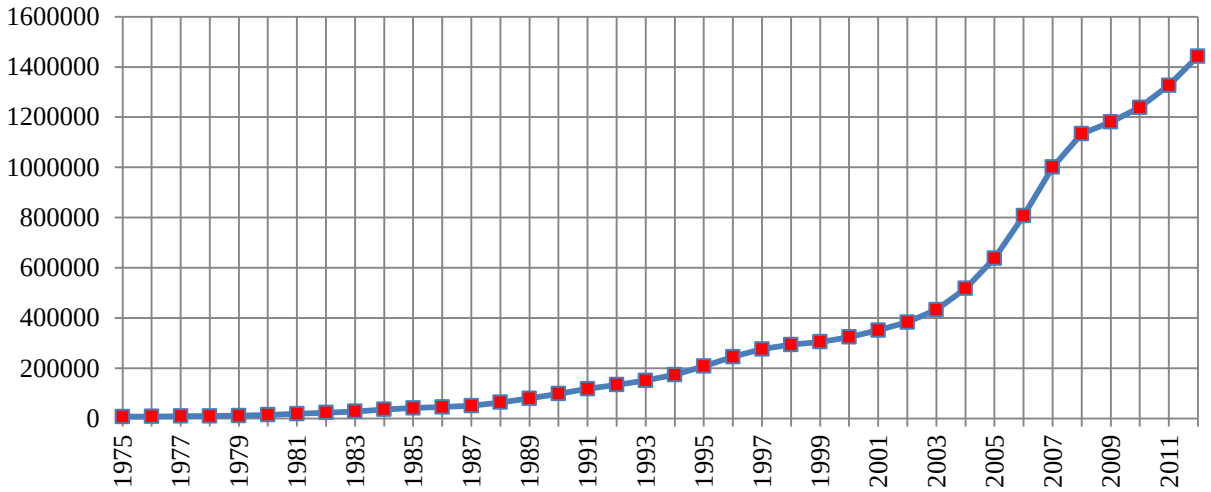
The aggregate household debt in South Africa has continued to increase over the past two decades especially among the rising black middle class (Cronje and Roux, 2010). As such, the process of credit provision has been under the spotlight for some time. Households use credit to fund purchases of durable consumer goods and assets, and they use it to bridge temporary drops in income. The total household debt for South Africa between 1975 and 2012 is shown in the Figure1 below.

The graph shows a steady and gradual increase of total household debt from 1975 to 1997, after which it stagnated until about 2004. The total household debt continued to rise sharply between 2005 and 2012. However, the developed countries have experienced a drop in household consumption post the global financial crisis (Žnuderl, O'Toole and O'Connell, 2012) while in South Africa, household consumption continues to be on the increase.

Inadequate regulation of the financial sector in many countries, including the United States, resulted in a lending explosion that allowed household debt to rise to unprecedented levels. Abundant credit and inadequate regulation led to the creation of products such as subprime mortgages which were targeted at vulnerable households which could only afford to repay their loans on the assumption that rapid house price and income growth would continue. The potential macroeconomic consequences of household borrowing also attracted much attention in the case of Spanish households, whose indebtedness has more than doubled in recent years. The total amount owed rose from around 46 to over 92 percent of annual income between 1995 and 2003 (Martinez-Carrascal

& del Rio, 2004). In the United States, it is believed that credit consumption has increased by more than 600% over the past two decades (Ekici and Dunn, 2010). Furthermore, in 2011 the total UK consumer spending was £851 billion out of a total gross domestic product (GDP) level of £1437 billion. Thus, credit consumption is by far the biggest single component of aggregate demand in the UK.

Figure 1. Total household debt for South Africa



According to literature, an economic cycle, particularly its turning points, plays an important role in the emergence of financial crises. An excessive debt accumulated in the foregoing period might become burdening for the borrower if market conditions reverse. In South Africa, the period prior to the financial crisis was characterised by rapid growth in credit extension that posed a risk to inflation target (Chipeta and Mbululu, 2012). The South African Reserve Bank then gradually raised the repo rate from 7% in 2005 to 12% by mid-2008 in an effort to curb excess credit (National Treasury, 2011). Then, as the financial crisis unfolded, the Reserve Bank reduced rates rapidly thereby cushioning the domestic economy from adverse global financial conditions.

The socio-economic base of credit usage has expanded tremendously over the last decade. This recent increase in the use of credit has occurred in tandem with the increase in income inequality. Different types of credit with varying characteristics have become available and as such, lower and middle-class households have increasingly turned to these financing tools to enjoy consumption opportunities that would not have been available otherwise (Krugman, 2007). There has been generally an increase in the number of credit facilities used in South Africa. (National Credit Regulator, 2012).These facilities include mortgages, collateralized credit such as vehicle finance and unsecured forms of debt such as credit cards, bank overdrafts, store cards and unsecured loans. It is interesting to also note that unsecured lending has seen some of the most spectacular growth rates since the implementation of the NCA with loans growing by more than 53% between 2010 and 2011(NCR, 2012). Unsecured credit transactions include all transactions in respect of which the borrower does not have any security. Unsecured borrowing has risen faster than household disposable income, raising concern among policy makers (Marcus, 2012).

According to Rajan and Zingles, (2003) increasing borrowing to finance consumption is seen as a stimulating factor for the economy. However there is concern that high levels of debt may prevent spending in the future and hence in the long run slow down economic growth. A high debt level therefore implies a higher debt service burden and restricts the ability of households to gain access to additional external funds. A high level of debt raises the households' vulnerability, reducing their ability to adjust to unexpected shock to their income, their assets or interest rates (Martinez-Carrascal and del Rio, 2004). Unexpected shocks may consequently lead to constrained household spending decisions. Against this backdrop, it is important to analyse the trend in household consumption, and its possible consequences for the economy's macroeconomic and financial stability (Nieto, 2007). Therefore, in the light of the contraction in GDP experienced during the crisis globally, movements in consumption represent a key economic indicator and it is important to understand their determinants. This paper examines these movements in South Africa between 1975 and 2013.

The approach used for the research on which the article reports differ from other approaches in three main respects. Firstly, the focus is mainly on the nature of the relationship between household debt and its determinants such as disposable income, household net wealth and macro-economic factors such as lending rates and inflation. The analysis includes the cointegration and causality relationships. Secondly, the author considers South Africa over a more recent

period, thus providing more appropriate and contemporary empirical evidence from emerging markets. Lastly, empirical analysis does not only focus on the nature of the relationship of variables in question but also looks at the implications of this interconnectedness in the context of household indebtedness and its impact on economic growth.

The aim of the paper is to investigate the nature of the relationship between household debt and some of the related macroeconomic determinants. The evidence was based on total household debt, household disposable income, household net wealth, household savings, gross domestic product per capita, interest rates and inflation during the period 1975 to 2013. The Johansen Cointegrating approach and Granger causality tests were utilized in an attempt to find the nexus between household debt and its determinants.

Financial intermediaries, especially banks, grant the household external funds, and consequently, the strength of the household financial position also affects the stability of the financial system. There is not much academic evidence of the impact of a relatively high level of indebtedness on consumption in South Africa. Given that household consumption expenditure accounts for almost 60% of GDP in South Africa, it is important to clarify the drivers of consumption as well as the potential factors which may hinder its growth. Understanding the determinants of credit consumption has policy implications at both micro and macro- levels. At the micro level the determinants of credit constraints help shed light on the credit granting process. At the macro level, credit constraints have been cited to explain the observed relationship between current consumption and income growth, and the rejection of the Permanent Income Hypothesis (Hoosain, 2012). Notwithstanding that the relationship between household debt and consumption spending has received much attention from academics; less focus has been given to the developing economies. The findings of this study may be useful to policy makers as this will help them make informed decisions on what aspects of household indebtedness to emphasize on.

The rest of the paper is organized as follows: section two constitutes a brief discussion of the relevant literature as applied in this paper. Section three discusses the research methodology by providing an overview of the data and variables used. Section four presents the empirical findings and finally, the discussion and conclusion are presented in section five.

2 Literature review

As is the case in many other economies, consumption may be placed as the epicentre of aggregate demand and therefore might play an important role in the art of economic analysis. According to Saad (2011), modern consumption revolves around three models namely: Keynes' (1936) absolute income hypothesis, Duesenberry's (1948) theory of consumption, Friedman's (1957) permanent income hypothesis (PIH) and Modigliani's (1975) life cycle hypothesis (LCH). Keynesian theory maintains that current household consumption patterns are a function of the current disposable income in a household. However, the theory is criticised on the grounds that it relates to the use of current as opposed to future potential income. As such consumption is based on the "fundamental psychological law" which states that on average people are likely to increase their consumption as income increases. Nevertheless, Keynes (1936) postulates that consumption patterns at the time were based on current income. However, today household consumption is believed to be dependent on future income. The central idea of these models is that households make their consumption choices on the basis of their wealth, current disposable income and future income expectations so as to guarantee a uniform level of consumption over their lifetimes.

According to the life cycle hypothesis (LCH) theory, Modigliani (1975) posits that consumption by a sensible consumer depends on available resources in conjunction with the allocation of income over a longer period of time. According to Dwivedi (2010) this enhances the principle of maximisation of utility. Modigliani's contribution to life cycle income hypothesis revolves around the fact that consumption is dependent on current income and net wealth. Modigliani asserts that households consider their entire life span when making decisions on how to spend (Saad, 2011). It is further argued that consumption is dependent on the position of the individual in the life cycle with the aim of the smoothening consumption over a life time in which income fluctuates substantially depending on age.

According to Duesenberry's (1948) consumption theory, the level of consumption is dependent upon the income received, but clarifies that this would be in relation to households with which it identified itself with. Duesenberry (1948) further suggests that consumption in relation to income earning could be categorised as "sticky downwards" since households tend to adjust their spending patterns upwards when income increases but are reluctant to do so when the contrary happens. The author refers to this as the "ratchet effect". Furthermore, there are transitory purchases made by households which do not require immediate consumption yet are attractive for various reasons such as discounted prices (Thornley, 2008). Purchases made from transitory cash include bonuses or winnings from lottery tickets or gambling. According to Saad (2011) Friedman's (1957) PIH manifests itself in a combination of both permanent income hypothesis as well as transitory income. In keeping with the insights of the relative income hypothesis (Duesenberry, 1949), households will seek to maintain consumption relative to standards

achieved in the past and contemporary standards established by others (Kim, Setterfield and Mei, 2014)

Thus as consumers age, their consumption growth is likely to be negatively affected by their overall debt. Using a calibrated partial equilibrium overlapping growth (OLG) model, Tudela and Young (2005) investigated the relationship between household debt and consumption income in the United Kingdom (UK). The results indicate that variables such as income growth expectations, wealth, real interest rates and the removal of credit constraints play a significant role in explaining the substantial rise in household debt in the 1990s. Magri (2002) suggests that rises in net wealth are tracked by falls in the demand for consumer credit as spending can be financed autonomously. Households with intermediate net wealth levels are more likely to participate in the consumer credit market due to increased spending patterns that characterise improvements in life style.

However, Bayar and Mc Morrow (1999) also argue that other than current disposable income, other influences such as wealth can impact on current levels of consumer spending. The link between aggregate household debt and consumption has been investigated. Barchetta and Gerlach (1997) and Ludvigson (1999) found that a rise in the growth of household debt raises the growth of consumption. Bacchetta and Gerlach (1997) reported a significant impact of credit aggregates on consumption in the United States, Canada, United Kingdom, Japan and France, indicating liquidity constraints. The authors argue that credit tightness (difference between banks' borrowing and lending rates), appears to be negatively related to the growth of consumption. Ludvigson (1999) analysed the implications for the excess sensitivity of changes in the fraction of income that can be borrowed by households. Differently from other studies, the author considered a random variation in the credit ceilings, a key feature in order to explain the findings; consumption growth is not just correlated with predictable income growth, but also with predictable consumer credit growth. However, Johnson (2007) establishes that a rise in the growth of revolving consumer debt reduces the growth of consumption.

Using a Vector Error Correction Model (VECM) where variables such as labour income, wealth and nominal interest rates were included, Martinez-Carrascal and del Rio (2004) investigated the impact of household borrowing and consumption in Spain. The authors established that The results indicate that both consumption and lending are positively related to both types of wealth and labour income in the long run, and negatively related to interest rates.

Chipeta and Mbululu (2012) examined the effects of the National Credit Act (2007) and the global financial crisis on domestic extension in South Africa. The authors establish a general increase in the consumer credit provision in the period subsequent to the implementation of the NCA. There was a general increase in the use of credit cards, and other conventional loans. Apart from the three models discussed above, the social exchange theory (SET) indicates there are other factors that cause individuals to incur debt (Cropanzano and Mitchell, 2005). Consumers are influenced by their social status, which indirectly determine their financial decision-making. Some of these factors are discussed in the following paragraphs.

From a theoretical perspective, changes in credit obtained by households are linked to both supply- and demand-side factors. Rajan and Zingales (2003) suggest that household expenditure generally stimulates economic growth, and is therefore seen as an important driver of growth. Household expenditure is sturdily influenced by the current and anticipated disposable income of households, the asset holdings of households and changes in the market value of their assets, the cost of credit, the age distribution of consumers and regulatory measures. Prinsloo (2002) further contends that the spending and saving behaviour of household is determined by factors such as social and material needs, taste, fashion, cultural and traditional beliefs, cost and standard of living, current debt to income ratio and the possibility of a future increase in aggregate income. Overall household consumption expenditure is therefore determined by consumer access to credit (O'Toole, O'Connell and Gerlach-Kristen, 2013) and the debt to income ratio.

Underlying these credit consumption trends have been flexible housing markets and favourable credit conditions. These developments have been reinforced by financial liberalisation and innovation which have eased the access to credit of borrowers who had previously been denied. According to Aron and Muellbauer (2013), credit liberalisation affects consumption in three ways. Firstly, it reduces the credit constraints on households engaging in smoothing consumption when they expect significant income growth. Secondly, financing constraints on first-time home buyers are relaxed and finally it increases the availability of collateral-backed loans for households already in possession of collateral.

Muellbauer (2007) finds that housing wealth effect occurs with financial market liberalisation which provides a collateral channel in response to information asymmetries between borrowers and lenders. He finds that housing wealth effect is twice as large in the United States as the UK. Using regression analysis, Hoosain (2012) examined the relationship between consumer credit and consumption spending in South Africa. The findings indicate a significant positive relationship between household debt and consumption spending. Other factors that influence an individual's propensity to consume or save depending on the importance attached to current as opposed to future income (Girouard, Kennedy and Andre, 2007). Some of these factors include the time horizon, the preference effects and capital market imperfections.

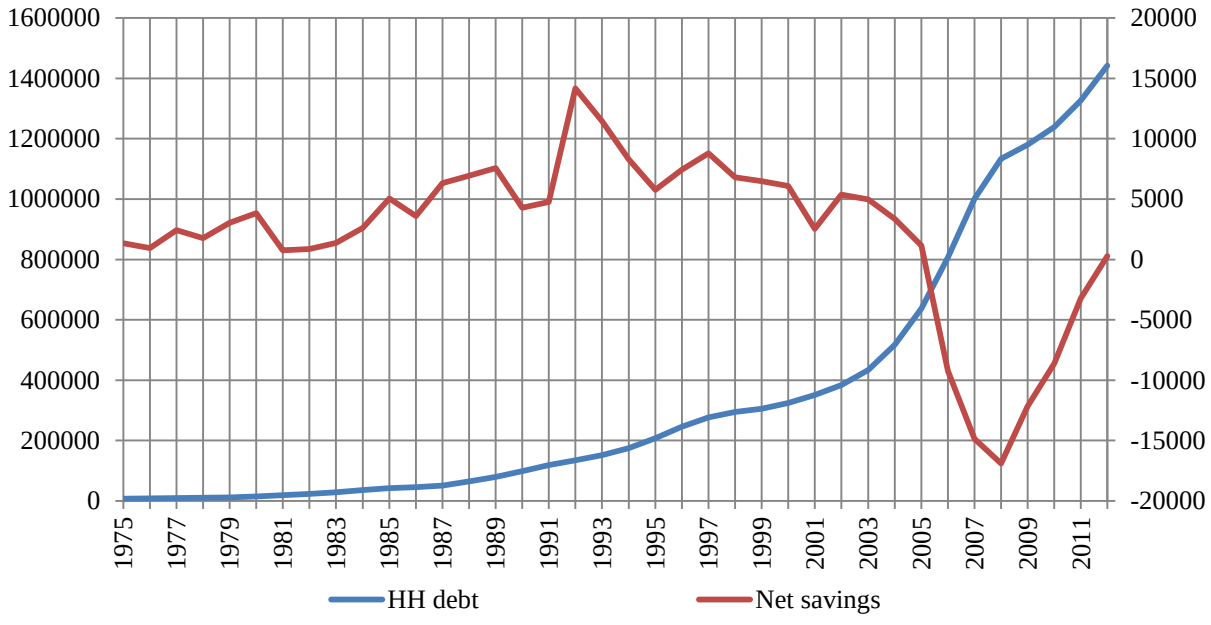
An individual consumer needs to determine whether he has a short- or long-term planning horizon in terms of consumption. The time preference effects take into account the impact of interest rate on consumption and savings. Deacon (1991) put forward a model relating consumption growth to expected income growth. The author established that consumers who expect their income to grow in future tend to increase their current consumption. In addition to that Ekici (2010) found that income expenditures of individual consumers are positively related to their borrowing. It has therefore been argued that it is income expectations rather than debt that drive consumptions decisions (Maki, 2000). For example, in the 1970s the fairly low cost of credit in South Africa during the cyclical upswings in 1973/74 and 1979/81 led to increases in the demand for consumer credit.

Interest rates tend to reduce aggregate consumption because of the wealth declines associated with the heavier discounting of future income (Bayar and McMorrow, 2007; Moroke, 2014). An increase in interest rates gives rise to rising inflation which makes it difficult for consumers to repay their debts. Higher inflation increases the growth of household consumption. The reduction in interest rates both in nominal and real terms, contribute to a significant easing of liquidity constraints on households. In a study of South African households between 1980 and 2005, Aron, Muellbauer and Prinsloo (2007) establish a positive correlation between the real interest rate on borrowing and the debt-to-income ratio. A reduction in interest rate between 2003 and 2005 saw a reduction of the debt service ratio by 6% in 2004. As expected, the amount of credit accessed by all sectors soared significantly until 2006 before reverting to the same low levels that existed prior to 2004 after the interest rate shock.

Thus changes in interest rates have an adverse bearing on the demand for credit/loans. On one hand, there is bound to be a positive effect on the volume of loanable funds provided that a rise in interest rate increases the net income attained by credit institutions. But on the other hand, a credit rationing situation may arise, as indicated by Stiglitz and Weiss (1981), where the financial sector might perceive greater risks associated with an increase in interest rates. Taken as a whole, interest rate increases would appear to reduce aggregate consumption because of the wealth declines associated with heavier discounting of future income.

South Africa, in contrast to many other developing countries, has a culture of debt rather than one of saving (Cronje and Roux, 2010) as shown in Figure 2. Household net savings graph has been positive but fluctuating until about 2005 when it took a dip into the negative, with the lowest net savings being recorded in 2008 which coincided with the global financial crisis. Although on the increase again, household net savings is still way below the total household debt level necessitating the need for households to continue to thrive on credit.

Figure 2. Household debt and Net savings



A number of other factors have been shown to be influencing the high credit consumption in South Africa. These factors include demographic trends, ageing population, urbanisation and the impact of regulatory framework such as the National Credit Act (NCA). South Africa is characterised by high population growth rate which gives rise to high dependency ratios. For example, the ageing population in South Africa has given rise to an increase in the old age dependency ratio, which has contributed to the increase in debt (Cronje and Roux, 2010). High urbanisation trends also impact positively on

consumption as more and more households join the credit market.

The South African economy is characterised by income inequality where the greater proportion on the population has very little income. This segment of the population is mainly concerned about immediate survival and therefore shows a high propensity to consume. South Africa has experienced considerable credit market liberalisation and rising consumption and debt-to-income ratios. Financial liberalisation involved the deregulation of institutions coupled with interest rate liberalisation, elimination of credit ceilings and the increased extension of credit to individuals. Cronje and Roux (2010), argue that credit liberalisation has three effects on consumption. Firstly it reduces the credit constraints on households engaging in smoothing consumption when they expect significant income growth. Secondly it reduces deposits required of first-time house buyers. Finally it increases the availability of collateral-backed loans for households already in possession of collateral (Aron and Muellbauer, 2013). Cronje and Roux (2010), posit that financial liberalisation often leads to lower interest rates and consequently increased consumer spending. Free access to credit made possible by the NCA has afforded households the opportunity to maintain higher levels of consumption than would otherwise have been impossible (Chipeta and Mbululu, 2012).

The key episodes of credit market liberalisation in South Africa that explain the trends in credit consumption levels are discussed below. Following the de Cock Commission reports (de Cock, 1978, 1985) the government initiated liberalisation by advocating for a more market-oriented monetary policy. Prior to 1994 a lot of black South Africans were not able to get credit due to the laws of apartheid. After the democratic elections in 1994 more black South Africans joined the formal job market and started to gain access to credit that was previously rationed on racial lines (Aron and Muellbauer, 2013). Following the international financial crisis of 1997-1998, tougher capital requirements were imposed on banks in 1998 in an effort to curb excessive mortgage lending in banks. In May 2002, Saambou Bank was placed under curatorship and bank supervision was subsequently tightened. In 2005 the National Credit Regulator was created and the National Credit Act came into effect in an endeavour to regulate credit lending. Thus, South Africa's well-regulated financial system escaped the global financial crisis relatively unharmed.

Despite the maximum interest rates introduced by the NCA in 2007, the level of indebtedness is still high. The NCA was put in place to ensure that credit providers do not lend recklessly and consumers of credit do not borrow more than they can afford (NCR, 2012). Instead, over the past year, there has been a 53-percent growth in unsecured lending due to the unintended consequences of the NCA (Chipeta and Mbululu, 2012), and predatory practices and pricing by unscrupulous credit providers are all contributing to the over-indebtedness of consumers (Arde, 2012). Aggressive marketing by banks and retail chain stores through promotions and reduced fees and rates has led to an increase in unsecured debt such as credit cards, personal loans and bank overdrafts. This has attracted marginal borrowers who were unable to borrow due to low incomes or lack of creditworthy track records. However, Thornley (2008) argues that unsecured debt attracts higher interest rates than that of secured lending and in most cases is confined to the segment of a population falling within a lower standard of living. Hence, the recent credit crunch provides a valuable opportunity to assess the consumption behaviour of households in a period of expanding credit followed by a period of restricted lending.

Using a quarterly panel data set of 23 economies over 32 years O'Toole, O'Connell and Gerlach-Kristen (2013) examine the impact of the financial crisis on credit consumption. Their findings indicate that in the long-run, consumption appears to be linked to income, housing and other financial wealth.

From the empirical literature discussed above, it should be noted that there are limitations in these studies. Firstly, some of these studies use basic descriptive statistics to show the factors that influence household debt. Secondly, the OLG method that was used by Tudela and Young (2005), Jacobsen (2004) and Martinez-Carrascal and del Rio (2004)fail to take into consideration the methods which the current study intends to adopt for the analysis. Problems of Unit root in time series variables which result in spurious regression results are not taken care of. This study intends to use cointegration in estimating the model describing the short-run and long-run relationships from the South African household data and the related macro-economic factors. Furthermore, multivariate causality tests are employed in order to confirm causality between variables.

3 Methodology

3.1 Data sources and definition of variables

Data were collected from the South African Reserve Bank's (SARB) website. The data used in this study are mainly annual time-series data, which span 1975-2013 in an effort to show the consumption patterns prior to- and post the global financial crisis of 2008/2009. The dependant variable is total household debt. The explanatory variables are household disposable income (HDI) and household net wealth and household consumption. Control variables such as inflation, interest rate and economic growth proxied by gross domestic product per capita (GDPPC) were included because they are macro-economic variables which are likely to influence the up-take of credit by households. Initially the regression model was run to

determine the short-run relationship of consumption as measured by household debt and independent variable. Then, in an attempt to establish a long-run relationship between consumption and debt, the Johansen cointegration technique was employed.

The theoretical underpinning is that household debt is driven by consumption. A high degree of household debt is believed to increase a country's inclination to financial crisis, and this acts as a hindrance for economic growth. Household debt is assumed to have a negative relationship with economic growth. The cost of financing is proxied by nominal interest rates because credit market conditions are typically related to nominal rather than real interest rates. In this regard, a drop in interest rate will normally lead to an increase in the supply of credit, and could therefore have an influence on consumption (Prinsloo, 2002). A change in interest rate could have an effect on credit extended to households and this would ultimately influence aggregate demand. Net wealth signifies consumption by households, reflecting their perceptions of the wealth effect; hence households care about their net worth (total assets minus liabilities). The inflation variable is represented by the annual Consumer Price Index (CPI) figures. Inflation is assumed to have a negative relationship with household debt.

3.2 Model specification

The objective of this study was to determine the relationship between household debt and credit consumption in South Africa. The model specification for this study is portrayed in the equation below:

$$TOT\_HD_t = \beta_0 + \beta_1 HDI_t + \beta_2 HCE_t + \beta_3 GDPPC_t + \beta_4 H\_SAV_t + \beta_5 WEALTH_t + \beta_6 INT_t + \beta_7 CPI_t + \varepsilon_t \quad (1)$$

Where: TOT_HD_t = is the total household debt
HDI = the annual household disposable income
HCE = the household consumption expenditure
GDPPC = economic growth rate as measured by the gross domestic product (GDP) per capita
WEALTH = net wealth of households
H-SAV = household savings
INT = the real interest rate per annum at time t
CPI = the consumer price index (inflation rate at time t)
ε_t = white noise
t = time
B_0 - β_4 = the coefficients explaining the elasticities of explanatory variables. These values are constants determined by available technology

4 Data analysis and discussion

The first step was to find whether there is a deterministic or short-run relationship between household debt and consumption variables. The results of the OLS are shown in Table 1 below:

Table 1. Ordinary Least Squares method

Variable	*Coefficient*	*Std-Error*	*t-Statistic*	*Probability*
LNGDPPC	-5.699967	1.496609	-3.808588	0.0006
LNHCE	5.524280	1.393239	3.965063	0.0004
LNHDI	-0.482049	0.279956	-1.721872	0.0947
NETWEALTH	0.000722	0.000103	6.974480	0.0000
INT	0.047960	0.017778	2.697787	0.0110
CPI	0.051899	0.014439	3.594387	0.0011
H_SAV	6.67E-05	1.60E-05	4.175519	0.0002
R-squared	0.930884	Mean dependent var		11.96054
Adjusted R-squared	0.917924	S.D. dependent var		1.967850
S.E. of regression	0.563766	Sum squared resid		10.17064
Durbin-Watson stat	1.867394	J-statistic		0.740912
Instrument rank	8			

The results indicate that household debt is negatively correlated with the natural logarithm of GDP per capita and household disposable income indicating that as debt increases disposable income and economic growth decreases. Household debt is positively and significantly correlated to consumption expenditure, net wealth, interest rates, inflation and household savings. The model has a 92% explanatory power as indicated by the adjusted R-squared value. All variables are significant at the 1% level except household disposable income which is significant at the 10% level.

4.1 Unit root test

The data were subjected to unit root tests using the Augmented Dickey-Fuller Schwarz Info Criterion before they were tested for cointegration. The results of the stationarity tests on differenced variables are presented in Table 2.

Table 2. Stationarity tests of variables on first difference – Augmented Dickey Fuller (ADF) test

Variable	*No trend*	*Intercept*	*Trend & Intercept*
D(LNTOT_HD)	0.464448	-1.053952	-0.535542
D(LNHDI)	-1.161296	-2.831510*	-6.306365***
D(LNGDPPC)	-3.878767***	-3.935965***	-4.247757***
D(LNHCE)	-2.250778**	-3.961001***	-3.963555**
D(NETWEALTH)	-1.587653	-2.560565	-4.754383***
D(INT)	-5.797494***	-5.730793***	-5.751871***
D(CPI)	-5.630101***	-5.571873***	-5.510422***
D(H_SAV)	-4.875803***	-4.808290***	-4.753057***

Note: ***, **, * Denotes 1%, 5% and 10% level of significance

The results of the unit root tests suggests that the data does not show statistical indication of the presence of unit roots, as all variables tested were stationary in the first difference or 1(1). Unit root test is important because it lays a basis for cointegration tests and therefore satisfies one of the important assumptions of regression analysis. After unit root testing the variables were tested for serial correlation. The Breusch-Godfrey Serial Correlation Lagrange Multiplier Test was conducted. This technique was found to be appropriate for this series because it analyses how well the lagged residuals explain the residuals of the original equation (Studenmund, 2011).

4.2 Cointegration analysis

Thus having established that all variables are non-stationary and integrated of the order one, we proceed and test for the number of cointegrating relationships by applying the Johansen Test for Cointegration. Cointegrated values ensure that we eliminate spurious relations and as such share common stochastic trends. Further than that, they enable us to formulate an error correction model as we determine the long-run relationship among the variables. We first estimate a restricted VAR and determine the lag length selection criteria. The optimum lag length selected is 5. The results are presented in Table 2. We then apply the Johansen test using the optimum lag length of 5. Table 3 depicts the result of the cointegration test, in which the trace statistic suggests that there are five cointegrating relationships amongst the variables. The null hypothesis that there is no cointegrating vector is rejected. However, the maximum eigenvalue test indicates that there are two cointegrating relationships. According to Table 2, the results of the cointegration suggest that the null hypothesis of no cointegration is rejected. The Unrestricted Cointegration Rank Test indicates five cointegrating equations at the 5% level. This result is further reinforced by the Unrestricted Cointegration Rank Test (Eigenvalue) which indicates two cointegrating equations at the 5% level.

Table 3. Cointegration Test

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	***Eigenvalue***	***Trace Statistic***	***0.05 Critical Value***	***Prob.*****
None*	0.910422	315.7699	187.4701	0.0000
At most 1*	0.864150	226.5019	150.5585	0.0000
At most 2*	0.692270	152.6423	117.7082	0.0001
At most 3*	0.659990	109.0367	88.80380	0.0008
At most 4*	0.592489	69.12180	63.87610	0.0170
At most 5	0.420290	35.90738	42.91525	0.2096
At most 6	0.235629	15.73394	25.87211	0.5140
At most 7	0.144903	5.791987	12.51798	0.4872
Trace test indicates 5 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				

Table 3. Cointegration Test (continued)

Hypothesized No. of CE(s)	*Eigenvalue*	*Max-Eigen Statistic*	*0.05 Critical Value*	*Prob.***
None *	0.910422	89.26800	56.70519	0.0000
At most 1 *	0.864150	73.85954	50.59985	0.0001
At most 2	0.692270	43.60565	44.49720	0.0623
At most 3 *	0.659990	39.91490	38.33101	0.0326
At most 4 *	0.592489	33.21442	32.11832	0.0366
At most 5	0.420290	20.17344	25.82321	0.2333
At most 6	0.235629	9.941955	19.38704	0.6251
At most 7	0.144903	5.791987	12.51798	0.4872
Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):				

4.3 Test of Causality

Having established that there are at least two cointegrating relationships between household debt and consumption variables, the author proceeded to investigate the direction of causality among these variables. The Granger causality tests are therefore used in the study in order to determine whether there exists a long-run relationship between the variables under investigation. The results are reported in Table 4. The results further suggest that there is causal flow from net wealth and household saving to total household debt, while household debt influences inflation.

Table 4. Granger Causality Test

Pairwise Granger Causality Tests				
Serial number	*Null Hypothesis*	*F-Statistic*	*Probability*	*Direction of causality*
1	INT does not Granger Cause LNTOT_HD	0.74082	0.6415	≠ >
2	LNTOT_HD does not Granger Cause INT	2.24464	0.0822	≠ >
3	LNGDPPC does not Granger Cause LNTOT_HD	2.30731	0.0754	≠ >
4	LNTOT_HD does not Granger Cause LNGDPPC	9.63172	7.E-05	→
5	LNHCE does not Granger Cause LNTOT_HD	1.47513	0.2412	≠ >
6	LNTOT_HD does not Granger Cause LNHCE	2.04622	0.1080	≠ >
7	LNHDI does not Granger Cause LNTOT_HD	1.69634	0.1764	≠ >
8	LNTOT_HD does not Granger Cause LNHDI	1.44288	0.2524	≠ >
9	NETWEALTH does not Granger Cause LNTOT_HD	53.3015	2.E-10	→
10	LNTOT_HD does not Granger Cause NETWEALTH	1.16215	0.3734	≠ >
11	H_SAV does not Granger Cause LNTOT_HD	8.08595	0.0002	→
12	LNTOT_HD does not Granger Cause H_SAV	1.15687	0.3761	≠ >
13	CPI does not Granger Cause LNTOT_HD	0.46314	0.8477	≠ >
14	LNTOT_HD does not Granger Cause CPI	2.89379	0.0348	→

The analysis contained in Table 4 suggests that household debt does influence economic growth and inflation while net wealth and savings influence household debt at the 1% level of significance. These results are largely as expected and consistent with the view that household debt influences economic growth (Barba and Pivetti, 2009; Aregbeshola, 2014; Kim, Setterfield and Mei, 2014). As household debt increases, consumers continue to borrow so as to purchase goods and services produced by local industry and this indirectly affects GDP as industry grows in an effort to satisfy demand. The relatively low interest rates have supported the growth of household consumption as families are left with more disposable income to spend on goods and services. However, it must be noted that the results in Table 4 also indicate that net wealth and household savings do influence household debt. Household savings reached a peak negative low during the global financial crisis after which it picked up again. During this time households used their savings to pay off their debt.

5 Discussion and conclusion

The evidence emerging is that the indebtedness of South African households has risen sharply in recent

years. This paper examines the causal relationship between household debt and macro-economic variables in South Africa as understanding the link will be critical to policy makers in their quest to curb the increasing household indebtedness. The increase in household debt has helped to sustain the growth of consumption and residential investment and, probably, the resilience of the South African economy to the 2008/2009 global financial crisis. The empirical results suggest that there is a long-run relationship between economic growth and total household debt.

Total household debt is indeed a function of household consumption expenditure, disposable income and net wealth. The increase in household debt over the years is partly a process of a structural nature. A combination of such factors as credit liberalisation, higher disposable income, low net wealth and periods of low interest rates explain the rising levels of household debt. At the same time, household wealth is negligibly low indicating very little investment in assets and low savings. The implication of the study is that the increase in household debt has supported household consumption expenditure in South Africa at the expense household net wealth.

The sharp increase in household debt and consumption warrants much attention owing to its macroeconomic and financial implications. The concern is two-fold. Higher debt levels lead to higher consumption spending in South Africa. The concern arises during a recessionary period in the economy, when households struggle to contain these high debt levels. Concern is also expressed over consumer behaviour, which in the case of South Africa makes a significant contribution to GDP. South African households/consumers are therefore encouraged to spend less and save more. With interest rates being cleverly controlled by the reserve bank in the event of inflation going up, South African households will be burdened by debts that they will not be able to pay, a situation similar to Greece's experience. Rising levels of household consumption expenditure generally stimulate the economy, whereas slower growth or decline in aggregate consumption expenditure has a dampening effect on economic growth.

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FINANCIAL DEVELOPMENT AND GROWTH IN HUNGARY. A CASE STUDY APPROACH

Kunofiwa Tsaurai*

Abstract

This study investigated the relationship between financial development and economic growth in Hungary using a case study approach. Majority of previous studies on the same or similar topic have so far used regression and or econometric methodologies to examine the nature of the relationship between financial development and economic growth. Not a single study the author is aware of used a case study approach to discuss the relationship between the two variables. It is against this background that the author decided to use the case study approach that allows the author to really deepen an understanding of the relationship between the two variables in Hungary. Apart from being narrowly focused on regression or econometric approaches, previous studies on the same or similar topic in Hungary excluded a broad range of financial development variables. The current study departs from these previous studies as it used a case study approach and taken into account a broad range of financial development variables. From the trend analysis done in section 3, it appears that the relationship between financial development and growth in Hungary during the period under study is not clear. A definite and clear cut conclusion could not be reached about the relationship between the two variables in Hungary hence the use of econometric data analysis approaches in conjuction with the case study approach is recommended.

Keywords: Financial Development, Economic Growth, Case Study, Hungary

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1 Introduction

Recent research on the relationship between financial development and economic growth has produced varying and inconclusive results. Findings have to a larger extent varied with the proxies of financial development and economic growth, geographical case studies, econometric techniques and type of data used. The literature on the relationship between financial development and economic growth falls into four distinct groups: (1) the financial development-led economic growth, (2) economic growth-led financial development, (3) feedback and (4) the neutrality perspective. The financial development led economic growth perspective which was supported by a majority of empirical work (see Table 1) argues that economic growth is driven by financial development whilst the economic growth led financial development perspective says that financial development is spurred by economic growth. In the feedback perspective, both variables affect each other whilst the neutrality perspective finds no relationship between the two variables. The current study seeks to contribute to the debate by examining whether there existed any relationship between financial development and growth in Hungary during the period ranging from 1991 to 2012.

The current study deviates from other previous studies on the same subject in that (1) it makes use of the case study and (2) it uses a broad range of financial development indicators. To the best of the author's knowledge, no previous study on this subject exists that have used the case study approach in conjunction with such a broad range of financial development data sets. Previous research on the same or similar topic used regression and econometric data analysis in Hungary, thus making the current study a unique one. The case study approach shows how actually the financial development data related to the growth data during the period from 1991 to 2012 although it might be difficult to draw clear conclusions under such a framework.

2 Review of related literature

The literature on the financial development-economic growth nexus is divided into four groups. These are financial development led economic growth hypothesis, economic growth-led financial development hypothesis, the feedback hypothesis and the neutrality hypothesis. The feedback hypothesis is when both financial development and economic growth affect each other whilst there is no relationship between the two variables under the neutrality hypothesis. Table 1 shows a summary of the literature on the financial development and economic growth nexus.

Table 1. Summary of the financial development-economic growth nexus literature

Author	*Country/Countries of study*	*Estimation and testing procedures used*	*Research findings*
Al-Malkawi et al (2012)	United Arab Emirates (UAE) from 1974 to 2008	Time series analysis - Autoregressive distributed lag (ARDL)	Their study showed a feedback effect between economic growth and financial development as measured by M2/GDP.
Murinde (2012)	African countries	Time series	The study observed that financial development positively affected economic growth via information asymmetry and pricing risk reduction.
Greenwood et al (2013)	A sample of 45 countries	Cross country analysis	Financial intermediation was found to have had a significant positive impact on economic growth.
Hossein & Yazdan (2007)	10 emerging countries from 1968 to 2007	Panel data analysis	Their findings supported the financial development-led economic growth hypothesis.
Ono (2012)	Russia from second quarter of 1999 to second quarter of 2008.	Time series analysis - Vector Autoregressive (VAR) model	Money supply was found to have had a significant impact on economic growth. The study also observed that economic growth led to increased banking sector loans in Russia.
Hye & Islam (2013)	Bangladesh from 1975 to 2009	Time series analysis - Autoregressive distributed lag (ARDL)	Their study showed that real interest rates negatively influenced economic growth in the short and long run Bangladesh.
Sassi & Goaied (2013)	17 MENA countries from 1960 to 2009	Cross country data analysis	Financial development had a negative impact on economic growth. The combined effect of financial development and information and communication technology (ICT) significantly positively influenced economic growth in MENA countries that were under study.
Campos et al (2012)	Argentina from 1896 to 2000	Time series analysis – PARCH model initially developed by Ding et al (1993)	Financial liberalization had a positive impact on economic growth in the long run. In the short run, financial liberalization had a small negative influence on economic growth in Argentina.
Uddin et al (2013)	Kenya from 1971 to 2011	Time series analysis – ARDL procedure	Their study noted that financial development had a significant positive effect on economic growth in the long run in Kenya.
Ibrahim (2012)	Nigeria from 1979 to 2010	Time series analysis – Error Correction Model (ECM)	Broad money supply was found to have had a significant positive influence on economic growth. The same study observed an inverse causality relationship between loans disbursement to the private sector and the performance of the manufacturing sector.
Aye (2013)	Nigeria from 1960 to 2011	Time series analysis – Vector Autoregressive (VAR) and VECM approach.	No long run causality relationship between financial deepening, economic growth and poverty. The study also observed a feedback effect between financial deepening and economic growth in the short run in Nigeria.

Table 1. Summary of the financial development-economic growth nexus literature (continued)

Author	*Country/Countries of study*	*Estimation and testing procedures used*	*Research findings*
Oluitan (2012)	Selected African countries from 1970 to 2005	Panel data analysis	A feedback relationship between financial development and economic growth was detected in African countries that were part of the study.
Tash & Sheidaei (2012)	Iran from 1966 to 2010	Time series analysis	The joint impact of financial development and trade liberalization had a significant positive influence on economic growth in Iran.
Mercan & Gocer (2013)	Brazil, Russia, India, China & Turkey from 1989 to 2010	Panel data analysis	Their study noted that financial development, foreign direct investment and trade openness significantly and positively contributed towards economic growth.
Misati & Nyamongo (2012)	34 Sub Saharan countries from 1983 to 2008	Cross country data analysis	Financial liberalization had a negative effect on economic growth whilst foreign aid and human capital formation positively affected economic growth in Sub Saharan Africa.
Cavenaile & Sougne (2012)	6 Organization for Economic Cooperation and Development (OECD)	Panel data analysis	Institutional investors had a long run significant positive on economic growth in Belgium and Canada. On the other hand, banking sector development and institutional investors negatively affected economic growth in United States, Spain, Japan and Chile.
Bojanic (2012)	Bolivia from 1940 to 2010	Time series analysis – Granger regressions and ECM models.	The study revealed a uni-directional causality running from financial development and trade openness towards economic growth.
Zhang et al (2012)	286 Chinese cities from 2001 to 2006	Cross section data analysis – Generalized Methods of Moments (GMM).	Financial development positively impacted on economic growth after China joined the World Trade Organization. This finding is contrary to the existing literature that says that the distorted nature of the China's banking sector negatively affects economic growth in China.
Bittencourt, M. (2012)	4 Latin American countries from 1980 to 2007	Cross country data analysis	The study observed that financial market liquidity had a positive influence on economic growth across all the Latin American countries.
Ndlovu (2013)	Zimbabwe from 1980 to 2006	Time series analysis –ECM approach	The study detected a uni-directional causality running from economic growth towards financial development in the long run in Zimbabwe.
Kendall (2012)	Indian districts from 1991 to 2001	Cross country data analysis	Less developed banking sector was found to be responsible for slowed economic growth in Indian districts. On the other hand, the combination of higher human capital development and less developed banking sector had a significant impact on economic growth in India.
Qin & Ndiege (2013)	Tanzania from 1990 to 2012.	Time series analysis – Granger causality test.	The impact of savings on economic growth was more than that of credit/loans in Tanzania.

Table 1. Summary of the financial development-economic growth nexus literature (continued)

Author	*Country/Countries of study*	*Estimation and testing procedures used*	*Research findings*
Adu et al (2013)	Ghana from 1961 to 2010	Time series analysis - ARDL	Private sector credit to GDP ratio or the private sector as a ratio of total credit significantly positively impacted on economic growth in Ghana. However, broad money supply negatively affected economic growth in Ghana.
Kagochi et al (2013)	7 Sub Saharan Africa from 1991 to 2007.	Panel regression analysis – Granger causality tests.	Their study observed a bi-directional causality relationship between stock market development and economic growth. Causality running from economic to banking sector development was also detected in Sub Saharan Africa.
Prete (2013)	30 countries that include Australia, Austria, Belgium, Brazil, Canada, Chile, Colombia, Denmark, Finland, France, Greece, Hungary, India, Indonesia, Ireland, Italy, Japan, Malaysia, Mexico, Netherlands, Norway, Philippines, Portugal, Spain, Sweden, Switzerland, Thailand, United Kingdom, United States and Venezuela.	Correlation analysis	Economic growth was positively influenced by the literacy levels than financial development across all the countries that were under study.
Adusei et al (2013)	Ghana from 1971 to 2010	Time series analysis – Generalized Method of Moments (GMM) approach.	Their study observed that economic growth was negatively influenced by financial development.
Menyah et al (2014)	21 African countries from 1965 to 2008.	Panel data analysis – bootstrap panel causality framework.	Financial development had a negligible influence on economic growth in African countries.
Khadraoui & Smida (2012)	70 countries from 1970 to 2009.	Panel data analysis – GMM approach.	The study supported the financial development led economic growth hypothesis.
Hardaker (2012)	42 emerging market countries from 1995 to 2006.	Time series analysis	Stock market and banking sector development influenced economic growth in a positive way in emerging economies.
Pan & Wang (2013)	89 countries from emerging market, industrial and developing countries from 1970 to 2009.	Cross country data analysis – Bayesian Dynamic Factor Model.	Their study observed a non-linear causality relationship between financial development and economic growth. It further noted a certain threshold level of financial development must be exceeded before the economy benefits from financial development.

Source: author compilation

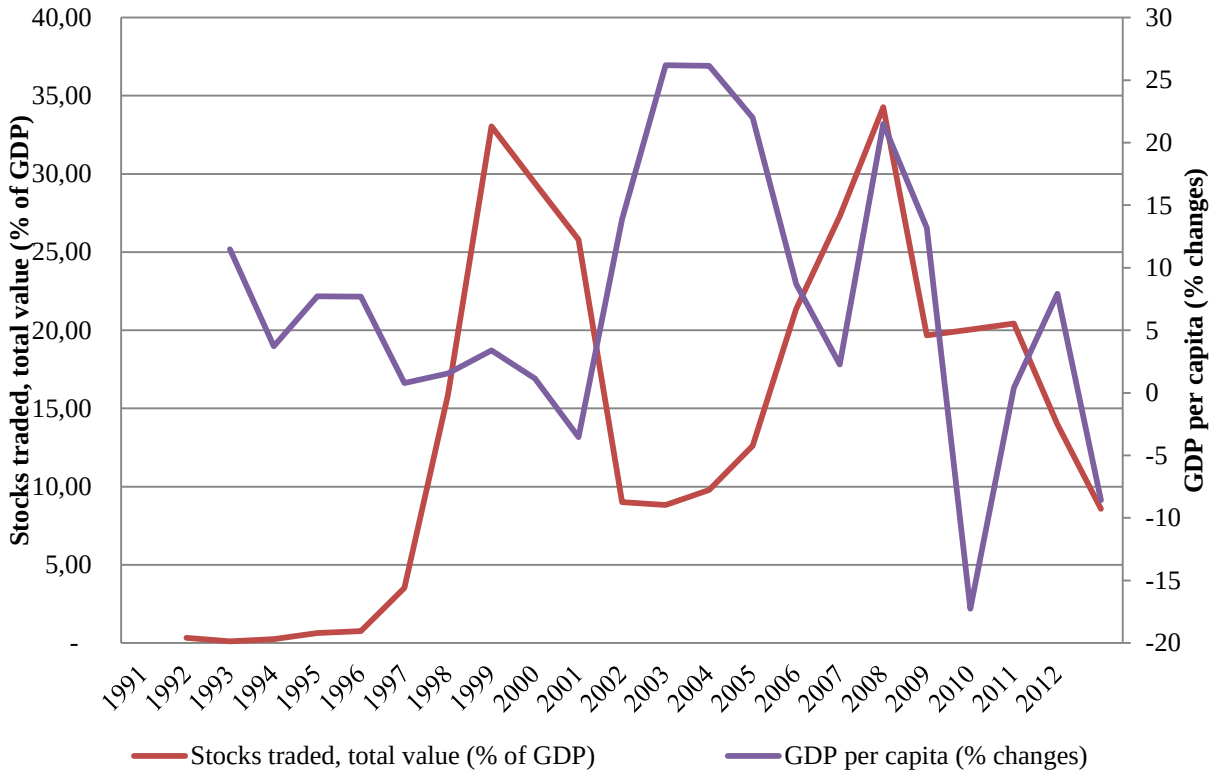
It appears from the empirical literature review (Table 1) that the financial development led growth hypothesis is the most common hypothesis.

3 Financial development and Economic Growth in Hungary

According to World Bank (2014), total stock traded value as a ratio of GDP increased by 0.43 percentage points, from 0.34% in 1991 to 0.77% in 1995 whilst GDP per capita went up by 34.16% during the same time frame (US$3 331.54 in 1991 to US$4 469.60 in 1995). However, the period from 1995 to 2000 saw total stock traded value as a ratio of GDP and GDP per capita going up by 25.02 percentage points and 3.22% respectively. Whilst total stock traded value as a ratio of GDP plummeted by 4.42 percentage points, from 25.79% in 2000 to 21.37% in 2005, GDP per capita massively gained from US$4 613.71 in 2000 to US$11 092.43 in 2005.

Furthermore, total stock traded value as a ratio of GDP declined by a paltry 0.95 percentage points, from 21.37% in 2005 to 20.42% in 2010 before losing another 11.85 percentage points (from 20.42% in 2010 to 8.58% in 2012). On the other hand, the period from 2000 to 2005 saw GDP per capita going up by a massive 140.42% before further increasing by another 16.82%, from US$11 092.43 in 2005 to US$12 958.27 in 2010. Last but not least, the subsequent two year period saw GDP per capita losing 1.34%, from US$12 958.27 in 2010 to US$12 784.30 in 2012 (see Figure 1 & 3).

Figure 1. Total stock traded value (% of GDP) and GDP per capita (% changes) for Hungary



Source: World Bank (2014)

The banking sector development proxy known as the domestic credit to private sector by banks (% of GDP) declined by 16.05 percentage points, from 37.81% in 1991 to 21.76% in 1995 before gaining 10.19 percentage points during the subsequent five year period to end the year 2000 to 31.95% (see Figure 2).

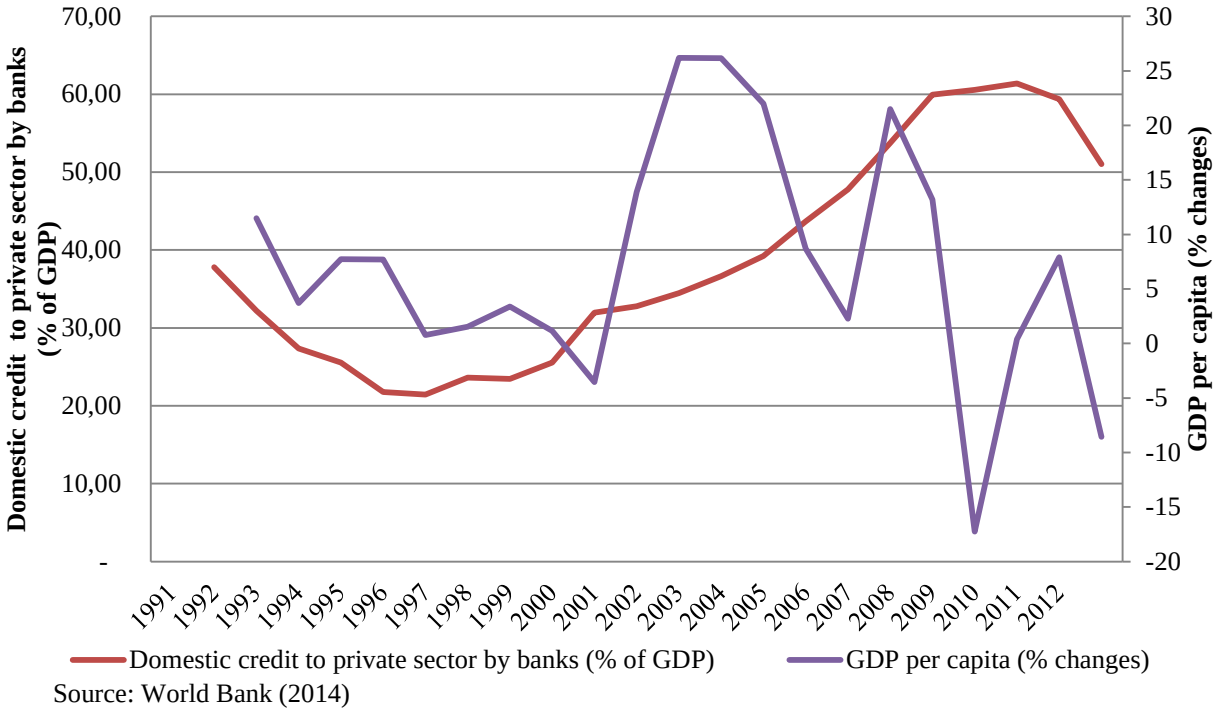
The five year period from 2000 to 2005 was characterized by a 11.71 percentage points increase in domestic credit to private sector by banks (% of GDP). The latter actually went up from 31.95% in 2000 to 43.67% in 2005. On the other hand, domestic credit to private sector by banks (% of GDP) surged from 43.67% in 2005 to 61.36% in 2010, representing a 17.70 percentage points increase. This was before losing 10.33 percentage points, from 61.36% in 2010 to 51.04% in 2012 (refer Figure 2).

Figure 3 shows that total stocks traded value went up by 203.42%, from US$117 million in 1991 to US$355 million in 1995 before further going up by a massive 3 322.58% during the subsequent five year period ranging from 1995 to 2000. Total stocks traded value gained another 96.79%, from US$12 150.16 million in 2000 to US$23 910.86 in 2005 before further going up by 10.69% during the subsequent five year period to end the year 2010 at US$26 466.12

million. This was before it experienced a 58.90% decline, from US$26 466.12 million in 2010 to US$10 877.60 million in 2012 (refer to Figure 3).

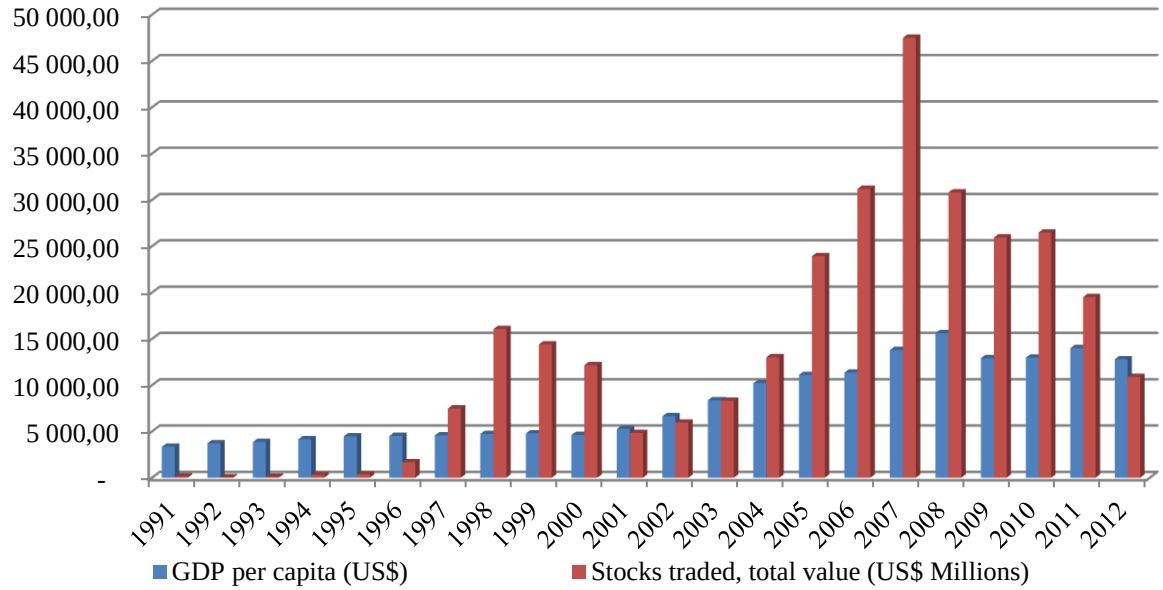
Table 2 shows that stock market capitalization (% of GDP) increased by 3.74 percentage points, from 1.46% in 1991 to 5.20% in 1995 whilst domestic credit provided by the financial sector ratio (% of GDP) abbreviated as (DCFS ratio) declined by 18.29 percentage points during the same time period. Stock market capitalization ratio recorded a 20.32 percentage points increase, from 5.20% in 1995 to 25.52% in 2000 before further gaining by 3.60 percentage points during the subsequent five year period (from 25.52% in 2000 to 29.11% in 2005) – refer to Table 2.

Figure 2. Domestic credit to private sector by banks (% of GDP) and GDP per capita (% changes) for Hungary



Source: World Bank (2014)

Figure 3. Total stocks traded value (US$ Millions) and GDP per capita (US$) Trends for Hungary (1991 -2012)



Source: World Bank (2014)

Table 2. Financial market development and growth trends for Hungary (1991 - 2012)

	MKT CAP ratio (%)	*Turnover ratio (%)*	*DCFS (% of GDP)*	*MKT CAP (US$ Millions)*	*GDP (US$ Millions)*
1991	1.46	6.55	98.05	505.00	34,559.39
1992	1.46	7.12	93.09	562.00	38,514.17
1993	2.04	14.41	93.84	812.00	39,900.74
1994	3.73	22.39	90.08	1,600.00	42,925.51
1995	5.20	17.75	79.76	2,399.00	46,166.30
1996	11.35	42.78	70.48	5,273.00	46,448.78
1997	31.81	73.80	63.76	14,975.00	47,070.18
1998	28.89	110.62	61.26	14,028.00	48,548.47
1999	33.32	94.87	52.18	16,317.41	48,965.87
2000	25.52	85.75	54.48	12,020.68	47,110.42
2001	19.37	43.04	48.85	10,366.87	53,533.39
2002	19.46	50.61	52.35	13,109.60	67,366.29
2003	19.74	55.63	56.67	16,729.20	84,738.41
2004	27.83	57.26	57.39	28,711.38	103,156.82
2005	29.11	78.03	62.00	32,575.66	111,890.07
2006	36.71	83.70	68.10	41,934.53	114,238.45
2007	34.39	106.04	75.49	47,651.14	138,580.12
2008	11.87	93.01	82.05	18,579.37	156,578.90
2009	21.87	110.69	80.98	28,288.05	129,359.84
2010	21.38	94.53	81.11	27,708.44	129,583.01
2011	13.46	83.86	77.54	18,772.96	139,439.62
2012	16.62	54.59	68.74	21,080.37	126,824.84

The five year period between 2005 and 2010 was characterized by a decline in stock market capitalization whilst the same downward trend was observed from 2010 to 2012. For instance, stock market capitalization went down from 29.11% in 2005 to 21.38% in 2010, representing a 7.73 percentage points decline before experiencing another 4.76 percentage points decline during the subsequent two year period to end the year 2012 at 16.62%.

Domestic credit provided by the financial sector (% of GDP) abbreviated as DCFS ratio experienced a massive 25.28 percentage points decline, from 79.76% in 1995 to 54.48% in 2000 before experiencing a 7.52 percentage points increase during the same period (from 54.48% in 2000 to 62% in 2005). Moreover, the subsequent five year period saw the DCFS ratio gaining by 19.11 percentage points (from 62% in 2005 to 81.11% in 2010) before plummeting by 12.37 percentage points, from 81.11% in 2010 to 68.74% in 2012.

Figure 4 describes the stock market capitalization and GDP trends in Hungary during the period from 1991 to 2012. GDP and stock market capitalization stood at US$34 559.39 million and US$505 million respectively in 1991. Stock market capitalization went up by 375.05%, from US$505 million in 1991 to US$2 399 million to 1995 before experiencing another increase of 401.07% during the subsequent five year period to end 2000 at US$12 020.68 million. Furthermore, stock market capitalization went up by 171%, from US$12 020.68 million in 2000 to US$32 575.66 million in 2005 before declining by 14.94% during the subsequent five year period to end 2010 at US$27 708.44 million. This was before further plummeting from US$27 708.44 million in 2010 to US$21 080.37 million in 2012.

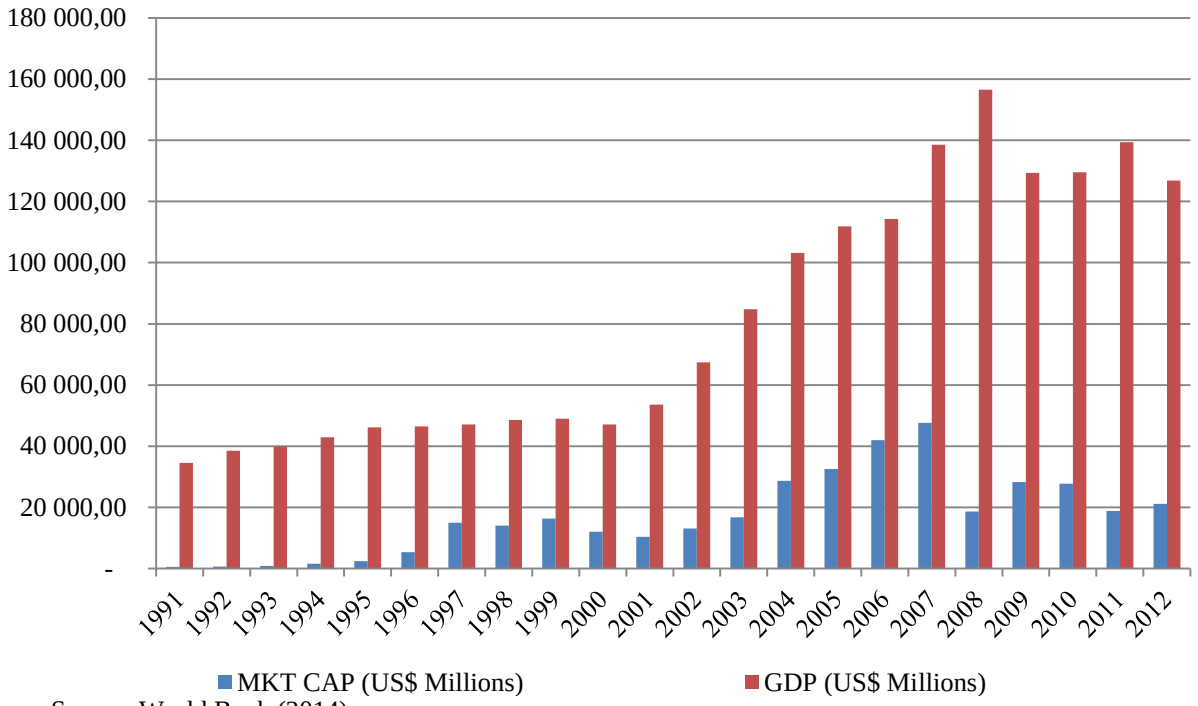
On the other hand, GDP increased from US$34 559.39 million in 1991 to US$46 166.30 million in 1995 and further went up marginally by 2.05% during the subsequent five year period, from US$46 166.30 million in 1995 to US$47 110.42 million in 2000. GDP was characterized by a massive increase of 137.51%, from US$47 110.42 million in 2000 to US$111 890.07 million in 2005 before further going up by 15.81% to end the year 2010 at US$129 583.01 million. On the contrary, the next year period saw GDP marginally going down by 2.13% , from US$129 583.01 million in 2010 to US$126 824.84 million in 2012.

4 Conclusion

This study investigated the relationship between financial development and economic growth in Hungary using a case study approach. Majority of studies on the same or similar topic have so far used regression and or econometric methodologies to examine the nature of the relationship between financial development and economic growth. Not a single study the author is aware of used a case study approach to discuss the relationship between the two variables. It is against this background that the author

decided to use the case study approach that allows the author to really deepen an understanding of the relationship between the two variables in Hungary. Apart from being narrowly focused on regression or econometric approaches, previous studies on the same or similar topic in Hungary excluded a broad range of financial development variables. The current study departs from these previous studies as it used a case study approach and taken into account a broad range of financial development variables. From the trend analysis done in section 3, it appears that the relationship between financial development and growth in Hungary during the period under study is not clear. A definite and clear cut conclusion could not be reached about the relationship between the two variables in Hungary hence the use of econometric data analysis approaches in conjuction with the case study approach is recommended.

Figure 4. Stock market capitalization and GDP trends for Hungary (1991 -2012)



Source: World Bank (2014)

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FINANCIAL GUARANTEES AND PUBLIC DEBT IN SOUTH AFRICA

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Abstract

A few years since the worst of the Euro sovereign debt crisis, many nations, from Cyprus to Ireland, including South Africa are re-visiting their public debt management to avert or lessen the impact of similar such happenings in the future. There are a number of studies on risk assessments of fiscal sustainability; however, few focus on contingent liabilities and even fewer on financial guarantees. In South Africa, financial guarantees have consistently comprised just above or below 50% of all contingent liabilities since the early days of majoritarian rule. In lieu of this, the paper analyses the risks posed by financial guarantees to fiscal sustainability in South Africa. We estimate the effect of financial guarantees on public debt in South Africa via the Engle Granger and causality model with quarterly time series data obtained from the South African Reserve Bank (SARB) as well as the National Treasury. The data covers the April 1997 to December 2011 period. All econometric methods were executed using the statistical software package E-Views 7. We found that no long run relationship exists between national net loan debt and financial guarantees in South Africa. The pass rate of financial guarantees significantly affects its present value. The pass rate of financial guarantees has a predicting ability in determining the present value of national net loan debt. These findings may be contrary to what would be expected in the case of South Africa considering that the country is managing the issuance of financial guarantees prudently and that at present levels, there is no need for a radical policy shift. The study therefore offers a lesson to similar merging economies on the good governance of contingent liabilities.

Keywords: Financial Guarantees, Contingent Liabilities, Fiscal Risks, Fiscal Sustainability, Granger Causality, South Africa

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1 Introduction

A few years since the worst of the Euro sovereign debt crisis, many nations, from Cyprus to Ireland, including South Africa are re-visiting their public debt management to avert or lessen the impact of similar such happenings in the future. This study is a follow up on our earlier investigation on the same subject (see, Miruka, Mukuddem-Petersen & Meniago 2013) but which used a different methodology. In South Africa, financial guarantees have consistently comprised just above or below 50% of all contingent liabilities since the early days of majoritarian rule. In lieu of this, the paper analyses the risks posed by financial guarantees to fiscal sustainability in South Africa using a more robust estimation.

We estimate the effect of financial guarantees on public debt in South Africa via the Engle Granger and causality model with quarterly time series data obtained from the South African Reserve Bank (SARB) as well as the National Treasury. The data extends from April 1997 to December 2011. All econometric methods were executed using the statistical software package E-Views 7. We found that no long run relationship exists between national net loan debt and financial guarantees in South Africa. The past rate of financial guarantees significantly affects its present value. The pass rate of financial guarantees has a predicting ability in determining the present value of national net loan debt.

2 Financial guarantees and fiscal sustainability in South Africa

Fiscal sustainability remains a controversial issue and most economists put a focus on it due to the sharp sovereign debt crisis. The issue of fiscal sustainability is usually addressed by analysing economic variables such as growth rate of gross rate domestic product, growth rate of public debt and average interest rate on public debt. As Tshiswaka-Kashala (2006) shows, fiscal sustainability has been defined in many ways. At its simplest, fiscal sustainability can be viewed as the ability of a government to sustain its current spending, tax and other policies in the long run without threatening government solvency or

defaulting on some of its liabilities or promised expenditures. We can therefore say that fiscal sustainability concerns whether the government is in a position of keeping a given expenditure pattern, taxation, and borrowing pattern indefinitely, or whether it will be ultimately constrained to alter those policy settings to satisfy its long-run budget constraint. In other words, fiscal sustainability refers to the ability of the government to maintain a given policy stance in the future in spite of any shocks to the system which may arise (Tshiswaka-Kashala 2006).

Furthermore, many scholars define fiscal sustainability to include solvency of the government, recapitulated stable economic growth, equable taxes and intergenerational fairness (see, for instance, Hamilton & Viegi 2009; Ajam & Janine 2007; Aron, J and Muellbauer, J 2005). In the case of South Africa, and given the service delivery backlogs occasioned by apartheid, a sustainable fiscal policy must pay regard to the stability of the macroeconomic environment that fosters sustainable and inclusive economic growth and strengthen fiscal discipline to avoid populist fiscal policies that may lead to unsustainable levels of debt and seignorage especially during this electioneering period[9]. This would ensure that such policy can be pursued for long periods without any major interventions in tax and spending patterns. To put it differently, current policy as defined by the current legislation and policy decisions determining the evolution of tax and spending ratios can be maintained indefinitely without resulting in excessive debt accumulation.

All over the world, governments often avoid default by changing their fiscal policy when it becomes clear that it is unsustainable. Because of this reality, scholars of fiscal sustainability focus not on default itself, but on the feasibility, types and consequences of fiscal policy reforms needed to avoid default in the future. The recent financial downturn that led to an increase in budgetary deficits and public debt, first among the so-called PIIGS (Portugal, Ireland, Italy, Greece and Spain) and then in the United States has re-ignited debates on what constitutes efficient fiscal policy. Researchers need to identify quick and positive responses to shocks on public debt in order to absorb them and to avoid transforming them into systemic risk.

From the proceedings above, fiscal solvability is therefore one of the main issues that governments have to overcome. Radulescu (2012) indicated that financial markets had not paid enough attention to public finance imbalances before 2007, but they are doing right now by lending high priced money. Hence, Campeanu & Gyorgy (2009) indicated that government should introduce fiscal policies that manage to create primary surplus in order to achieve fiscal sustainability. In addition, Campeanu (2011) emphasized the importance of using the best fiscal and budgetary tools to overcome the current challenges that governments have to overcome within a very fragile fiscal context. Brasoveanu-Obreja and Brasoveanu (2012) showed that choosing the most appropriate composition of fiscal adjustment could lead to a sizeable reduction of budgetary deficit but also to economic growth. They indicated that fiscal adjustments based on decreasing government spending are successful and expansionary.

2.1 Financial guarantees

By definition, financial guarantees are non-cancellable indemnity bond that is backed by an insurer in order to guarantee investors that principal and interest payments will be made (Bajo & Primorac 2011). As Bajo & Primorac (2011) explains, financial guarantees can be viewed as an instrument of credit enhancement which insure security purchasers against default and provide lower borrowing costs of issuers. Financial guarantees work primarily by providing investors with an additional level of comfort that the investment will be repaid in the event that the securities issuer would not be able to fulfil the contractual obligation to make timely payments. Furthermore, financial guarantees help to lower the cost of financing for issuers because the guarantee typically earns the security a higher credit rating and therefore lower interest rates. It is for these reasons amongst others that government typically issue financial guarantees.

It follows from the proceedings above that one of the benefits of the financial guarantee is that it can help the debtor to secure a more attractive interest rate on the loan or other debt instrument. As is apparent, the guarantee helps to lower the degree of risk that the lender is taking on in order to approve the loan. This is achieved by ensuring the lender is covered in the event that the debtor becomes unable to make payments on time or not at all. It is even cheaper considering that out of pocket expenses troubles associated with collections efforts or the loss of any amount remaining due on the debt instrument are eliminated in this type of arrangement. Thus, for countries competing for direct foreign investments such as South Africa, financial guarantees are one way of attracting specific investors.

For major public works such energy and infrastructure undertakings, such arrangements may benefit state-owned enterprises by enhancing the entities' creditworthiness and thereby lowering the cost of financing. For state firms especially, financial guarantees are particularly handy since the bond represents an unconditional guarantee of compliance and a preferred interest rate is often offered.

Guarantees are often used as a kind of aid for projects or activities producing a significant welfare effect such as roads, dams, major housing projects and

[9] See, also Calitz, E. (2000) 'Fiscal implications of the economic globalisation of South Africa,' *Journal of African Economies*, Vol. 9 (2): 189-212. Even though dated, this study was very useful for our research given its then ground-breaking insights.

so on. In most cases, financial guarantees are issued to cover, partly or fully, risk in instances when the debtor is unable to repay a debt or meet another liability which has been guaranteed, or when the borrower fails to meet their liabilities within the agreed time limit. As Bajo & Primorac (2011) explain in the case of Croatia, some financial guarantees are essentially performance bonds with a payment guarantee element similar to license or permit bonds.

Typically, guarantees usually involve a minimum of three parties. In the first instance, we find the beneficiary. As Winpenny (2006) explains, the beneficiary is the entity in whose favour the guarantee has been issued and therefore requires security against the risk of the principal's non-performance or default under the primary contractual obligation. Second, we find the applicant. The applicant applies for the issue of a guarantee which covers performance as described by a contract. The applicant can, in the course of the contract, expect to be informed if there is a breach of contract. The final entity is the guarantor. The guarantee may be the state, a bank or party that issues the guarantee on behalf of the applicant. The guarantor is usually the applicant's bank which is situated in the same country as the applicant (Winpenny 2006).

Interestingly, financial guarantees are relevant to countries at all levels of social and economic development. Both supply and demand factors explain their pattern of use and may pull in opposite directions, but demand usually predominates and developing economies are especially vulnerable. In many instances, developing countries are forced to resort to financial guarantees to assuage the fears of foreign capital. Nevertheless, we know that financial guarantees alone cannot compensate for the absence of certain macro-economic fundamentals which drive investments, job-creation and growth. These include market size, natural resource endowment, the presence of bankable projects and good sponsors, essential infrastructure, adequate institutions, financial and legal systems including sound banks, lively sub-sovereign entities and good public governance generally. Many of these fundamental factors are related to the level of economic development and insofar as this applies, the distribution of financial guarantees will be correlated with the level of investment and development.

Maximising the impact of financial guarantees depends on good judgement to know when material conditions are approaching a state where the injection of a guarantee will lead to a positive outcome. In most cases, guarantees may have a greater influence in the presence of certain favourable conditions and there will be more opportunities for the successful use of guarantees where these conditions can be created.

As we argued previously (see Miruka, Mukuddem-Petersen & Meniago 2013), the domino-effect of financial crises in the world presently means that governments are facing increasing fiscal risks and uncertainties. One such risk is contingent liabilities that may be incurred depending on future events. However, it is difficult to forecast the probability of the contingency occurring and the magnitude of the government outlay required to settle the ensuing obligation (Polackova 1998). This probability and magnitude depend on some exogenous conditions, such as the occurrence of a particular event (for example, a natural disaster, a banking or financial crisis) and some endogenous conditions, such as the design of government programs (an example being the contracts for state guarantees and insurance), as well as on the quality and enforcement of regulations and supervision.

State-owned entities are mandated to give effect to government's priorities. In fact, South Africa's main entities are in energy, rail, roads, ports, water and sanitation. In particular, the government's financial guarantee exposure is mostly committed to state-owned entities and development finance institutions that are essential for the effective and efficient management of natural resources, tourism, information technology and manufacturing sectors. These sectors are principal drivers of the formal sector economy, and provide for the bulk of economic growth as well as potential job creation and poverty alleviation. These state-owned entities need to borrow against their balance sheets in order to invest in infrastructure that contributes positively to the fiscal stance. The government assists these entities to access financing and provides guarantees as needed. Evidently, for several years the largest entities have been investing in key economic infrastructure necessary to support long-term economic growth. Also, during the recent recession, these infrastructure investments helped to stimulate the economy (Miruka, Mukuddem-Petersen & Meniago 2013).

2.2 Fiscal sustainability

We reiterate here that the core contribution of the present study will be the use of a new methodology since most of the literature reviewed here had been deployed in Miruka, Mukuddem-Petersen & Meniago (2013). As we showed in the earlier study, countercyclical fiscal and monetary stance has over the years enabled South African policy makers to support growth and attract both domestic and foreign investments. An inflation-targeting monetary policy has been successful in the pursuit of fiscal consolidation to a great degree yet inequalities and challenges of job creation persist thus necessitating a relook at the fiscal policy given the imperatives of a developmental state. To confound the debt management challenge even further, is the search for appropriate responses to the recent global financial crisis and its aftermath to avoid a crisis similar to what the emerging markets faced in the 1990s and early 2000s.

We are also convinced that South Africa offers an interesting case in fiscal policy management since

the demands of good fiscal governance are embedded in the 1996 constitution. As Ajam & Aron (2007 p.749 – 50) restate, the constitution imposes accountability, transparency and effective financial management in all public budget processes. The National Treasury, which is South Africa's equivalence of the Ministry of Finance in many countries, is thus a creature of the 1996 constitution with an express mandate to implement standard 'accounting practices, classifications and norms to ensure transparency and expenditure control in each sphere of the government, as well as financing the deficit through increased public debt.' Our approach in this study will be to test whether the management of government financial guarantees has lived up to the exacting requirements of the constitution as well as the Public Finance Management Act of 1999 which is the enabling legislation.

South Africa is a constitutional democracy with a three-tier system of government and an independent judiciary. In recent times, the fiscal stance of South Africa and of possible amendments to the stability and growth pact of the country has renewed interest regarding how to measure fiscal sustainability. Determination of whether the country's fiscal stance is sustainable has proved both difficult and highly controversial.

Deviant fiscal behaviour, seen as a signal of unsound economic fundamentals, could be penalised by adverse foreign capital flows. To buttress the point, topical commentators usually use the example of Zimbabwe as a warning to would be transgressors of the Washington Consensus. Having reduced its debt burden over the past thirteen years, the South African government again finds itself facing rising debt. Since 1946, the South African government ran a sustainable fiscal policy, by reducing the primary deficit or increasing the surplus in response to rising debt. Two years before the 2009 recession, South Africa adopted a counter-cyclical fiscal policy stance, which favours expanded public spending during economic slowdowns and vice versa. Fiscal policy thus became expansionary from 2009 onwards and remained so amid the continued weakness in the global economy and the fragile domestic recovery[10].

A review of major studies on South African fiscal sustainability (See, for instance, Hamilton & Viegi 2009; Burger & others 2011; Jibao & others 2011; Lusinyan & Thornton 2011) reveal that the South African government continues to provide support for the economy while ensuring sustainable public finances. Broadly, South African fiscal policy is anchored by three principles: long-term public debt sustainability, counter-cyclicality, and intergenerational equity.

- Sustainability ensures that debt remains under control so that government can continue to borrow at reasonable rates.
- Counter-cyclicality means that spending supports the economy during downturns, even if revenue is insufficient, and the accumulation of debt is reversed to build fiscal space as the economy recovers.
- Intergenerational fairness means the ability to pay for all public services with today's revenues rather than diverting the cost to future generations or denying them of the present available services unless they also share in the benefits of assets created by that spending.

Within this framework, the government has three medium-term objectives: (1) moderating expenditure growth to expand public services at a sustainable pace, (2) Stabilising debt as a share of national income by narrowing the budget deficit and (3) Improving the impact of public spending by prioritising capital investment, and reducing waste and inefficiency[11].

On paper at least, this would seem to be a wise policy move. Nevertheless, there are always other contentions as captured in this letter by former President Thabo Mbeki in his farewell address to the members of the National Executive upon his resignation as reproduced verbatim Reverend Frank Chikane (2012: 64 – 65):

At the same time, I am aware of the reality that there are some in our country who are convinced that such mistakes as we might have made, as well as the reality that in fifteen years we have not eradicated a 350-year legacy of colonialism, as we could not, derive from our strategic commitment to a reactionary, neo-liberal perspective and programme.

In addition, it is also clear that there are different views in our country with regard to the assessment of the objective national and international circumstances within which we have sought to achieve the goals of the democratic revolution.

Still, it can be said with great conviction, that South Africa has overcome adverse initial conditions and achieved a remarkable fiscal transformation over the last decade through adopting durable, credible and well-coordinated reforms as the former President went on to record on the later parts of the same address quoted above.

Lusinyan & Thornton (2009) also concluded that the estimated long-run equilibrium relation between real revenue and spending data in South Africa supports the presence of a weak deficit sustainability condition. Even though the researchers used a number of recently developed unit root and cointegration tests, the very long period considered (1895 – 2005) makes their output of little practical use to policy makers pressurized by transformation imperatives emerging after 1994. Furthermore, their approach of assuming that the fiscal adjustment processes driving the

[10] See, http://www.africaneconomicoutlook.org/fileadmin/uploads/aeo/PDF/South%20Africa%20Full%20PDF%20Country%20Note.pdf for more details in this regard.

[11] See also recent annual budget reviews published by the National Treasury such as http://www.treasury.gov.za/documents/national%20budget/2013/review/FullReview.pdf

variables towards equilibrium is linear, is suspect. As Jibao, Schoeman & Naraidoo (2011 p. 3) argue, there is reason to believe that forces driving adjustment towards equilibrium are not always present and of the same strength under all circumstances.

Globalization has meant that small open economies like South Africa have to respond appropriately to potential worldwide financial shocks and this has restricted to some degree fiscal policy discretion. As Ajam & Aron (2007 p. 746) note, globalization 'has created pressures to reform fiscal policy and budgetary systems, and also for policy convergence, including deficit reduction, tax reform to broaden the tax base (while lowering marginal rates), and the restructuring of public sector enterprises. If one also considers the imperatives of a developmental state as well as the challenges of economic transformation, then the onus on public debt managers for prudent governance is challenging indeed. Ajam & Aron (2007: 746) reiterate the standard posit of Public Finance theory to caution that the longer the response to a debt crisis is deferred, the greater and more painful the eventual adjustment needed for solvency.

The question of debt sustainability in South Africa has once again come to the fore given the rising debt occasioned by falling tax revenues since the 2008/09 global financial crisis. This is of interest especially given the fact that South Africa, unlike most advanced economies, has kept her public debt to GDP ratio below 50% since the 1960s (Burger, Stuart, Jooste & Cuevas 2011: 4). Burger, Stuart, Jooste & Cuevas (201: 5) show that the South African public debt to GDP ratio reached its post-apartheid peak in the 1996/97 year when debt service costs reached 15% of revenue to emerge among the largest expenditure items on the government budget.

In one of the most methodologically rigorous studies on fiscal sustainability and the fiscal reaction function in South Africa, Burger, Stuart, Jooste & Cuevas (2011) conclude that there is little risk that sovereign debt might become unsustainable in the near future. The study is especially of interest here because of its methodological rigor. The authors estimated fiscal reaction functions to examine how the South African government has historically reacted to its debt position. They employed the following estimation methods: Ordinary Least Squares (OLS); VAR; General Method of Moments (GMM); and Vector Error-Correction Model (VECM). They catered for non-linearities by employing State-Space and Threshold Autoregressive (TAR) modeling. In summary, all the works considered here gives one hope that the South African fiscal path is sustainable. Nevertheless, the broad questions now need to move into the details of debt composition and the risks associated with contingent liabilities where there is still a huge gap to be covered.

3 Data source and methodology

The study uses time series quarterly data from December 1997 to December 2011, obtained from the South African Reserve Bank (SARB). We use two main variables being (1) Total national net loan debt as percentage of GDP (NND) and (2) Financial Guarantees to GDP Ratio (FG) were in percentage of GDP.

3.1 Methodological framework for data analysis

This study makes use of the time series data analysis estimation technique to study the relationship between the ratio of total national net loan debt to GDP and the ratio of financial Guarantees to GDP. The estimated model is given as:

$$InFG_t = \beta_0 + \beta_1 InNND_t + \varepsilon_t \qquad (1)$$

3.1.1 Stationarity tests

In a time series analysis, estimating equation (1) using the ordinary least squares regression might provide a spurious regression if the data series are non-stationary. If the data is stationary, it means the mean and the variance are constant over time and the value of covariance between two time periods depends only on the distance between the two time periods and not the actual time at which the covariance is computed. To test for stationarity, three popular procedures are usually used. The Augmented Dickey Fuller (ADF), Phillips-Perron (PP), and the Kwiatkowski-Phillips-Schmidt-Shin (KPSS) tests.

Assuming that the series follows an AR (p) process the ADF test makes a parametric correction and controls for the higher order correlation by adding the lagged difference terms of the dependent variable to the right hand side of equation (1).

$$\Delta FG_t = \alpha + \delta FG_{t-1} + \sum_{i=1}^{n} \lambda \Delta FG_{t-i} + \varepsilon_t \qquad (2)$$

$$\Delta FG_t = \alpha + \delta NND_{t-1} + \lambda FG_{t-1} + \varepsilon_t \qquad (3)$$

However, since the ADF test is often criticized for low power, the unit root test has been complement with PP test which adopts a non parametric method for controlling higher order serial correlation in the series. In both ADF test and PP test the null hypothesis is that data set being tested has unit root. Another limitation of the ADF test is that it cannot distinguish between unit root and near unit root process. Thus, we perform a robustness check for stationary using the KPSS test where the null hypothesis is that the data series is stationary against the alternative of a unit root[12].

[12] See a similar approach by Naik, P. K. & Padhi, P. (2012) 'The impact of microeconomic fundamentals on stock prices revisited,' *Eurasian Journal of Business and Economics,* 5(10), pp. 25 – 44.

3.1.2 Cointegration tests

The unit root tests also provide the order of integration of the time series variables. Once the order of integration of the variables is established, we test for cointegration between variables using Engle Granger two step procedure. This helps to check whether the relationship between the variables is empirically meaningful in the long-run. In a multivariate context such as equation (1) above, if the variables under consideration are found to be I(1) (i.e. they are non-stationary at level but stationary at first difference), but the linear combination of the integrated variables is I(0), then the variables are said to be co-integrated (Enders, 2004). With the non-stationary series, co-integration analysis is used to examine whether there is any long run relationship exists. However, a necessary condition for the use of co-integration technique is that the variable under consideration must be integrated in the same order and the linear combinations of the integrated variables are free from unit root. Engel and Granger (1987), if the variables are found to be co-integrated, they would not drift apart over-time and the long run combination amongst the non-stationary variables can be established.

To conduct the co-integration test, three common approaches can be used. The Engel and Granger (1987) or the Johansen and Juselius (1990) or the Johansen (1991) approach can be used. The Engel-Granger two step approaches can only deal with one linear combination of variables that is stationary. In a multivariate practice, however, more than one stable linear combination may exist. The Johansen's cointegration method is regarded as full information maximum likelihood method that allows for testing co-integration in a whole system of equations.

The Johansen methods of co-integration can be written as the following vector autoregressive framework of order *p*.

$$Y_t = \alpha + \sum_{i=1}^{n} \lambda_i Y_{t-i} + \varepsilon_t \quad (4)$$

Where, Y_t is an $n \times 1$ vector of non stationary I(1) variables, α is an $n \times 1$ vector of constants, p is the maximum lag length, λ_i is an $n \times n$ matrix of coefficient and ε_t is a $n \times 1$ vector of white noise terms.

3.1.3 Vector error correction model (VECM)

To use the Johansen's method, equation (4) needs to be turned into a vector error correction model (VECM) which can be written as:

$$\Delta Y_t = \alpha + \sum_{i=1}^{p-1} \Gamma_i \Delta Y_{t-i} + \Pi Y_{t-p} + \varepsilon_t \quad (5)$$

Where Δ is the first difference operator; $\Gamma_i = -\sum_{j=i+1}^{p} \lambda_i$ *and* $\Pi = -I + \sum_{j=i+1}^{p} \lambda_i$ and I is an n×n identity matrix. The test for co-integration between the variables is calculated by observing the rank of the Π matrix via its eigen-values. The rank of a matrix is equal to the number of its characteristic roots that are different from zero. The hypothesis is $H_0 : \Pi = \alpha\beta'$ where α and β are $n \times r$ loading matrices of eigenvectors. The matrix β gives the co-integration vectors, while α is known as the adjustment parameters that gives the amount of each co-integration entering each equation of the VECM.

The aim of this study is to test the number of *r* co-integrating vectors such as *β1, β2, …… βr* . The number of characteristic roots can be tested by considering the following *trace* statistic and the maximum eigen-value test.

$$\lambda_{trace}(r) = -T \sum_{j=i+1}^{p} \ln\left(1 - \hat{\lambda}_i\right) \text{ and } \lambda_{\max}\left(r, r+1\right) = -T + \ln\left(1 - \hat{\lambda}_{r+1}\right) \quad (6)$$

Where, *r* is the number of co-integrating vectors under the null hypothesis, T is the number of usable observations and $\hat{\lambda}_i$ is the estimated value for the *i*th ordered characteristic roots or the eigen-value from the Π matrix. A significantly non-zero eigen-value indicates a significant co-integrating vector. The trace statistics is a joint test where the null hypothesis is that the number of co-integration vectors is less than or equal to *r* against an unspecified general alternative that there are more than *r*. Whereas, the maximum eigen-value statistics test the null hypothesis that the number of cointegrating vectors is less than or equal to *r* against the alternative of *r+1* (Enders, 2004; Brooks,2008).

The VECM is used to find out the short-run dynamics of the model. It overcomes the problems of spurious regression through the use of appropriate differenced variables in order to determine the short term adjustment in the model. The long term components of our variables are to obey equilibrium constraints, while short-run components have a flexible dynamic specification.

4 Results and discussion

The descriptive statistics of the two variables under investigation are presented in table 1.

The standard deviation of LFG is less than that that of LNND, suggesting that the national debt is more volatile than financial guarantees. The values of skewness and kurtosis indicate asymmetric distribution.[13] In addition, the coefficients of Jarque-Bera for both variables are not significant, suggesting that the frequency distribution of the variables is normal.

[13] The distribution is normally distributed if the value of skewness is 0 and of kurtosis is 3.

Table 1. Descriptive statistics

	FG	*NND*
Mean	0.24	34.26
Median	0.21	32.60
Maximum	0.43	48.60
Minimum	0.10	22.30
Std. Dev.	0.10	8.21
Skewness	0.53	0.32
Kurtosis	2.18	1.90
Jarque-Bera	4.20	3.85
Probability	0.12	0.15
Observations	57	57

To test for stationarity of the series, we follow the standard procedure of unit root testing. We employ the ADF test and obtain results as presented in the first column of table 2. However, one of the major criticisms of ADF in the literature is that it has low power (for example see, Cochrane, 1991). Hence, we check for robustness of our results by using the PP and the KPSS tests as indicated in the second and third columns respectively. The results considered 5% level of significance in deciding whether to reject or accept the null hypothesis.

Table 2. Unit root tests for stationarity

Variables	*ADF Test*	*PP test*	*KPSS Test*	*Order of integration*
	Ho: Variable is non-stationary	*Ho: Variable is non-stationary*	*Ho: Variable is stationary*	
LFG	-1.873	-1.834	0.748***	
D(LFG)	-6.332***	-6.347***	0.359	I(1)
LNND	-1.691	-1.154	0.751***	
D(LNND)	-1.224	-1.255	0.201	
DD(LNND)	-4.671***	-4.327***	0.343	I(2)
Asymptotic critical values				
1%	-3.555	-3.553	0.739	
5%	-2.916	-2.915	0.463	
10%	-2.596	-2.595	0.347	

Note: Reject Null hypothesis at 10 %(*), 5 %(**), 1 %(***) significant level

The results reveal that LFG is non-stationary at level with intercept, but becomes stationary after first difference at all levels of significance. This suggests that the series is integrated of order 1, I(1). However, the results also reveal that LNND only becomes stationary after second difference, suggesting that the series is integrated of order 2, I(2).

To test for cointegration, we use the Engel and Granger's two step procedure and the Johansen cointegration test for robustness checks. However, we first chose the optimal lag order. According to LR, FPE and AIC we should use maximum 7 lags, but the SC and the HQ shows that we should use the maximum 2 lags. We therefore use 7 lags as our optimum leg length.

Table 3. VAR lag order selection criteria

Lag	*LogL*	*LR*	*FPE*	*AIC*	*SC*	*HQ*
0	-81.62639	NA	0.140998	3.716728	3.797025	3.746662
1	19.21137	188.2305	0.001906	-0.587172	-0.346283*	-0.497371*
2	23.56298	7.736208	0.001880	-0.602799	-0.201319	-0.453131
3	23.77895	0.364748	0.002231	-0.434620	0.127453	-0.225085
4	25.35088	2.515086	0.002500	-0.326706	0.395959	-0.057304
5	33.01733	11.58485	0.002144	-0.489659	0.393598	-0.160390
6	35.37577	3.354235	0.002338	-0.416701	0.627148	-0.027564
7	45.13063	13.00648*	0.001845*	-0.672473*	0.531969	-0.223469
8	48.10127	3.696789	0.001982	-0.626723	0.738311	-0.117852
9	53.07949	5.752617	0.001963	-0.670200	0.855426	-0.101462
10	56.47809	3.625166	0.002107	-0.643470	1.042748	-0.014865
11	58.10961	1.595263	0.002475	-0.538205	1.308606	0.150268
12	59.79742	1.500276	0.002944	-0.435441	1.571962	0.312899

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

We then test for cointegration. In using the Engle Granger cointegration two step procedure, the first step invole running the regression, which produce the following cointegrating equation:

$$LnFG_t = 2.69387 - 1.201834\, InNND_t + \varepsilon_t \quad (7)$$

Where $\varepsilon_r = LnFG_t + 1.201834\, InNND_t + 2.69387$

The second step involved testing for units roots in ε, we got the following result for both the ADF and PP as follows:

Table 4. Unit root test of time series with ADF and PP tests (at intercept only)

	ADF TEST			***P.P TEST***			
Variables	***t-values (lags)***	***5% critical value***	***SIC***	***t-values (Bandwidth)***	***5% critical value***	***SIC***	***Order of integration***
ε_t	-4.452361	-2.915522	-1.28825	-4.526903	-2.9155	-1.28825	I(1)

Note: Reject at 10 %(*), 5 %(**), 1 %(***) significant level

The results based on the Engle Granger cointegration test suggest that the residuals are stationary at first differences. The results suggest that there is no long run relationship between our variables. This is because the residuals are integrated to the same order as FG. However, due to the weaknesses that have been much discussed in the literature (for example, Sjo, 2008), we also perform the Johansen cointegration test.

Table 5. Johansen cointegration test

Hypothesised no. of CE (s)	***Trace statistics***	***0.05 Critical value***	***Probability*****	***Max-eigen statistics***	***0.05 Critical value***	***Probability*****
None*	30.97704	15.49471	0.0001	17.47290	14.26460	0.0150
At most 1*	13.50415	3.841466	0.0002	13.50415	3.841466	0.0002

Note: *denotes rejection at the 0.05level, **MacKinnon-Haug-Michelis (1999) p-values

The trace and maximum eigen value statistics identify two cointegrating vectors. However, this result yields a different result to the result obtained the ADF two step procedure. Therefore we conclude that there is no cointegration between FG and NND.

We proceed to analyse the short-run relationship through the ECM. The results show that the error correction term, ECT (-1) is significant, the estimate of the equation is theoretically correct since the sign of the ECT is negative and with a high absolute t-statistics value of -0.530704. In the short run, the coefficient of changes in the previous period of D(LFG) is positive and insignificant while D(LFG) and D(LNND) at lag one and two are significant in determining D(LFG). D(LFG(-2) and D(LNND(-1) are negatively related to D(LFG) while D(LFG(-1), D(LNND), D(LNND(-2)) are positively related to D(LFG). R square is 0.109979 and Adjusted R square is -0.003641. The regression is spurious hence confirming the cointegration results that there is no long run relationship between LFG and LNND.

After the error correction model, we examined if the model was well specified. Results of the summary of diagnostic tests are presented in tables 4. Therefore, we conclude that although there is no long run relationship, the regression model was good and well specified.

Table 6. The summary of diagnostics and stability tests

Tests	***H_0***	***Test Statistics***	***P-Value***	***Conclusion***
Breuch-Godfrey LM test	No serial correlation	nR^2=1.078183	0.5833	There is no serial correlation
WHITE	No heteroskedasticity	nR^2=13.15439	0.9882	There is no heteroskedasticity
RESET test(stability)	Misspecification of model	F=02.515056	0.1196	The model is not misspecified

The results from the Autoregressive distributed lag model indicate that the past value of LFG is significantly affect its present value positively. A 1% increase in the pass value of LFG will cause LFG to increase by 99.0664%. LNND does not significantly affect LFG, hence the pass value LFG significantly affects it present value of LFG.

Since cointegration does not mean causation, our result shows that LNND does not Granger cause LFG but LFG Granger causes LNND at a 5 % level of significance as shown in the Table 4 below. As such,

we reject the null hypothesis and accept the alternative. This result implies that, changes to LFG affect LNND but changes in LNND will not affect LFG. The causality is unidirectional, from LFG to LNND. This means that the past values of LFG have a predictive ability in determining the present value of LNND while the past value of LNND does not have a predictive ability in determining LFG. The implication of these results is that, LFG should be targeted first. This is because by targeting LFG, it will affect LNND.

Table 7. Results on granger causality

Null Hypothesis	*Observations*	*F Statistics*	*Probability*
LNND does not Granger Cause LFG		0.88551	0.4189
LFG does not Granger Cause LNND	55	4.49949	0.0160

4 Conclusion

This study examined the impact of financial guarantees on debt sustainability in South Africa. The results reveal that although there is no long-run relationship between the two variables, the pass value of financial guarantees significantly affects it present value. Also, the past value of financial guarantees has a predictive ability in determining the present value of debt sustainability. These findings may be contrary to what would be expected in the case of South Africa considering that the country is managing the issuance of financial guarantees prudently and that at present levels, there is no need for a radical policy shift.

Nevertheless, given the populist demands regarding the management not only of state-owned enterprises but the role of the state in the economy, we need to keep a watchful eye lest the temptation proves too great and caution is thrown to the wind. Like with any other country, the challenge for South Africa is to continually devise ways of increasing social as well as infrastructure expenditure at a sustainable rate and to enhance the quality of service delivery, to avoid undermining the impressive fiscal stability gains at the macroeconomic level and ensure continued inclusive prosperity.

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THE IMPACT OF RISK ON THE FINANCIAL PERFORMANCE OF SMALL MEDIUM ENTERPRISES IN THE CONSTRUCTION INDUSTRY IN EASTERN CAPE, SOUTH AFRICA

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Abstract

Risk management has become the driving force for business success due to the everchanging business environment. The purpose of this study is to investigate the impact of the level of awareness and use of risk management techniques on the financial performance. The data was collected from 82 of Small Medium Enterprises (SMEs) owners/managers in the construction industry in Eastern Cape, South Africa. The results show that the level of awareness and use of risk management techniques have a significant impact on the financial performance of SMEs in the construction industry. The study recommends that the government, tertiary institutions, construction industry development board, and SME owners or managers in the construction industry should work together in improving the level of awareness and use of risk management techniques.

Keywords: Financial Performance, Risk Awareness, Risk Management Techniques, Small Medium Enterprises

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1 Introduction

Small, medium and micro entreprises (SMEs) are continuously gaining recognition as vital tools for economic and social development in most countries throughout the world (Abor and Quartey, 2010). According to Abor and Quartey (2010), in the Republic of South Africa, it is estimated that 91% of the formal business entities are SMEs. Fatoki and Garwe (2010) pointed out that SMEs contribute between 52 to 57% to GDP and provide about 61% to employment. Ofori (2009) suggests that SMEs in the construction industry play a crucial role in sustaining and stimulating the economic activities of SMEs in the other sectors of the economy. This clearly shows that SMEs in the construction industry play a significant role in the South African economy and most countries in the world. Ofori (2009) agrees that the development of SMEs in the construction is a critical issue to most countries since they have a major role to play in the provision of adequate and high quality infrastructure.

Despite the above mentioned benefits to the economy, Boateng (2004) points out that SMEs encounter a number of challenges in their endavour of conducting business activities such as lack of management, financial, and marketing skills. It is estimated that the failure rate of SMEs in South Africa is 75% within their first five years of inception (Fatoki and Garwe, 2010). Musara (2012) points out that SMEs also face a challenge of stiff competition from large business firms since they operate in the same business environment. Fatoki and Garwe (2010) argue that lack of education and training are some challenges hampering the growth and sustainability of SMEs. Musara and Fatoki (2011) found out that access to financial resources is the major challenge impeding the survival of most SMEs (SMEs in the construction industry included) in South Africa. Ofori (2009) agrees that SMEs in the construction industry also encounter challenges faced by SMEs in the the other sectors of the economy, however, they also encounter additional unique challenges which are inherent in the construction industry. Such challenges include cost overruns, late completion of projects, inadequate health and safety, poor or incorrect designs and management of construction projects (Flyvbjerg, 2005).

Maas and Herrington (2006) maintain that access to financial resources in the SME sector is one of the major challenges that result in the high failure rates of SMEs in South Africa. Fatoki and Garwe (2010) are of the view that approximately 50% to 60% of credit applications made by SMEs to banks and lending firms are rejected. While the limited access to

financing constrains SME growth, it also causes heightened emphasis on the cash flows that a business generates and hence the necessity to reinvest these earnings to bolster growth.

Organisation of Economic Co-operation Development (OECD) (2010) posits that any interruption of expected earnings and any disaster or sudden misfortune will have a significant impact on SME's financial capacity or performance. Bizco Business Consulting (2012) suggests that the survival of SMEs depends on managing risks. Thus risk management techniques become a vital tool for the survival, financial perfomance and success of SMEs. However, Smit (2012) points out that most SME owners (construction industry included) in South Africa are unaware of risks and methods of assessing risks in the business environment. Smit and Watkins (2012) point out that SME owners or managers are ignorant relating to the risks faced by their enterprises. Patsis (2007) argues that studies on risk management in SMEs are limited and also many SME owners think they are not at risk because of the size of their business. Studies on risk management in SMEs are very sketch and hence most SME owners might think that they are not at risk because of the size of their business (Patsis 2007). In light of the above discussion, it is imperative to examine the impact of level of awareness and use of risk management techniques on the financial performance of SMEs.

Therefore, the the present paper reviews the impact of the level of risk awareness and use of risk management techniques on the financial performance of SMEs in the Construction Industry in South Africa. The following section presents the definition of risk, risk management; various risks found in the construction industry and risk management techniques. In addition, theories which support the implementation of risk management techniques are discussed.

2 Literature review

2.1 Risk defined

Cretu, Stewart & Berends (2011), state that risk results from an exposure to the consequences of uncertainty. (Cretu et al., (2011) proposed that in a construction project, risk is a chance of something happening that will have an impact on the objectives of the firm. It includes the possibility of loss or gain or variation from a desired or planned outcome, as a consequence of uncertainty associated with a particular course of action.

Anderson and Terp (2006) define risk management as a process that seeks to eliminate, reduce and control risks, enhance benefits, and avoid negative outcomes from speculative exposures. Therefore, the essence of risk management in business firms therefore becomes to maximise the potential of success and minimise the probability of future losses. Risk management involves planning for risks, analysing risks, developing risk response strategies, monitoring and controlling risks (Kerzner, 2009).

2.2 Types of risks

2.2.1 Compliance risks

Compliance risks refer to risks which arise as a result of failure to comply with the laws and regulations stipulated in a certain field or required by the government (Patsis, 2007). Failure to comply with the laws and regulations can cost business firms severely. In the construction industry, firms have to comply with laws regarding drawing contracts, obtaining tenders and placing contracts, the actual undertaking of the project up to the post completion stage (Uff, 2003). Failure to follow the stated rules and regulations will result in firms losing the contract or paying fines on failure to meet the obligations of the clients and also the government standards.

2.2.2 Productivity risk

Patsis (2007) define productivity risk as the risk which results from operational losses and poor customer service delivery. Such risks may emerge from unavailability of basic production services and operation functions. Such risk may be relevant to all production activities that contribute in some way to the overall delivery of a product or service. In the construction industry, these types of risk may be failure of the contractor to complete the construction project in time, or the contractor may erect a substandard building.

2.2.3 Reputation and loss of customer confidence

This type of risk arises as a result of failing to deliver the required services to the customers. Customers are the most crucial assets of any business hence failure to satisfy them results in establishing a bad image of the business firm and eventually losing customer confidence. This type of risk has an adverse effect on the profitability of the firm (Patsis, 2007). The efficient performance of construction firms is mainly constrained by cost overruns and failure to complete the project at the agreed time (Flyvjerg, 2005). Nassar, Nassar and Hegab (2005) argue that accurate estimation of cost is an important factor for a successful project cost management from the start of planning phase to the completion of construction. Akintoye and MacLeod (1997) states that project managers in the United Kingdom use perceived risk as the likelihood of unforeseen factors occurring. The unforeseen circumstances would impact on successful completion of the construction project. Cost, time, and quality are the factors that constrain the successful completion of the projects.

2.2.4 Financial stability risks

Construction firms offer services to both the private and public sectors. In most cases, these clients may delay to pay the contractor which results in a financial distress. This results in financial stability risk. The contractor will eventually fail to deliver the required services to the clients. Patsis (2007) states that financial stability risks may lead to major financial losses having an impact directly or indirectly on the financial stability of the organisation which results in a failure to achieve stated organisational goals and financial objectives. European Federation of Accountants (2004) states that in the case of micro and small enterprises (with headcount below 50 employees), the risk of insolvency rises significantly when the entrepreneur has insufficient technical and practical expertise to monitor the financial performance of the business alone, or simply has not enough time to do so. Thus it becomes imperative to discuss the concept of financial performance.

2.3 Risk management theories

Below is a discussion of the risk management theories.

2.3.1 Minimisation of the costs of financial distress

With respect to minimisation of the costs of financial distress Smith and Stulz (1985) developed the financial distress arguments for risk management. The theory states that by implementing risk management, a firm can increase its value thereby limiting dead weight losses of bankrupty. This increase in value arises from the reduction in deadweight costs, and an increase in debt capacity, which in turn can benefit the firm through valuable tax shields or a reduction in agency costs of excess free cash flow. Shapiro and Titman (1986) extend the costs of financial distress to include the deterioration of valuable relationships with buyers and suppliers who value long-term access to the firm, for example to provide on-going service. SMEs in the construction industry mainly encounter financial distress since most of them are exposed to late payments by their clients.

2.3.2 Investment policy

A number of authors argue that firms which do not implement risk management strategies will eventually end up pursuing suboptimal investment policies (Stulz, 1996; Froot, Scharfstein, and Stein 1993). Studies conducted by these authors stipulate that there is a strong link between cash flow and investment due to capital market imperfections, typically information asymmetries. When a firm's cash flow is limited, obtaining additional financing is very costly, inducing the firm to scale back value-maximising investments. Risk management programs that break this dependence of investment on cash flow can maximise firm value. Froot, Scharfstein, and Stein's theory suggests that firms with key planned investment programs and costly external financing would be inclined to use risk management to avert the need to access costly external financing to continue these programs.

2.3.3 Managerial risk aversion

Smith and Stulz (1985) and Stulz (1984) focus on managerial risk aversion as a driver of corporate risk management. The theory states that managers whose human capital and wealth are poorly diversified prefer to reduce the risk to which they are exposed. Smith and Stulz's (1985) model predicts that managers with greater stock ownership would prefer more risk management, while those with greater option holdings would prefer less risk management, because shares provide linear payoffs as a function of share prices whereas options provide convex payoffs.

2.4 Risk management techniques

There are various risk management techniques which are used for the identification of risks. However, a number of studies which have been conducted worldwide show that brainstorming is mostly used in identification of risks in the construction industry (Tworek, 2010; Chihuri and Pretorius, 2010). Table 1 shows the different techniques and ways of identifying risks.

The results in table 2 indicate that in terms of project risk identification techniques show that the brainstorming (36%), predomibnates followed by interviews (23%) and the lowest being assumption analysis (2%).

2.5 Financial perfomance

Codjia (2010) points out that a statement of financial performance is an accounting summary that details a business organisation's revenues, expenses and net income. Codjia (2010) further points out that a statement of financial performance is also referred to as statement of profit and loss or statement of income; and a corporation may prepare a statement of financial performance on a monthly, quarterly or annual basis. Ismaila (2011) argues that financial performance measurement can be one of the biggest challenges faced by businesses in the SME sector, especially with regard to their survival, if management is not trained on how to manage finance and measure performance. Mosalakae (2007) highlights that performance measures are the life blood of organisations, since without them, no decisions can be made. However, Mbonyane (2006) argues that SMEs fail because more often than not, cash flow is not properly managed.

Table 1. Techniques, examples and templates for identifying risks

Technique	*Strengths*	*Weaknesses*
Assumptions & constraints analysis	1) Simple structured approach 2) Can be based on assumptions and constraints already listed in project chatter 3) Generate project specific risks	1) Implicit/hidden assumptions and constraints are often missed.
Brainstorming	1) Allows all participants to speak their mind and contribute to the discussion 2) Can involve all key stakeholders 3) Creative generation of ideas	1) Requires attendance of key stakeholders at a workshop, therefore can be difficult to and expensive 2) Prone to Groupthink and other group dynamics 3) May produce biased results if dominated by a strong person (often management) 4) Often not well facilitated 5) Generates non-risks and duplicates, require filtering
Cause and Effect (Ishikawa) Diagrams	1) Visual representation of project promotes structured thinking	1) Diagram can quickly become over-complex
Check lists	1) Captures previous experience 2) Present detailed list of risks	1) Checklist can grow to become unwieldy 2) Risks not on the list will be missed 3) Often only includes threats, misses opportunities
Delphi technique	1) Captures input from technical experts 2) Removes sources of bias	1) Limited to technical risks 2) Depends on actual expertise of expects 3) May take longer time than available due to iterations of the experts inputs
Document review	1) Exposes detailed projects specific risks 2) Requires no specialist tools	1) Limited to risks contained in project documentation
FMEA/Fault Tree Analysis	1) Structured approach, well understood by engineers 2) Good tool support	1) Focuses on threats not so useful for opportunities 2) Requires expert tool not generally available to those except experts
Force Field Analysis	1) Creates deep understanding of factors that affect project Objectives	1) Time-consuming and complex technique 2) Usually only applied to a single objective, so does not provide whole project view
Industry knowledge base	1) Captures previous experience 2) Allows benchmarking against external organizations	1) Limited to what has previously happened 2) Excludes project-specific risks
Influence Diagrams	1) Exposes key risk drivers 2) Can generate counterintuitive insights not available through other techniques	1) Requires disciplined thinking 2) Not always easy to determine appropriate structure
Interviews	1) Addresses risks in detail 2) Generates engagement of stakeholders	1) Time consuming 2) Raises non-risks, concerns, issues, worries etc, so requires filtering
Nominal Group Technique	1) Encourages and allows all participants to contribute 2) Allows for different levels of competence in common language 3) To a large extent, Auto documenting 4) Provides ideal base for affinity diagramming (grouping by risk categories for use in the Risk Breakdown Structure and Root Cause Analysis)	1) Can lead to frustration in dominant members who feel it is moving slowly

Table 1. Techniques, examples and templates for identifying risks

Technique	*Strengths*	*Weaknesses*
Post-project reviews/Lessons learned/Historical Information	1) Leverages previous experience 2) Prevents making the same mistakes or missing the same opportunities twice 3) Enhances the Organizational Process Assets	1) Limited to those risks that have occurred previously 2) Information is frequently incomplete: details of past risks may not include details of successful resolution; ineffective strategies are rarely documented 3) Creative generation of ideas
Prompt Lists	1) Ensures coverage of all types of risk 2) Stimulates creativity	1) Topic can be too high level
Questionnaire	1) Encourages broad thinking to the identify risks	1) Success depends on the quality of the questions 2) Limited to the topics covered by the questions 3) Can be a simple reformatting of a checklist
Risk Breakdown structure (RBS)	1) Offers a framework for other risk identification techniques such as brainstorming 2) Ensures coverage of all types of risk 3) Test for blind spots or omissions	None
Root-Cause Analysis	1) Allows identification of additional, dependent risks 2) Allows the organization to identify risks that may be related because of their common root causes 3) Basis for development of pre-emptive and comprehensive responses 4) Can serve to reduce apparent complexity	1) Most risk management techniques are organized by individual risk. This organization is not conducive to identifying the root causes 2) Can oversimplify and hide existence of other potential causes 3) There may be no valid strategy available for addressing the root cause once it has been identified
SWOT Analysis	1) Ensures equal focus on both threats and opportunities 2) Offers a structured approach to identify threats and opportunities 3) Focus on internal (organizational strengths and weaknesses) and external (opportunities and threats)	1) Focuses on internally generated risks arising from organizational strengths and weaknesses, excludes external risks 2) Tends to produce high level generic risks, not project-specific
System Dynamics	1) Exposes unexpected interrelations between project elements (feedback and feed-forward loops) 2) Can generate counterintuitive through other techniques 3) Produces overall impacts of all included events and risks	1) Requires specialised software and expertise to build models 2) Focuses on impacts but difficult to include the concept of probability

Source: Tworek (2010)

3 Methodology

In order to achieve the objective of paper, the study employed a quantitative research methodology. The total number of SMEs in the construction industry was obtained from the CIBD database. The total active population of SMEs in the construction industry in King William's Town and Port Elizabeth was 133. The sample was calculated using the Rao-soft calculator. The researcher used a confidence level of 95% and a margin of error of 5% and the recommended sample size from the given population was 99 SMEs. A simple random sample of 99 participants was selected from the entire population of 133.

3.1 Research instrument

The study employed a self-admistered questionnaire. The questionnaire employed in the study was adapted

from a questionnaire developed by Mursic (2011). The questionnaire has been tried and tested measuring scales for risk management. However, the questions from Mursic (2011) questionnaire were modified to suit the study at hand. The study used both the open ended questions and closed ended questions in order to gather valuable information. A five point likert scale was used for closed ended questions when measuring the difference in risk levels.

Table 2. Risk identification techniques

Risk identification techniques	*Number of respondents*	*Percentage*
Brainstorming	39	36
Interviews	25	23
Delphi techniques	13	12
Documentation reviews	6	6
Risk checklists	19	18
Assumption analysis	2	2
Diagramming techniques	3	3
Total	107	100

Note: Adopted in Chihuri and Pretorius (2010)

3.2 Pretesting, reliability and validation

The questionnaire was pretested using 10 randomly sampled academic staff from the faculty of commerce. The feedback from the 10 respondents was used to make the necessary minor changes to ensure validity of the questionnaire. In addition, SPSS version 17 was used to analyse the gathered data. Statistical tests such as Chi-square-tests and cross tabulation.

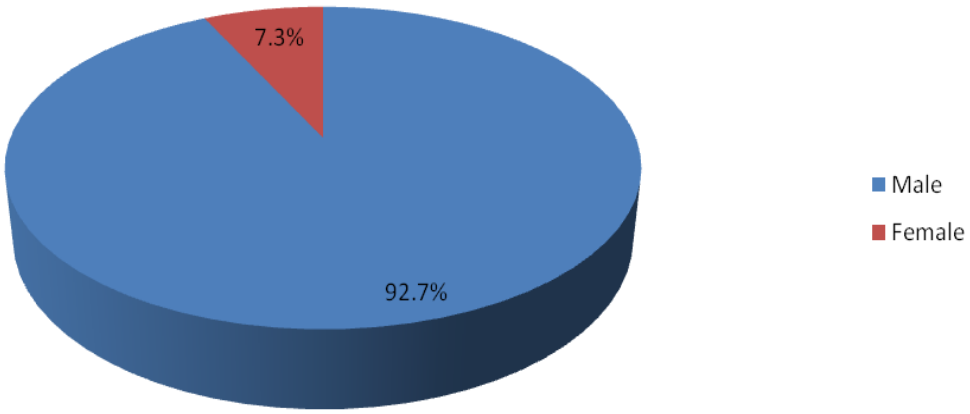
4 Results and discussion

4.1 Response rate

A total of 87 questionnaires were returned by the research participants. However, only 82 accurately completed bringing the effective response rate of the study being 83%. The effective response rate obtained was considered adequate to conduct data analysis and reporting as proposed by Rubin and Babbie (2009) since it is above 50% which is the benchmark for conducting data analysis and reporting.

Figure 1 indicates that males (92.7%) dominate in the construction industry as opposed to females (7.3%). The results are consistent with a study conducted in South Africa by Geertema (2007), who determined that women constitute approximately 10% of employees in the construction industry in South Africa.

Figure 1. Gender of respondents



Geertema (2007) further observes that the percentages of women professionally qualified or who are being leaders in the construction industry is even less. Madikizela and Haupt (2010) conducted a study on factors influencing women's choice of careers in the construction industry in South Africa. They determined that the challenging work environment, the dangerous nature of construction industry, the inability to work and influence a male dominated industry, the discriminatory working environment, and the lack of knowledge of the industry were rated as being medium to high influences on some women choosing careers in other sectors rather than the construction industry. The aforementioned influences act as barriers to women working in the construction industry.

Table 3. Respondent's status in business

Status	*Frequency*	*Percentage*
Owner	69	84.1
Manager	13	15.9
Total	82	100

The findings in Table 3 indicates that 69 of the respondents representing 84.1% of the total

respondents surveyed were the owners of the business while 13 respondents representing 15.9% of the total research participants were managers. The results of the survey show that the majority of the research participants were SME owners. The results are consistent with a study conducted by Musara (2010). Musara (2010) determined that 79% of the research participants were SME owners whilst 21% were managers.

The results in table 4 show that 66.7% of the research participants hold bachelor's degrees , followed by diploma holders (25.6%) and honours degree with (18.3%.) The results show that no research participant had qualifications below certificate level. This shows that all of the research participants had some formal education since they possess a certificate, diploma or a degree. The level of education possessed by the research participants assured a relatively high level of awareness and quality of responses from the concepts and questions asked. The results of the current study are consistent with the findings by Agumba (2006), who conducted a study in the Gauteng Province and found out that personnel managing SMEs in the construction industry possessed at least a tertiary qualification.

Table 4. Respondent's level of education

Educational Level	*Frequency*	*Percentage*
Master's Degree and above	5	6.1
Honours Degree	15	18.3
Bachelor's Degree	34	41.5
Diploma	21	25.6
Certificate	7	8.5

The results in table 5 presented show that 42.7% of the respondents specialise in the residential construction, 8.5 % specialise in the institutional and commercial construction industry, 38 representing 46.4% specialise in the industrial construction and 2.4% specialise in the other sectors of the construction industry.

Table 5. Area of specialisation of the business

Area of specialisation	*Frequency*	*Percentage*
Residential	35	42.7
Institutional and	7	8.5
Highway	0	0
Civil construction	0	0
Industry	38	46.4
Other	2	2.4
Total	82	100

The results also show that there were no respondents who specialise in civil and highway construction. The results are consistent with a study conducted by Agumba (2006) who determined that there were no SMEs which specialised in the civil engineering. The findings by Agumba (2006) further show that most SMEs in the construction industry dominated in the home improvement (residential construction) and building construction (industrial).

Table 6 shows that 37.8% of the respondents' firms have been in operation for a period between 1-5 years, followed by 6-10 years with 28%. The results also show that the period above 25 years was the least which occupied 4.9% of the research participants.

Table 6. Responses on the period the business has been in operation (in years)

Period (In Years)	*Frequency*	*Percentage*
1-5	31	37.8
6-10	23	28
11-15	11	13.4
16-20	8	9.8
21-25	5	6.1
Above 25	4.	4.9
Total	82	100

The results further show that 62.2% of SMEs in the construction industry have been in operation for a period of more than 5 years. The results are consistent with findings by Agumba (2006) who determined that 10 out of 15 SMEs investigated in Gauteng have been in operation for a period of more than 5 years. However, the results are inconsistent with the findings by Fatoki and Odeyemi (2010) who found out that the failure rate of SMEs is 75% within the first five years of operation.

The results displayed in table 7 show that 63.4% of the respondents who took part in the research study employed between 1 to 50 employees, 25.6% employed between 51 to 100 employees, 6.1% employed between 101 to 150 employees and finally 4.9 % of the respondents employed between 151 to 200 employees. In relation to the definition proposed by the national small business act of South Africa, 1996 and as amended in 2003, the results show that 63.4% of the research participants are small enterprises and the remaining 36.6% are classified as medium enterprises.

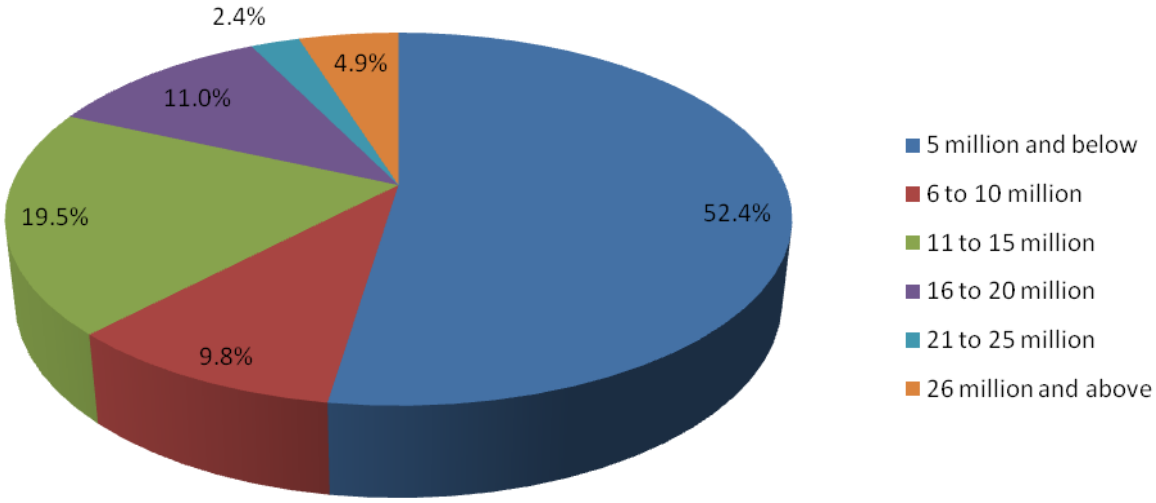
Table 7. Size of the business

Number of Employees	*Frequency*	*Percentage*
1-50	52	63.4
51-100	21	25.6
101-150	5	6.1
151-200	4	4.9
Total	82	100

The findings in figure 2 show that the firms which were surveyed fulfilled the requirements of being classified as small and medium enterprises in line with the definition proposed by the Construction Industry Development Board (CIDB) and the National

Small Business Act of South Africa of 1996. According to the definition of SMEs in the construction industry in relation to annual turnover (small contractors with a maximum turnover of 5 million), 43 of the respondents representing 52.4% of the interviewed contractors belonged the small enterprises category.

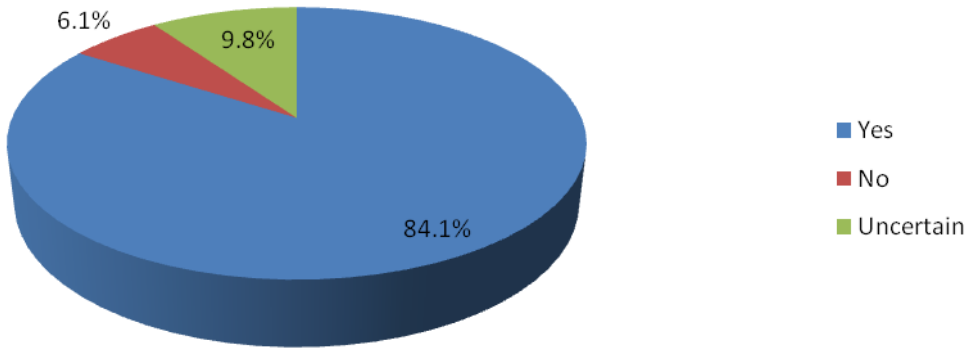
Figure 2. Respondent's range of annual turnover



In addition, 40.3% fell in the medium enterprises category (firms which had an annual turnover between 6 to 20 million). The results further show that 7.3% of the firms surveyed had an excess of the required maximum turnover (had maximum turnover in excess of 20 million). However, these SMEs satisfied the requirements of the definition based on the number of employees. The results are consistent with the results by Agumba (2006) who found out that the majority of SMEs are small contractors.

Figure 3 shows that 84.1% of the research respondents, had risk management policy in their businesses, 5 respondents, which represents 6.1% of the research respondents had no risk management policy, whilst 9.8% of the research participants were uncertain about the availability of risk management policy. The results further reveal that the majority of the research participants (84.1%) had risk management policy in place. The results are consistent with the results of a study conducted by Adnan, Omar and Jusoff (2008) who found out that for companies with formal statement on their risk management, 80% have goals, objectives, strategies and 80% have performance indicators. The results are also in line with the goals of the CIDB which maintains a register of all contractors in order to support risk management in the construction industry (Government Gazette, 2000).

Figure 3. Availability of risk management policy



The results displayed in table 8 shows that the highest mean on communication of risks (3.76) by SMEs in the construction industry falls under the reputation and loss of customer confidence, whilst discussion on legal/compliance risk carries the lowest mean of 3.28. The results further show that all SMEs in the construction industry communicate/discuss the legal/ compliance risks, productivity risk, financial stability risk, financial stability and the reputation and loss of customer confidence risks since all their means are above the neutral (3) point (Musara, 2010). The results are in line with the recommendations proposed

by Bernstein, Russo and Laquidara-Carr (2011) who recommend that firms in the construction industry may mitigate risks by communicating with other team members throughout the projects.

Table 8. Communication of risks by small and medium contractors

Nature of risk	*N*	*Minimum*	*Mean*	*Std. Deviation*
Legal/compliance risk	82	1	3.28	1.210
Productivity risk	82	2	3.72	0.920
Reputation and loss of customer confidence	82	2	3.76	0.810
Financial stability	82	1	3.43	1.066
Valid N (listwise)	82			

Table 9 shows that there is a significant relationship between awareness and use of risk management techniques on the financial performance of SMEs in the construction industry since the p-value of 0.00 obtained is less than 0.05. Therefore, a null hypothyesis which states that the level of awareness and use of risk management techniques has no significant impact on the financial performance of SMEs in the Construction Industry in South Africa is rejected.

Table 9. Correlation between level of awareness and use of risk management techniques on the financial performance of SMEs

	Awareness and Use of RMT	*Financial Performance*
Awareness and use of RMT pearson correlation	1	.744**
Sig. (2-tailed)		.000
N	82	82
Financial Performance pearson correlation	.744**	1
Sig. (2-tailed)	.000	
N	82	82

5 Conclusion and recommendations

The results of the study reveal that there is a significant relationship between awareness and use of risk management techiniques on the financial performance of SMEs in the construction industry. The results also showed that there is a low level of awareness and use of risk management techniques by SMEs in the construction industry. In addition, the results also show that the majority of the respondents proposed that the provision of training and seminars on risk management and risk management techniques and the introduction of courses and programmes related to risk management in schools, colleges and universities improves the ways of promoting awareness and use of risk management techniques. Based on the results obtained, the following recommendations were made:

5.1 SME owners and managers

The results obtained from the empirical study revealed that SME owners and or managers have a low level of awareness and use of risk management techniques. Hence, SME owners or managers should make use of risk management programmes, short courses or lessons provided by tertiary institutions and schools in order to improve their level of awareness and use of risk management techniques. In addition, SME owners and managers should encourage employees to take advantage of risk management programmes offered by schools and tertiary institutions to improve their level of awareness and use of risk management techniques since they are the ones mainly involved in executing construction projects and are at risk often. The improved level of awareness and use of risk management techniques will also improve the quality of the construction projects.

5.2 Construction Industry Development Board (CIDB)

The CIDB should develop and enforce a universal auditing mechanism which should be used by all contractors. If any non-compliance cases are identified, fines and penalties should be charged to defaulting parties. In addition, The CIDB should employ individuals who are responsible for assessing the compliance and non-compliance of laws and legislation formulated by the CIDB. The employees will also have a mandate of conducting site inspection to ensure that contractors are implementing risk management techniques.

5.3 The government

The government should continuously work with the CIDB in enforcing rules and legislation which improves compliance in risk management. In addition, the government should offer incentives to contractors implementing risk management techniques and also promote programmes which improve the level of awareness and use of risk management techniques.

5.4 Further education and training institutions and tertiary institutions

Further education and training institutions and tertiary institutions should play a critical role in providing training on awareness and use of risk management techiniques since they possess the much needed expertise and resourses. Furthermore, awareness campaigns on the importance of risk management

techniques should be launched by institutions of higher education.

6 Limitations and areas of further research

Due to time and budgetary constraints, the study at hand only focused on SMEs conducting construction activities in King William's Town and Port Elizabeth in the Eastern Cape Province of South Africa. Care should be exercised in the interpretation and the application of the results of this study and the generalisation of the findings to the whole of South Africa. Therefore, future research studies should include other provinces and other countries. The impact of education and training on improving the level of awareness and use of risk management techniques may also be examined in future studies.

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INVESTIGATING SMALLHOLDER FARMERS' EXCLUSION FROM CREDIT MARKETS IN SOUTH AFRICA

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Abstract

Access to credit by smallholder farmers in South Africa has been empirically observed to be characterised by a variety constraints. This paper examines the demographic, financial and economic characteristics of smallholder farmers in order to gain a better understanding of why smallholder farmers are excluded from formal credit markets. The paper uses survey data collected from 362 smallholder farmers randomly selected from Mpumalanga and North West Provinces of South Africa. Using descriptive analysis, the paper observes that smallholder farmers have low annual turnover, low demand for credit and often with a family culture not to borrow. The paper concludes that smallholder farmers in South Africa are still financially excluded, particularly from the formal banking systems. Results of this paper demonstrate a need for a review of financial policies in favour of increasing the supply of financial services, particularly credit to smallholder farmers if South Africa is to achieve its Millenium Development Goals of employment creation and poverty alleviation.

Keywords: Credit, Smallholder Farmers, South Africa, Exclusion

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1 Introduction

The strategic importance of the agricultural sector remains unchallenged because of its potential to create employment and the role it plays in ensuring food supply and security in South Africa and elsewhere in the region (Irz et al., 2001). There are an estimated 800 million people who are facing starvation in developing countries (Food and Agricultural Organisation, FAO, 2004). It is also estimated that 200 million people from Sub Saharan Africa are categorised as hungry (FAO, 2004). Specifically, Southern Africa (which includes South Africa) is characterised by drought has been hit by severe chronic food insecurity. Claims have been advanced that the performance of the agricultural sector has been hampered by the lack of access to bank credit (Coetzee, 2002, Chisasa and Makina, 2012 and Chauke at al., 2013). Further evidence has been provided that an increase in doses of credit induces a positive and significant influence on agricultural output growth. Formal large-scale commercial farmers have successfully accessed collaterised credit due to their ownership of title to land. This is not true for the marginalised smallholder farmers. Evidence from Chisasa and Makina (2012), Mudhara (2010) demonstrated that smallholder farmers have limited access to formal bank credit leaving them with growth constraints. Thus an examination of the characteristics of smallholder farmers is essential in order to determine the reasons why they are excluded from the formal credit markets.

"Since democracy, limited efforts have been made to further develop the financial sector and the banking sector has been unsuccessful in introducing new non-deposit financial products to attract more savings from the wider population" (Akinboade and Makina, 2006:125). Yet financial markets are ones in which funds are transferred from those with surplus funds to those in a deficit position. Financial markets such as bond and stock markets can be important in channelling funds from those who do not have a productive use for them to those who do, thereby resulting in higher economic efficiency (Mishkin, 1992:11). This sub-section reviews financial sector development in South Africa.

2 Structure of the financial sector

By the standards of the economies of emerging markets, South Africa is considered to have one of the most developed and highly sophisticated financial systems (Odhiambo, 2011:78). The financial sector in South Africa is made up of the banking sector, stock market and the Bond Exchange of South Africa (BESA).

2.1 The banking sector

The South African Reserve Bank (SARB) sits at the helm of the banking sector. As the central bank of the Republic of South Africa, the SARB has several responsibilities. Established in 1921, its major objective is to achieve and maintain price stability,

and in pursuit of this objective it governs monetary policy within a flexible inflation-targeting framework. Over and above its monetary policy management function and contribution to financial stability, the SARB is responsible for domestic money market liquidity management, the production and issuing of notes and coins, the management of gold and foreign exchange reserves, oversight of the National Payment System, bank regulation and supervision and administering of exchange control measures (SARB, 2012). The SARB operates as an autonomous institution. However, there is constant liaison with the National Treasury, assisting in the formulation and implementation of macroeconomic policy.

South Africa was characterised by a dominant private banking sector until the 1950s. During this era, products such as personal loans, property leasing and credit card facilities were not being offered by commercial banks. Since then, new institutions such as merchant banks, discount houses and general banks emerged and started to bridge this gap. In response, commercial banks started to diversify their portfolios, introducing medium-term credit arrangements with commerce and industry. They acquired hire-purchase firms and leasing activities and spread their tentacles into insurance, manufacturing and commercial enterprises (Akinboade and Makina, 2006:107). Further developments were witnessed as building societies were abolished in terms of the Deposit-taking Institutions Act of 1991 to avoid overlaps between services offered by commercial banks and building societies. This measure brought the South African baking sector in line with international practice. The 1990s witnessed further metamorphoses of the banking sector, leading to the amalgamation of four of South Africa's leading banks, namely Allied Bank, United Bank, Volkskas and Sage Bank, to form the largest banking group in the country, the Amalgamated Banks of South Africa (ABSA) in February 1991. More developments were to come, as banking services were taken to previously disadvantaged communities in the mid-1990s. To date, the banking sector has reached all sectors of the South African economy, playing the all-important financial intermediary role, as demonstrated by the amount of credit extended to all sectors of the economy (see Table 1). However, agriculture still receives less than 2% of total credit supplied by the domestic banks. This is in spite of the fact that agriculture contributes more to the GDP (2.3%) than the other sectors, for example wholesale, retail and motor trade; catering and accommodation (2.2%), manufacturing (0.8%) and transport and storage (1.9%) (Stats SA, 2014), which receive more credit, as shown in Table 1.

Table 1. Sectoral distribution of credit to the private sector, %

Sector	*2010*	*2011*	*2012*
	Mar	*Mar*	*Mar*
Agriculture, hunting, forestry and fishing	1.61	0.40	1.90
Mining and quarrying	3.08	0.50	2.20
Manufacturing	3.55	0.70	3.60
Electricity, gas and water supply	0.93	1.00	1.00
Construction	1.47	0.80	0.50
Wholesale and retail trade, hotels and restaurants	3.72	3.40	3.50
Transport, storage and communication	2.75	3.10	3.20
Financial intermediation and insurance	22.27	20.42	19.12
Real estate	5.45	7.99	6.46
Business services	4.58	3.59	3.64
Community, social and personal services	4.84	6.88	8.06
Private households	38.77	43.48	41.95
Other	6.97	7.61	4.87
Total	100.00	100.00	100.00

Source: SARB, 2012

In South Africa the financial services sector is fragmented. It is characterised by a well-developed formal banking system on the one hand and a competitive and fast growing informal financial market. An increased investment in information technology has increased the level of competition resulting in formal banking institutions fostering fee-based income growth strategies. Such a competitive environment would ordinarily be expected to enhance the efficient allocation of resources through the intermediary role of financial institutions.

What is evident from empirical literature is that the flow of finance from formal banks to smallholder farmers is thin leaving farmers to rely mainly on equity. However, smallholder farmers have not performed to their full capacity due to lack of access to credit and other financial services (Coetzee et al., 2002; Chisasa and Makina, 2012). This is against a background of growing banking assets with South Africa having survived the 2007/8 global credit crunch. The proliferation of nonbank financial institutions has not helped the situation either.

This article emphasises the exclusion of smallholder farmers from mainstream financial markets and the need to have a greater understanding of the economics of banking in South Africa.

3 Theoretical framework

Financial exclusion refers to insufficient access financial services. Thus, people who do not have bank accounts are deemed to be financially excluded (de Koker, 2005). Financially excluded people do not have long- and short-term insurance products that are ordinarily accessed by members of society. Hawkins (n.d.) defines access to financial services as the ability of consumers to:

- Make payments;
- Save and make investments;
- Manage risk;
- Obtain credit and loans;
- Make financial provision for old age.

This paper focuses on the fourth aspect, that is, the ability to obtain credit and loans.

Burkett and Sheehan (2009: Page v) define financial exclusion as 'a process where an organisation lacks or is denied access to affordable, appropriate financial products and services, with the result that their ability to participate fully in social and economic activities is reduced, financial hardship is increased, and poverty (measured by income, debt and assets) is exacerbated.' Similarly, financial exclusion also refers to inadequate access to financial services. People who are financially excluded do not have bank accounts and long- and short-term insurance products that are normally held by members of society. They are therefore excluded from participation as customers in the financial services industry.

The financially excluded are disadvantaged by their isolation from the financial system. They face the financial risks associated with cash, their access to normal consumer credit is limited and their general ability to save threatens their financial security. Financial exclusion hampers their social and economic development. It also impacts on the economic development of the country (de Koker, 2005). In order to fully understand the adverse effects of financial exclusion and the solutions thereof, it is important to explore the causes of financial exclusion.

3.1 Causes of financial exclusion

Financial exclusion may be temporary or long-term and may be complete or partial. It is caused by factors such as geographic isolation, illiteracy, costs of financial products or simply by restriction on access to such products. Those who lack access to financial services are often socially and financially vulnerable and include groups such as the unemployed, the homeless and illegal immigrants. Khan and Hussein (2011) identified distance to the bank, number of visits to take the loan, high transaction costs, bribe and corruption as factors that push farmers to the informal lenders. The education of the farmer and farm size were also observed to negate access to credit by smallholder farmers.

3.2 Geographic isolation/distance to the bank

Long distances to the source of financial services are argued to be an important factor inhibiting farmers' credit activities (Akram et al, 2008). The distance from the household to the bank is negatively related to the demand for credit by the farmer. Long distances are costly to the farmer both in terms of time and cost of travelling.

3.3 Level of education of the farmer

The farmer's level of education is negatively related to the demand for credit (Khan and Hussein, 2011). Less educated farmers encounter challenges of calculation, estimation and valuation of assets, loans and returns. They usually lack information about the credit schemes which are available in the market. Furthermore, loan officers exhibit a bad attitude towards less educated farmers thus pushing them to the informal sector where there are less rigorous application procedures.

3.4 Farm size

The poor are often excluded from formal credits partially due to lack of collateral (Yuan and Xu, 2015). Collateral is one of the instruments used by lenders in credit risk mitigation. In the agricultural sector farm land is often used for this purpose. Large-scale farmers enjoy the advantage of ownership of land to access credit. On the other hand, the small farmers, particularly subsistence farmers have no say in formal sector source of credit (Khan and Hussain, 2011). Similarly, Chisasa (2014) posits that lack of collateral worsens the position of smallholder farmers because lenders have no fallback position in the event of default.

3.5 Cost of financial products/high transaction costs

Khan and Hussain (2011) also showed that the higher cost of credit is inversely related to the demand for credit from formal sources. The farmers prefer to borrow from informal lenders. This implies that rural money lenders are dominant in providing credit to smallholder farmers. Although interest rates charged by formal lenders are prima facie lower than those charged by informal lenders, the total cost of loans increases due to other administration charges, such as monitoring, which are added on.

3.6 Bribe and corruption

Bribe and corruption make borrowing cumbersome and more expensive for farmers. To circumvent this problem, farmers resort to informal lenders. Khan and Hussain (2011) posit that bribe results in a decrease in the demand for credit from formal sources. In this regard, bribery, corruption and nepotism should be eliminated and transaction costs be reduced to a minimum in formal credit institutions.

4 Methodology

4.1 Study area

This study was conducted in Mpumalanga and North West Provinces, South Africa. The two provinces (out of nine) were chosen because of their strategic importance in maize production. Maize is the staple food in South Africa.

4.2 Sampling strategy

A multistage sampling strategy was applied to gather data from 362 respondents from both provinces. Firstly Mpumalanga and North West provinces were purposively selected because the majority of rural population earn their livelihood from farming. Secondly, simple random sampling was used to select five out of seven districts. Finally, random sampling method was used to select 100 farmers from each of the districts. The selection was based on the number of farmers registered with the African Farmers Association of South Africa (AFASA) in each district.

4.3 Statistical analysis techniques

Given the descriptive nature of the study, data was analysed using descriptive statistics. The analysis covers the socio-economic characteristics of the farmers.

5 Results and discussion

5.1 Demographic characteristics

5.1.2 Gender of the farmer

Respondents were asked to indicate their gender. Of the 362 respondents surveyed, 233 or 65.3% (n=362) of them were male while 124 or 34.7% of them were female. See Table 2 below. Although the number of female farmers is less than that of their counterparts, it is encouraging to note that there are female farmers irrespective of the intensity of work involved in farming.

Table 2. Gender

Gender	*Frequency*	*Percentage*
Male	233	65.3
Female	124	34.7
Missing	5	
Total	362	100

5.1.3 Age of the farmer

Table 3 shows the age distribution of the surveyed farmers. A majority 143 (n=362) farmers (39.5%) were found to be in the 41 – 50 year age range. Farmers in the 31 – 40 year age group were found to be substantial 32.0%. What is also interesting is that approximately 28.2 percent were found to be 30 years and below. In this case the agricultural sector is observed to have a safe future because the young farmers will replace the older ones who may have aged or passed on for that matter. These results are consistent with those of Oni et al (2005) who found rural farming households in Ose Local Government Area: Ondo State of Nigeria to be below 51 years of age (66%). However, a departure from this observation is available from Oladeebo and Oladeebo (2008) who reported a negative and significant relationship between the age of the farmer and access to credit.

Table 3. Please indicate the age of the head of the household

Age	*Frequency*	*Percentage*
Below 20	44	12.2
20 – 30	58	16.0
31 – 40	116	32.0
41 - 50	143	39.5
Over 50	1	3
Total	362	100

5.1.4 Marital status

Respondents were asked to indicate their marital status. Approximately 49 percent were married while 29 percent were found to be single. However, some were either widowed (12%), divorced (4%) or separated (6%). Figure 1 below is illustrative. These results show that most rural families consider farming among other sources of income as an important source of livelihood.

5.1.5 Level of education

Respondents were asked to indicate their level of education. Figure 2 shows the respondent distribution according to the level of education. Disappointingly, only 3.6 percent acquired university degrees and 4.7 percent received college education in agriculture. Approximately 88.1 percent either did not go to school at all (14.7%), received primary school education (37.4%) or held a National Senior Certificate (39.6%). These results corroborate with those of Oni et al (2005) who found farmers in Ondo State only able to read and write. However, complicated bank documents require higher levels of education due to their use of technical language. The lack of higher education may result in smallholder farmers failing to access the much-needed credit from banks.

Figure 1. Marital status of the farmer, %

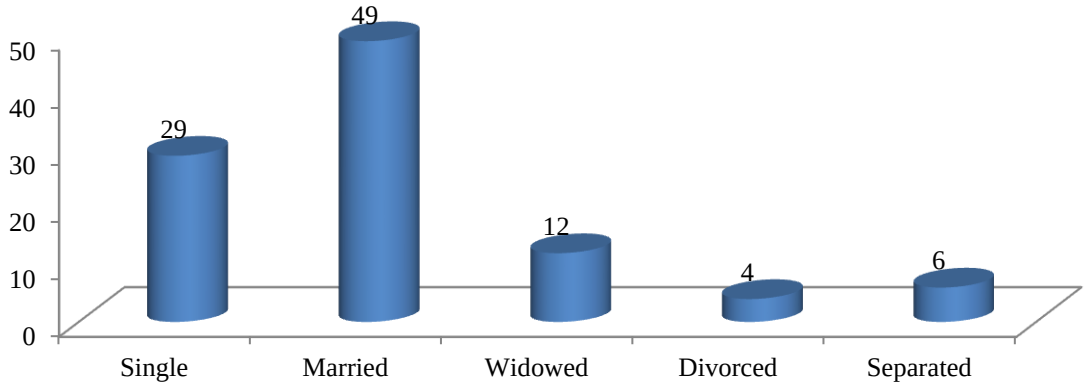
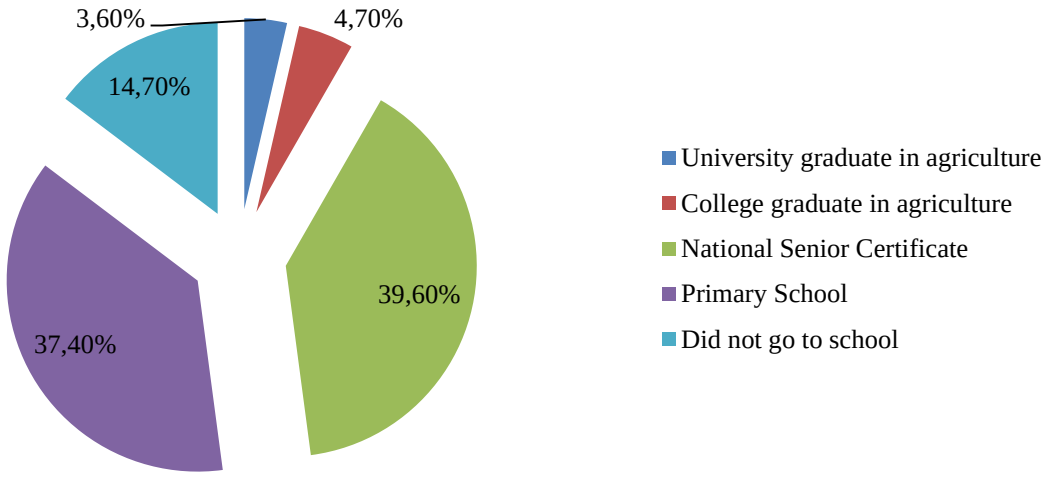


Figure 2. Level of education of the farmer, %



5.2 Production characteristics

5.2.1 Labour

One of the characteristics of smallholder farmers is that family members often form a source of labour for the farmer. When asked to indicate the number of family members, the respondents reported family sizes ranging from 1 to more than 10 family members who assist with farm work. Thus smallholder farmers rely on family labour and external workers. An analysis of the use of non-family members on the farm revealed that 74 percent of the respondents have less than 5 workers while 19 percent employed 5 to 10 workers. The small number of employees suggests that family labour is very important in supplementing external labour. Furthermore, it goes to show how small the farms are so that only a small labour force is required for the farming activities. The comparative analysis of family and non-family labour is presented below as Figure 3.

5.2.2 Type of land ownership

Respondents were asked for the form of ownership of the land on which they were farming. The purpose of this question was to determine if the farmers have legal title to the land. The majority of respondents were observed to be farming on communal land (52.1%). Others were operating as sole proprietors (24.9%), leasehold (6.9%), partnership (11.6%), or were simply renting land (4.4%). Table 4 below is illustrative. Based on this result, it can be argued that smallholder farmers are excluded from credit markets due to a lack of ownership of the land they farm on. This argument is supported by Okunade (2007) whose study showed a positive and significant relationship with accessibility to a credit facility.

5.2.3 Farm size

When asked for the size of the land on which they farm, 15 percent of the respondents indicated that they farm on less than 5 hectares while 27.8 percent have farms with 21 hectares or more. A whopping 57.2 percent were observed to be farming on farms between 5 and 20 hectares. Amao (2013) made similar observations in Odo-Otin Local Government Area of Osun State in Nigeria. The summarised results are depicted as Figure 4 below. This shows that smallholder farmers are characterised by small sizes of land on which they farm.

Figure 3. Farm labour

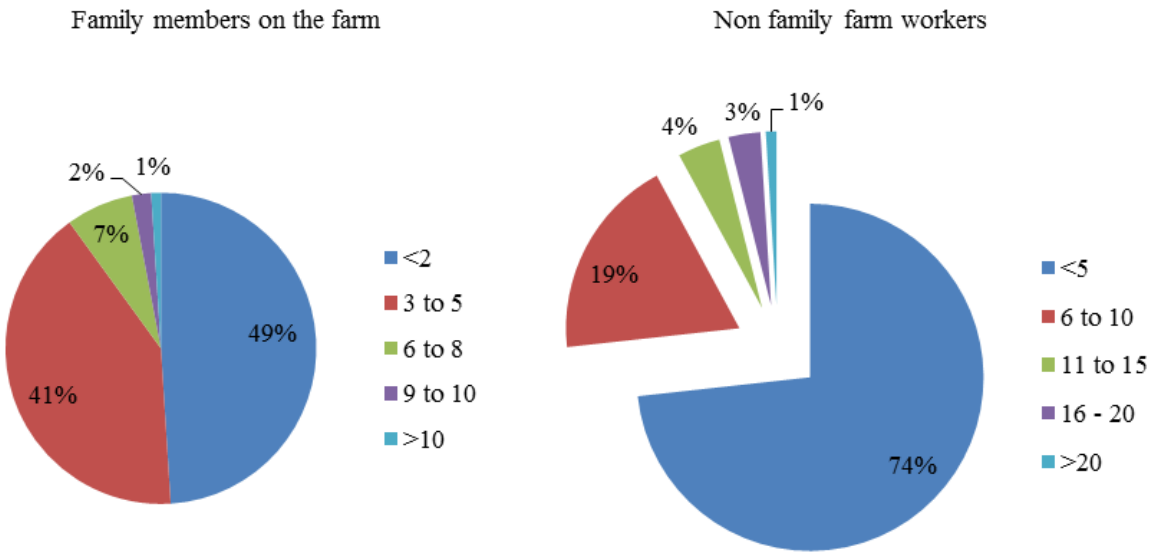
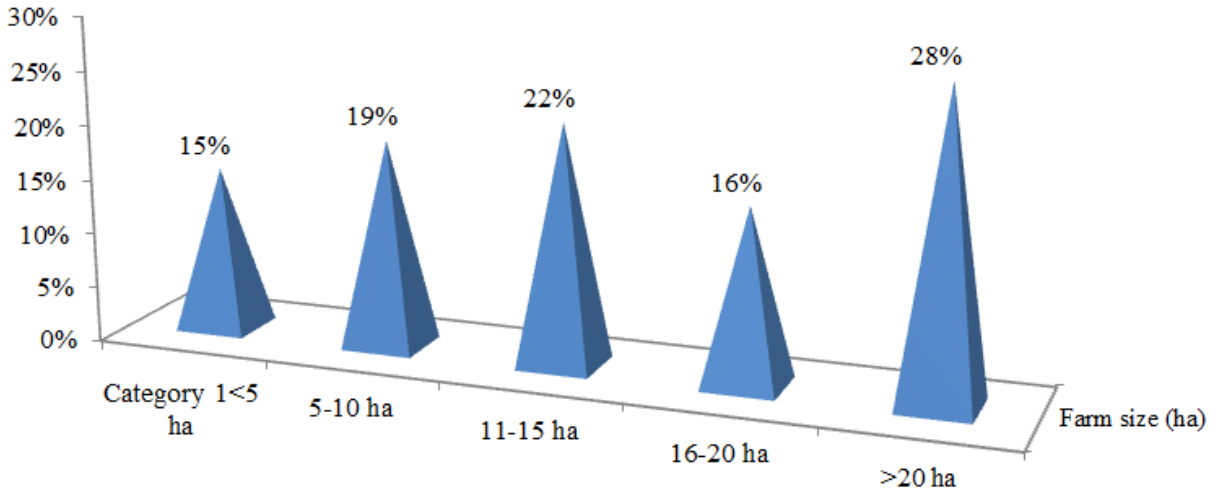


Table 4. What is the type of ownership (legal form) of your farm?

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Sole proprietor	90	24.9	24.9	24.9
	Leasehold	25	6.9	6.9	31.9
	Communal	188	51.9	52.1	83.9
	Renting	16	4.4	4.4	88.4
	Partnership	42	11.6	11.6	100.0
	Total	361	99.7	100.0	
Missing	System	1	.3		
Total		362	100.0		

Figure 4. Farm size in hectares



5.3 Financial characteristics

5.3.1 Farm output

Respondents were asked to reveal the gross agricultural output for the previous season. The purpose was to determine the farmers' ability to service loans if approved by a bank. Apriori, results show that 68.0% (n=362) managed less than R50 000 in gross output. Only a paltry 2.7% produced in excess of R80 000. It is therefore not surprising that smallholder farmers find it difficult to access credit

from formal banking institutions such as retail banks. This is because as part of the initial credit assessment process, lenders analyse the borrower's sources and level of income when estimating the borrower's probability of default. Applicants with high income stand a better chance of approval when compared to those with low income streams. Table 5 below presents the summarised results.

Table 5. What is your gross agricultural output in Rands for the last season?

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Less than 50 000	223	61.6	68.0	68.0
	50 001 – 60 000	50	13.8	15.2	83.2
	60 001 – 70 000	28	7.7	8.5	91.8
	70 001 – 80 000	18	5.0	5.5	97.3
	80 001 and above	9	2.5	2.7	100.0
	Total	328	90.6	100.0	
Missing	System	34	9.4		
Total		362	100.0		

Respondents were asked to identify factors that negatively affect their output, 37% indicated lack of access to credit as inhibiting output growth, lack of adequate land (21.8%), lack of inputs (37.3%), lack of equipment (59.6%), insufficient water (41.2%). Other factors include lack of expertise (17.2%) and lack of extension services (14.7%).

5.3.2 Ratio of agricultural income to total family income

The study also analysed the ratio of the farmers' income from agricultural activities to the family's total income in order to gain a clear view of the viability of the respondent smallholder farmers. Results show that households earn less income from agricultural activities than non-farm activities with 89% (n=362) earning up to 10% from agricultural activities. This implies that farmers supplement their income from non-farm sources in order to survive. When borrowing money for the purpose of farming, the farmers may encounter challenges getting approvals because of low income related to the core business of farming. When a business applies for credit, the repayment is expected to come from the trading activities of the business being financed. In this case it does not seem to be the case. This may lead the farmers being excluded from the credit market. Summary statistics are presented in Table 6 below.

Table 6. Please indicate the ratio of agricultural income to total family income (%)

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Less than 5%	192	53.0	55.5	55.5
	6% - 8%	80	22.1	23.1	78.6
	9% - 10%	36	9.9	10.4	89.0
	11% - 12%	24	6.6	6.9	96.0
	Over 12%	14	3.9	4.0	100.0
	Total	346	95.6	100.0	
Missing	System	16	4.4		
Total		362	100.0		

5.3.3 Level of saving

A total of 45.5% of the respondents indicated that they did not save anything (see Table 7). However, what is encouraging is that despite low income levels realised, 54.5% were able to make a saving. These results show that increased savings by smallholder farmers in South Africa may improve chances of access to credit as observed by Akudugu (2012). Using the Tobit model to estimate the determinants of credit supply, the author demonstrated that, among other factors, the amount of savings made determines the amount of credit supplied by rural banks.

5.3.4 Value of fixed assets

Respondents were asked to indicate the estimated value of fixed assets held. The purpose of this question was to determine the availability of assets that could be encumbered as collateral for credit obtained from the bank. The majority (80%; n=362) respondents were observed to have fixed assets valued at not more than R60 000. The remainder held fixed assets valued at more than R60 000. Table 8 below summarises the value of assets held by the farmers surveyed.

Table 7. What proportion of household income were you able to save last year?

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	None	160	44.2	45.5	45.5
	<5%	86	23.8	24.4	69.9
	5% to 10%	67	18.5	19.0	88.9
	11% to 15%	26	7.2	7.4	96.3
	16% to 20%	8	2.2	2.3	98.6
	21% and above	5	1.4	1.4	100.0
	Total	352	97.2	100.0	
Missing	System	10	2.8		
Total		362	100.0		

Table 8. Please indicate the estimated value of fixed assets

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Less than 50 000	202	55.8	62.7	62.7
	500 01 – 60 000	55	15.2	17.1	79.8
	60 001 – 70 000	26	7.2	8.1	87.9
	70 001 – 80 000	20	5.5	6.2	94.1
	80 001 and above	19	5.2	5.9	100.0
	Total	322	89.0	100.0	
Missing	System	40	11.0		
Total		362	100.0		

5.3.5 Average monthly expenses

The majority of respondents indicated that on average they spend less than R2, 000 (41.8%), while 53% of the respondents spend between R2, 000 and R8, 000 monthly. Only 5.3% have monthly expenses averaging in excess of R8, 000. This is an important statistic because it enables the credit provider to determine the disposable income of the farmer and thus make an informed credit decision.

5.3.6 Family networth at the beginning of last season

Approximately 60% (n=362) of the respondents reported a networth of less than R10, 000 while 33.9% had a networth of between R10, 000 and R25, 000. Only 6% had more than R25, 000 networth. This information was necessary to determine the degree of financial leverage of the respondents. For the lender, the lower the financial leverage of the borrower, the lower the probability of default and therefore the higher the chance of accessing credit. The respondent farmers demonstrated low equity levels, suggesting that they could only access limited amounts of formal credit from the South African formal credit market.

5.3.7 Form of collateral offered for credit received and/or applied for

One of the major constraints to access to credit is the unavailability of collateral required by lenders. Respondents were asked to indicate the type of collateral they would offer a credit provider in return for a loan. A total of 54% (n=362) indicated that they did not have any collateral to offer. When taking into account other farmer attributes such as low annual income and low networth the results confirm that smallholder farmers are less likely to receive credit from banks in the absence of collateral which serves as a fallback position for the lender. Summary statistics are presented in Table 9.

Table 9. What form of collateral have you offered or would you offer a bank/lender?

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Mortgage bond over farm land and buildings	36	9.9	10.6	10.6
	Notarial bond over movable assets	42	11.6	12.4	22.9
	Guarantee (specify)	18	5.0	5.3	28.2
	Personal property	62	17.1	18.2	46.5
	None	182	50.3	53.5	100.0
	Total	340	93.9	100.0	
Missing	System	22	6.1		
Total		362	100.0		

5.3.8 Preferred sources of credit

Results under this construct show a variety of attitudes towards credit (see Table 10). These range from the family culture to borrow as little as possible to preference to borrowing from friends or relatives. Asked what the family culture was towards borrowing, respondents indicated that the culture of the family was not to borrow (33%) while approximately 23% were of the contrary attitude. A total of 151 respondents (42%) were found to maintain neutrality between low and high levels of borrowing. Table 10 below summarises the results.

Table 10. Family culture is to borrow as little as possible

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Strongly disagree	51	14.1	14.7	14.7
	Disagree	28	7.7	8.1	22.8
	Neutral	151	41.7	43.5	66.3
	Moderately agree	73	20.2	21.0	87.3
	Strongly agree	44	12.2	12.7	100.0
	Total	347	95.9	100.0	
Missing	System	15	4.1		
Total		362	100.0		

Furthermore and consistent with Mpuga (2010) in Ghana, respondents indicated preference of borrowing from a friend or relative (56%). The remainder (44%) indicated that they would rather not borrow from friends or relatives. Summary statistics are presented in Table 11. The implied sources of finance would thus be owner funds (equity), formal lenders or informal credit providers.

Table 11. Prefer to borrow from a friend or relative

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Sometimes	198	54.7	55.8	55.8
	Not at all	157	43.4	44.2	100.0
	Total	355	98.1	100.0	
Missing	System	7	1.9		
Total		362	100.0		

Intriguing results were observed when approximately (52%) indicated that they would not like to be indebted to a bank at all. See Table 12 below.

Table 12. Do not like to be indebted to a bank

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Sometimes	167	46.1	47.2	47.2
	Not at all	185	51.1	52.3	99.4
	3	1	.3	.3	99.7
	4	1	.3	.3	100.0
	Total	354	97.8	100.0	
Missing	System	8	2.2		
Total		362	100.0		

The income of the farmers which was found to be low is in line with the findings of Oni et al (2005) in Nigeria.

6 Conclusion

Access to credit is arguably one of the challenges facing smallholder farmers in South Africa. Accordingly, this paper used cross-sectional survey data to examine the characteristics of smallholder farmers that lead to inadequate access to credit from formal credit institutions. The paper focused on socio-economic characteristics.

Using descriptive statistics, the paper observes that the majority of smallholder farmers surveyed are female. Most farmers were also found to be married, suggesting that farming is essential as a source of family livelihood outside formal employment. Most

farmers were found to be in the 20 to 50 age group. The level of education of the farmers was found to be lower than tertiary level for most of them. Both family and external sources of labour were utilised on the farm, creating the much needed employment. The majority of farmers do not own the land they farm, which is either communal or is leased. Only about 28 percent farm on more than 20 hectares of land while others occupy pieces of land as small as less than 5 hectares. Financial characteristics of the farmers show low output of up to R70 000 (92%) with low savings. The respondent farmers were observed to hold low values in fixed assets. Not surprisingly, the majority portrayed neither short-term nor long-term debt thus confirming that they are excluded from the credit markets. In this regard, the family attitude was found to be one of borrowing as little as possible thus further compounding the lack of access to credit by the farmers.

In light of the foregoing observations, this paper concludes that the interplay of social and economic characteristics contribute to the exclusion of smallholder farmers from formal credit markets. What is evident is that more investment is required in the area of research and development in order to deepen the formal credit markets and thus accommodate the smallholder farmers, a sector that contributes immensely to the alleviation of unemployment and poverty. It is recommended that financial institutions invest more resources in information gathering in order to gain a good understanding of the smallholder farmers. This will help alleviate asymmetric information, default probabilities, reduce capital adequacy requirements and improve lender profitability.

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THE DIFFERENTIAL EFFECT OF LABOUR UNREST ON CORPORATE FINANCIAL PERFORMANCE

Fortune Ganda*, Collins C Ngwakwe**

Abstract

Heightening labour unrest episodes have inevitably generated important results on corporate financial performance. This paper provides first-hand, empirical data to illustrate the effect of labour unrest on firm performance before periods of labour unrest (2004 to 2008) and during periods of labour unrest (2009 to 2013) in South Africa's mining sector. Content analysis was used to gather financial performance measures (Operating profit, Return on Capital Employed and Debt to Equity Ratios) of two mining firms. Then, t-test (paired samples) were utilised to analyse the data. The findings demonstrates that operating profit during labour unrest was lower when compared to operating profit before labour unrest for both company's A and B. Return on Capital Employed results for five years before labour unrest was greater than ROCE during the labour unrest for both companies. Then, debt to equity during the labour unrest is greater than before labour unrest for the studied companies.

Keywords: Labour Unrest, Corporate Financial Performance, Mining Sector, Return on Capital Employed, Debt to Equity Ratio, Operating Profit

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1 Introduction

Labour unrest can produce significant economic consequences for companies. Such episodes can generate negative effects on firm productivity and financial performance. Therefore, in situations where firm output has been reduced, adverse contexts in relation to employment can result in employees failing to support other dimensions of production, for instance, poor product quality (Sapa, 2013). Therefore, within South African contexts it is striking to notice the intensity of discussions concerning labour issues, plus the centrality of labour debates in the complete political economic environment (SA News, 2013). Thus labour protest in South Africa, especially in the mining sector has been incessant and counter-productive at a level more than in previous years (Sharp, 2011). The mining sector labour unrest in South Africa has been seen as a crisis which has extended to other economic sectors besides the mining sector alone, and one which at present cannot be solved by introducing repression approaches (Mtshazo, 2013; Fin24, 2014). It follows that South African workers have, in recent years, increased labour protest over issues such as working conditions and wages (Wyk, 2012; Vermeulen, 2013). Such events, therefore has reduced the country's once fastest African economic growth rate which has been identified as growing at 2% slower rate when compared to previous years, whiles other Sub-Saharan economies have been estimated to grow at an average of 5.1% as of 2013 (McGroarty and Maylie,2013). Hence, the frequent labour unrest in South Africa, particularly the mining sector has inevitably tainted the investment assessment of the country, and has thus produced negative impact on the country's economic sectors, which include amongst others the dramatic depreciation of the South African Rand against major currencies (Vermeulen,2013). Therefore, South African 2013 inflation rate which was identified to be below 6% has been projected to accelerate, with the largest exchange rate effect noticeable on fuel and food prices (Coetzer, 2013).

Consequently the concern of this paper is that the labour unrest has no doubt impacted negatively on the productivity and performance of the affected companies, mostly in the mining sector. To the best of the author's knowledge, no research has as yet, examined the effect of the labour unrest on the financial performance of the affected companies. The question that motivated this study is the possible differential effect of labour unrest on the financial performance of selected South African mining companies; hence the objective of the paper is to examine the possible differential effect of labour unrest on the financial performance of selected South African mining companies.

In this paper, we examine the impact of labour unrest on firm financial performance. Therefore, a case study technique is adopted by exploring the differential effect of the labour unrest on the financial performance measures (Operating profit, Return on Capital Employed and Debt to Equity Ratios) of two companies in the South African mining sector, five years before labour unrest (2004 to 2008) and five years during labour unrest (2009 to 2013). The paper

is deemed important since the findings show the negative financial implication of the labour unrest and thus provide information for corporate decision makers on the need to proactively manage the circumstances that lead to labour unrest before it can escalate to production stoppages and consequential effect on the general economy.

2 Related literature

2.1 Labour unrest within South African context

Labour unrest "is organising and strike actions undertaken by labour unions, especially where labour disputes become violent or where industrial actions in which members of a workforce obstruct the normal process of business and generate industrial unrest are essayed." (Wikipedia, 2014:1). Therefore, Wyk (2012) indicates that labour unrest in South Africa particularly in the mining and manufacturing sectors could result in high structural unemployment which will negatively have an effect of the country's Gross Domestic Product (GDP) (anticipated to decline by 1% in 2012), productivity at the workplace, and other macroeconomic instabilities. Sharp (2011) express that labour unrest in South Africa in 2010 resulted in 14.6 million workdays being lost owing to employee strikes plus work stoppages, and this figure was expected to heighten to 17.8 million in 2011, which is a 22% rise from 2010. Anderson (2014) also illustrates that the Marikana platinum mine strike was one of South Africa 's most violent and bloody labour unrest event which witnessed 34 miners being killed by police thereby bringing mining activities to a halt as the miners were demanding a better wage deal.

Hence, SA News (2013) spotlights that South Africa's labour unrest has reduced corporate investor confidence, reduced economic development by 0.9 percent in the first quarter of 2013, added to 14.3% depreciation of the South African Rand when compared to the United States dollar and could persistently increase inflation in the coming years. PWC (2014) describe that labour unrest in South Africa has generated negative impact on financial performance of mining companies as financial benefits decreased triggering contraction patterns of the country's mining stocks. The auditing company further explains that operating costs heightened by 14 percent, net profit declined by 80%, and impairment charges increased to 137.8% from 2013 statistics which makes it hard to incorporate long-run decisions in such volatile markets. Coetzer (2013) postulates that labour unrest in the mining sector will negatively affect South Africa's National Development Plan (NDP), is highly likely to spread to manufacturing sector thereby fuelling up stagflation, increased social upheaval and heightened disinvestment. Stehring (2014) informs that labour unrest in South Africa's mining sector led to damage of mining equipment, high theft of electricity cables, reduced operations which were ascertained to be 50-60% of normal production, created health and safety challenges of workers (fitness for duty), and delayed production.

The South Africa's National Treasury in its 2013/14 budget review discloses that copper production decreased by 21.8%, platinum fell by a 12% margin and gold declined by 14.5% in the country's mining sector owing to 2012 strikes (Sapa, 2013). Moreover, Impala Platinum in South Africa anticipated its earnings to decrease by 20% when compared to year end 2013 figures as a result of mining workers strike which lasted for 5 months then ending on June 30 (2014) having negatively affected normal production (Fin24,2014). Thus, Vermeulen (2013) asserts that labour challenges South Africa's platinum industry can lead to global investors deferring investments to other countries, exacerbate labour costs and increase shortage of specialised skills in the mining industry. Furthermore, McGroarty and Maylie (2013) adds that labour unrest in South Africa creates a US$70 million expense in a single day, is forcing Anglo American Platinum Limited to cut 6900 jobs in the country further increasing unemployment rate which was discovered to be 25,6%. Hence, Sharp (2011) demonstrates that the South African Department of Labour has been putting pressure on companies to introduce new labour regulations which embrace issues on affirmative action, affiliation with trade unions and temporary employment but such interventions have been reported to have the ability to lessen the country's labour market efficiency through 16.5% in 2011, after a 8.1% decrease in 2010.

Anderson (2014) elaborates that growing labour unrest in South Africa has been attributed to anticipated benefits which were associated with South Africa's 1994 democratic policy which promised the miners housing and decent employment. In the same vein, Sharp (2011) explains that South African trade unions have grown irrelevant to employees which has led to these government agencies membership declines from 4.3 million in year 2000 to 3.2 million in year 2010. In addition, Anderson (2014) highlights that employees are not satisfied with their trade union-National Union of Mineworkers (NUM), hence miners at Marikana and other mines have been undertaking strike actions which will possibly result in loss of revenue to the mining corporations, in addition to recent increase in world prices of platinum as South Africa supply 80% of global platinum. In another setting, Mtshazo (2013) demonstrates that labour unrest which affected gold mining companies have also extended to diamond mining firms as the National Union of Mineworkers (NUM) express that miners were demanding R8000 as the minimum wage as the miners were earning only R4000. The strike had begun owing to failed wage negotiations between the mining firms and the workers at the Commission for Conciliation, Mediation and Arbitration.

2.2 Corporate financial performance

Corporate financial performance involves the use of accounting principles of profitability to describe the

economic status of the company (Wang, 2005). Therefore, firm financial performance indicates a mechanism that satisfy corporate shareholders, hence profitability measures are important to show the capability of the company to generate financial benefits (Fletcher and Smith, 2004)). The firm performance measures which this study has considered, are, namely, operating profit (OP), Return on Capital Employed (ROCE) and Debt to Equity ratio (DE).

2.3 Operating profit

Epstein and Mirza (2003) propose that operating activities are the main profit generating practices of the firm. Therefore, operating practices by the company involve manufacturing commodities for sale and offering services. Edwards and Bell (1961) divided the firms existing-value financial gains into two major constituents namely; "current operating profit"- the amount of income in excess of existing revenue over the existing replacement expense of services applied to generate income and "realisable cost saving." Fletcher and Smith (2004) illustrates that operating profit of a firm is determined through subtracting costs of goods and input materials from financial gains realised from producing output commodities. Bernstein (1989) highlights that operating activities include the total of all revenue-producing practices of the company. Hence, operating profit has been widely employed in previous research to investigate corporate performance (Lie, 2004).

Morck et al., (1989) explains that operating profit is prominently accepted and favoured when compared to share price because it includes market anticipation in relation to the value of prescribed restructuring practices. Wang (2005) argues that operating profit contributes towards managing the effect of earnings management. Therefore, investment approaches which include cost effectiveness, debt restructuring, reduction in dividend pay-outs, revenue growth and equity offering are principally employed to enhance short-term liquidity and operating profits (Ofek, 1993; Chowdhury and Lang, 1996). Moreover, corporations can respond by integrating financial restructuring procedures as a result of undesirable operating gains (Hillier and McColgan, 2005). In addition, (Denis and Kruse, 2000) illustrate that most companies react to performance shocks through implementing financial and organisational restructuring policies.

Kang and Shivdasani (1997) writes that firms characterised with poor performance can integrate asset expansion strategies. Hillier and McColgan (2005) found out that companies that introduce asset expansion activities encountered considerable positive firm performance ratings. On the contrary, Berger and Ofek (1995) contributes that expansion programs can lower the company's market value. Hence, Yawson (2006) indicates that companies can implement employee layoffs in response to decreases in operating profits. Therefore, employee layoffs activities can be adopted following a period when the company has performed poorly with reference to its stock returns (Chen et al., 2001). Chen et al., (2001) posit that employee layoff practices ultimately lessen firm expenses, generates positive labour productivity and eventually produce high firm financial benefits. Inverson and Pullman (2000) demonstrates employee layoff programs are usually implemented together with cost reduction approaches so as to influence the firm's operating performance.

However, Worrell et al., (1997) illustrates that employee layoffs can discourage the remaining employees which detrimentally influence the firm's production capacity. Hence, Kahl (2002) understands that companies which are encountering poor performance have an opportunity to sell assets in order to pay outstanding debts. Therefore, Bititci et al., (2004) demonstrates that a firm should be able to change its long-term assets to maintain favourable financial benefits within the business environment. Kang and Shivdasani (1997) convey that asset sales generates a strong correlation with the firm's operating performance in the second and third years. Moreover, Yawson (2009) studied Australian companies and concludes that forced CEO turnover and asset reduction strategies had a strong association with operating performance in second plus third years following a shock. In another firm sustenance approach, Grullan et al., (2002) consider that dividend cuts encourage the company to protect the firm's inside financial strength for normal business undertakings. In the same vein, Lie (2004) confirms that companies implemented active policies to reduce dividend payments following a shock.

2.4 Return on capital employed (ROCE)

Return on capital employed (ROCE) is a corporate profitability measures which demonstrate how effectively the firm can generate financial benefits from capital that has been employed through comparing the net operating profit of the company to its capital employed (Maheshwari,2009). Therefore, ROCE simply illustrate the amount of financial rewards each monetary investment of capital employed produces to corporate investors. In addition, the ROCE is a long-run profitability measure since it indicates how effectively corporate assets have been performing whiles long-run financing issues have been simultaneously taken into account (Randall and Hopkins, 2012). In this case, the ROCE is very important in determining company longevity when compared to other profitability ratios such as return on equity. The ROCE is a profitability ratio founded upon two significant computations: the operating profit (identified as earnings before interest and taxes (EBIT)) and capital employed (total assets minus all current liabilities) (Maheshwari, 2009). Thus, the ROCE is calculated through dividing net operating profit by capital employed. In this manner, the ROCE show the effectiveness plus profitability of the firm's capital investments. Hence, a favourable ROCE is a

ratio which is high when compared to the rate in which the firm is borrowing. In this case, the ROCE is expected to be greater than the borrowing rate of the firm as heightened company borrowing will decrease shareholders' earnings (Elliot and Elliot, 2008). Therefore, for a firm to remain in business in the future, its ROCE should be greater that the company's cost of capital so that earnings to shareholders are not reduced (Alexander and Nobes, 2004).

2.5 Debt to equity ratio

The debt to equity ratio is a performance measure of the firm's financial leverage computed through dividing the company's total liabilities by shareholders' equity (Randall and Hopkins, 2012). In this regard, it illustrate the amount of corporate equity plus company debt the firm is utilising to fund its assets. An increased debt to equity ratio implies that the firm has been ascertained to be aggressive towards financing its economic growth with debt. Therefore, such as scenario can lead to the company acquiring volatile earnings owing to extra interest costs. If earnings to the company are greater than the cost of debt financing then the company will benefit since greater earnings are increasingly spread among the company investors, but if the cost of debt financing has been determined to be higher than the company's earnings then bankruptcy can inevitably take place (Maheshwari,2009). In this case, capital-intensive industries such as the mining sector are expected to have a debt to equity ratio greater than 2, whiles smaller firms can have a debt to equity ratio less than 0.5. Generally, a reduced debt to equity ratio is desirable to the firm as it show less risk whiles an increased debt to equity ratio is undesirable to the company as this scenario indicates that the company depend more on outside lenders which increase risk, particularly increased interest rates (Elliot and Elliot,2008). Thus, the debt to equity ratio is a corporate performance measure that compares how much the company stakeholders (creditors, suppliers, lenders, obligors) have entrusted to the firm against what the company's shareholders have also entrusted (Alexander and Nobes,2004).

2.6 Labour relations issues in corporate environments

The issues concerning labour relations has considerably heightened in global corporate contexts. In this regard, Zeitlin (1987) consider labour relations as a social movement which highlights transforming associations involving employees, trade unions, the government and employers. Gordon (1994) demonstrates that labour relations can improve when a supportive labour framework consider employee rights, reduce intensity of employee control and promote equitable allocation of incomes. Knights and Willmott (1989) suggest that the challenge with labour processes is that they have primarily classified both employees and management as economic groups. Hence, the authors mentioned that there is no room for negotiation plus adoption of management-employee associations have been neglected. Armbuster-Sandoval (2005) explains that there are some jobs which have emphasized on matters of power, thereby influencing how workers are treated. Traditionally, such issues have already been there since firm critics have continuously raised concerns about the way employees are treated (Commons and Andrews, 1916). Shapiro and Stiglitz (1984) argue that there is conflict between employees (who put little effort to avoid dismissal in support of little wages they receive) and employers (who wants work to much tasks as possible for the low pay scales they offer).

Authors, Theriault (2003) and Rose (2004) suggest that workers who undertake physical labour frequently receive bad treatment from the employer when they can be easily substituted. In this respect, they are unable to have their demands addressed and since they provide no intellectual input; employers do not view them as complete people who deserve dignity (Theriault, 2003; Rose, 2004). Therefore, the framework about labour relations involve the adoption of labour legislation which enable employees to be given the right to participate in collective bargaining procedures, develop trade unions which will represent them in labour disputes and constructs expectations and limits which managers and employees could apply when conflicts arise (Nilsson,1999). Therefore, employee preparedness to involve managers in joint co-operative work include the procedure of negotiation since modern economic citizenry setups support improved relationships between management and workers instead of continuing disputes (Edwards,1986). Zieger (1986) explains that the introduction of labour laws positively assist workers and labour movements sustenance and advancement. Supiot (2001) demonstrates that labour legislation was developed to address economic disparities involving labour and management through developing a collection of norms defined by the government or discussed with important social stakeholders. ILO (1997) puts forward that labour legislation creates a set of standards that consider significant social rights. This practice is important since Ferrier (1996) express that employees are connected to management through a contract that is hard to withdraw or terminate in case of divergent conflicts.

Mboya (1963:178) commented that "it is possible for trade unions to fulfil two purposes in Africa: they can defend the rights and promote the interests of the workers, and at the same time co-operate with the government in economic reconstruction." Supporting this perception, Howard (1986:119) states that "the centralisation of power into the hands of a ruling class cannot be challenged by ordinary peasants, workers, and women unless they have the right to freedom of expression and can express their views in an organised manner." Webb and Webb (1894:1) define a trade union as "a continuous association of wage earners for the purpose of maintaining or improving the conditions of their

employment." Research undertaken across Europe and in Latin America demonstrates that trade unions are prime organisations representing the civil society has even been the mechanism or force behind regime change (O'Donnell et al., 1986; Przeworki, 1989). From an African perspective, studies have doubted if trade unions can be viewed as independent organisations which are able to carry out transformations through a democratic process (Nyang'oro & Shaw, 1989). In some African countries, trade unions work hand in hand with responsible governments and such trade unions do not play the role of transformation and democratisation but they are perceived as brakes on transformation (Kraus, 1976; Shivji, 1975). Valenzuela (1989) demonstrates that research conducted on trade union activities in low-income countries have indicated that employees who work in sectors considered to be strategic and crucial to the national economy have their power and voice significantly rendered ineffective. The following section examines the study's research methodology and data analysis.

3 Research methodology & analysis

This research employed data collected from the company's annual financial reports or integrated reports through content analysis processes. The paper adopted a multiple case study approach since it considered two mining companies in South Africa which have been experiencing labour unrest. In this research, firm performance measures, namely, operating profit (OP); Return on Capital Employed (ROCE) and Debt to Equity ratio (DE) of the two mining companies were collected from two periods: before labour unrest (2004 to 2008) and during labour unrest (2009 to 2013) on an annualised basis. The study then employed a t-test (two paired samples) to evaluate how each firm performance measure (OP, ROCE and DE) behaved before labour unrest and during labour unrest. The data analysis and results are present below.

4 Results

4.1 Results about operating profit for company a five years before labour unrest (2004 to 2008) and five years during periods of labour unrest (2009 to 2013)

Table 1. t-Test: Paired Two Sample for Means in Operating Profit Before and During Periods of Labour unrest in South Africa (Company A)

	OP Before LU	*OP After LU*
Mean	7633800	4129200
Variance	1.7397E+13	2.37354E+12
Observations	5	5
Pearson Correlation	0.293174082	
Hypothesized Mean Difference	0	
Df	4	
t Stat	1.958967006	
P(T<=t) one-tail	0.060849356	
t Critical one-tail	2.131846786	
P(T<=t) two-tail	0.121698711	
t Critical two-tail	2.776445105	

Note: OP before LU: Operating Profit five years before labour unrest; OP during LU: Operating Profit within five years of labour unrest

4.1.1 Discussion

The Mean difference is therefore: 350 (763-412), which is greater than the hypothesized mean difference of 0; this thus shows that the operating profit during the labour unrest is lower than before unrest. From the test output, test statistics t is 1.9 and the t-critical is 2.7; since therefore the t-critical is greater than the t-statistics, we can conclude that although the mean difference is more than zero, but the difference is not significant enough to conclude that labour unrest in South Africa has a significant negative effect on operating profit. This might perhaps account for why the company management seem to be willing to allow the strikes to longer, since after all, the reduction in operating profit might not significantly affect the firm.

4.2 Results about operating profit for company B five years before labour unrest (2004 to 2008) and five years during periods of labour unrest (2009 to 2013)

Table 2. t-Test: Paired Two Sample for Means in Operating Profit Before and During Periods of Labour unrest in South Africa (Company B)

	OP Before LU	*OP After LU*
Mean	10291800	6996000
Variance	5.56698E+13	8.17295E+12
Observations	5	5
Pearson Correlation	-0.944366165	
Hypothesized Mean Difference	0	
Df	4	
t Stat	0.72219983	
P(T<=t) one-tail	0.25506804	
t Critical one-tail	2.131846786	
P(T<=t) two-tail	0.51013608	
t Critical two-tail	2.776445105	

Note: OP before LU: Operating Profit five years before labour unrest; OP during LU: Operating Profit within five years of labour unrest

4.2.1 Discussion

The Mean difference was ascertained to be 597(699-102), a value that is higher when compared to the hypothesized mean difference of 0. Therefore this demonstrates that operating profit during labour unrest was lower when compared to operating profit before labour unrest. The results outcomes t-Stat was identified to be 0.72 whiles the t-critical value was obtained as 2.7; since therefore the t-critical is greater than the t-statistics, we can conclude that although the mean difference is more than zero, though the variance is not significantly adequate to conclude that labour unrest in South Africa indicates a significant negative effect on operating profit. This finding can also assist to explain why labour unrest activities have persistently been experienced in the mining sector as firm managers are confident that decrease in operating profit will not result in significant undesirable impacts on firm performance.

4.3 Results about Return on Capital Employed (ROCE) for company A five years before labour unrest (2004 to 2008) and five years during periods of labour unrest (2009 to 2013)

Table 3. t-Test: Paired Two Sample for difference in Means in Return on Capital Employed (ROCE) Before and During Periods of Labour Unrest in South Africa (Company A)

	ROCE Before LU	*ROCE After LU*
Mean	28.64	5.84
Variance	101.543	36.798
Observations	5	5
Pearson Correlation	-0.294253496	
Hypothesized Mean Difference	0	
Df	4	
t Stat	3.861468257	
P(T<=t) one-tail	0.009062288	
t Critical one-tail	2.131846786	
P(T<=t) two-tail	0.018124577	
t Critical two-tail	2.776445105	

Note: ROCE before LU: Return on Capital Employed five years before labour unrest; ROCE during LU: Return on Capital Employed within five years of labour unrest

4.3.1 Discussion

The Mean difference is therefore: 23 (28.64 - 5.84), which is greater than the hypothesized mean difference of 0; this thus shows that Return on Capital Employed five years before labour unrest is greater than ROCE during the labour unrest. Significance: since the t statistics which is 3.8 is greater than t-critical (two tailed) which is 2.7, and the P = 0.018 (two-tail) is less than 0.05, we thus conclude that the mean difference in ROCE before the labour unrest is significantly different than the ROCE during the five years of labour unrest.

4.4 Results about Return on Capital Employed (ROCE) for company B five years before labour unrest (2004 to 2008) and five years during periods of labour unrest (2009 to 2013)

Table 4. t-Test: Paired Two Sample for difference in Means in Return on Capital Employed (ROCE) Before and During Periods of Labour Unrest in South Africa (Company B)

	ROCE Before LU	*ROCE After LU*
Mean	34.4	10.66
Variance	118.3	20.003
Observations	5	5
Pearson Correlation	-0.604992962	
Hypothesized Mean Difference	0	
Df	4	
t Stat	3.780532779	
P(T<=t) one-tail	0.009713434	
t Critical one-tail	2.131846786	
P(T<=t) two-tail	0.019426869	
t Critical two-tail	2.776445105	

Note: ROCE before LU: Return on Capital Employed five years before labour unrest; ROCE during LU: Return on Capital Employed within five years of labour unrest

4.4.1 Discussion

The Mean difference is therefore: 24 (34.4 - 10.66), which is greater than the hypothesized mean difference of 0; this thus shows that Return on Capital Employed five years before labour unrest is greater than ROCE during the labour unrest. Significance: since the t statistics which is 3.8 is greater than t-critical (two tailed) which is 2.7, and the P = 0.018 (two-tail) is less than 0.05, we thus conclude that the mean difference in ROCE before the labour unrest is significantly different than the ROCE during the five years of labour unrest.

4.5 Results about Debt to Equity ratio for company A five years before labour unrest (2004 to 2008) and five years during periods of labour unrest (2009 to 2013)

Table 5. T-Test: Paired Two Sample for difference in Means in Return on Debt to Equity ratio Before and During Periods of Labour Unrest in South Africa (Company A)

	DE Before LU	*DE After LU*
Mean	19.82	17.4
Variance	84.707	64.51
Observations	5	5
Pearson Correlation	0.546725602	
Hypothesized Mean Difference	0	
Df	4	
t Stat	0.654355251	
P(T<=t) one-tail	0.274298907	
t Critical one-tail	2.131846786	
P(T<=t) two-tail	0.548597813	
t Critical two-tail	2.776445105	

Note: DE before LU: Debt to Equity five years before labour unrest; DE during LU: Debt to Equity within five years of labour unrest

4.5.1 Discussion

The Mean difference was determined to be 2.42 (19.82-17.4), a value that is greater than the hypothesized mean difference of 0. This implies that the debt to equity during the labour unrest is hence higher when compared to the one before labour unrest. Significance: from the test results, test statistics t is 0.65 and the t critical is 2.7. Hence, since therefore the t-critical is higher when compared to the t-statistics, we can conclude that although the mean difference is more than zero; the difference is not significant enough to conclude that labour unrest in South Africa has a significant negative impact effect on debt to equity of company A. This outcome can enhance improved understanding on why firm managers have not taken proactive actions to stop ongoing strikes since a rise in debt to equity might not produce significant impact on the company.

4.6 Results about Debt to Equity ratio for company B five years before labour unrest (2004 to 2008) and five years during periods of labour unrest (2009 to 2013)

Table 6. t-Test: Paired Two Sample for difference in Means in Return on Debt to Equity ratio Before and During Periods of Labour Unrest in South Africa (Company B)

	DE Before LU	*DE After LU*
Mean	2.8	6.5
Variance	6.2	17.155
Observations	5	5
Pearson Correlation	0.058178168	
Hypothesized Mean Difference	0	
Df	4	
t Stat	-1.757724674	
P(T<=t) one-tail	0.076812139	
t Critical one-tail	2.131846786	
P(T<=t) two-tail	0.153624278	
t Critical two-tail	2.776445105	

Note: DE before LU: Debt to Equity five years before labour unrest; DE during LU: Debt to Equity within five years of labour unrest.

4.6.1 Discussion

The Mean difference is therefore: 3.7 (6.5-2.8), which is greater than the hypothesized mean difference of 0; this thus shows that the debt to equity during the labour unrest is greater than before unrest. Significance: from the test output, test statistics t is -1.7 and the t critical is 2.7; since therefore the t-critical is greater than the t-statistics, we can conclude that although the mean difference is more than zero, but the difference is not significant enough to conclude that labour unrest in South Africa has a significant negative effect on debt to equity of company B. This might perhaps account for why the company management seem to have been willing to allow the strikes to go for long periods, since after all, the increase in debt to equity might not significantly affect the firm.

5 Conclusion

The evidence generated by this study adds to the conclusion that labour unrest produce effect on firm performance. This study employed a multiple case study on two mining companies in South Africa to evaluate the effect of labour unrest on firm performance. Therefore, by employing t-tests (two paired samples), the outcomes indicates that operating profit during labour unrest was lower when compared to operating profit before labour unrest for both company's A and B. In addition, return on Capital Employed five years before labour unrest was greater than ROCE during the labour unrest for both companies. As well, debt to equity during the labour unrest is greater than before unrest for the studied companies. Overall, it is therefore imperative that company managers should devise approaches that seek to proactively minimise or prevent labour unrest as such labour unrests have the ability to reduce company financial performance.

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A PSYCHOMETRIC ASSESSMENT OF THE LPME SCALE FOR THE SOUTH AFRICAN SKILLS DEVELOPMENT CONTEXT

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Abstract

A thorough examination of psychometric properties of measurement scales is necessary to ensure that these scales comply with the existing scientific conventions. This article assesses the psychometric properties of the Learning Programme Management and Evaluation (LPME) scale. A quantitative, non-experimental cross-sectional survey design was used. Data were collected from a sample of 652 respondents comprising skills development practitioners and learners/apprentices. Data were analyzed using Winsteps, SPSS and AMOS computer software. The findings show that the LPME scale meets the psychometric expectations and complies with the established scientific conventions in terms of validity, reliability, fit and unidimensionality.

Keywords: Skills Development, Exploratory Factor Analysis, Occupational Learning Programme, Management, Evaluation

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1 Introduction

The South African skills shortage challenge is documented in the literature (Erasmus and Breier, 2009; SRI, 2008; Tshilongamulenzhe, 2012a; Visser and Kruss, 2009). This challenge became very glaring because of increased investment in public infrastructure over the past few years, laying bare the fact that although the funding for the infrastructure is available, there is lack of skilled people to do the construction (Sebusi, 2007). The huge skills requirements for the infrastructural developments required to facilitate the 2010 FIFA World Cup, the Gautrain Rapid Rail project, the Gauteng Freeway Improvement Programme, as well as the Eskom Electricity Supply Capacity Expansion program are some stark examples of the growth and expansion projects which placed a major drain on the state of available skills in South Africa (Townsend, 2006). The shortage of skills is prevalent across the labour market from entry-level technical occupations to management as highlighted in the 2014 National List of Occupations in High Demand (DHET, 2014).

Consequently, occupational learning programmes are publicized as a fundamental mechanism to address skills shortages in the South African context (Wildschut et al., 2012), hence vocational and occupational certification via learnership and apprenticeship programmes is at the core of the new skills creation system. An occupational learning programme is a learnership, an apprenticeship, a skills programme or any other prescribed learning programme that includes a structured work experience component (Coetzee et al., 2012; Republic of South Africa, 2008; Van Rooyen, 2009). These programmes are inserted into a complex and increasingly bureaucratised qualifications and quality assurance infrastructure. They are administered by the Sector Education and Training Authorities (SETAs), which are in effect, a set of newly created institutions that have yet to develop capacity to drive skills development (Marock et al., 2008).

A number of challenges have been raised regarding the co-ordination and management of skills development training projects in South Africa (Du Toit, 2012), including poor quality of training and lack of mentorship. Consequently, this research seeks to address the research gap of a country-specific valid and reliable instrument to assess the effectiveness of management and evaluation practices pertaining to occupational learning programmes.

The efficacy of occupational learning programmes is reliant on the contribution of all key stakeholders from policy implementation to learner beneficiaries (Tshilongamulenzhe, 2012b). Best practice dictates that strategies relating to human resources and specifically human resource development (HRD) are enhanced when all stakeholders are able to offer their contribution and perceived opinions with regard to the efficacy of occupational learning programmes (Skinner et al.,

2004). However, Lundall (2003) maintains that occupational learning programmes are fraught with inefficiency and have a long way to go in order to prove themselves in terms of teaching and learning excellence and quality.

2 Learning programme management and evaluation challenges in South Africa

An '*Impact assessment study of the National Skills Development Strategy (NSDS) II*' (Mummenthey et al., 2012) revealed the prevalence of difference in standards across the different occupational learning routes, which brought about inconsistencies regarding procedures to implement training. This was found to significantly impact on the uniformity and reliability of the outcome, resulting in confusion amongst providers and workplaces. The inconsistent implementation of workplace learning demonstrates that more guidance and improved quality assurance mechanisms are required. Further, the study (Mummenthey et al., 2012) revealed that there is a lack of structured and sufficiently monitored practical work-exposure as well as full exposure to the trade, particularly in the case of apprenticeships in the workplace. The quality checks were found to be superficial: checking policies and procedures, but not thoroughly checking what is actually happening during training. The primarily paper-based checks (sometimes adding learner interviews) were found to be insufficient and "completely missing the point" (Mummenthey et al., 2012, p. 40). A lack in subject matter expertise often reduced the process of quality assurance to a paper proof instead of actually assuring the quality of training.

However, overall alignment of theory and practice could be better achieved through setting and maintaining a consistent benchmark for training at institutional and workplace level. Minimum standards in terms of learning content and workplace exposure, together with a common standard for exit level exams, can considerably strengthen consistency in outcomes, implementation and assessment (Mummenthey et al., 2012). This will positively affect transferability of skills between workplaces, and thus the overall employability of learners.

In a context of few post-school opportunities, learnerships and apprenticeships are thus potentially significant routes to such critical vocational and occupational qualifications in South Africa, and the promise of future employment (Wildschut et al., 2012). They represent important alternative routes to enhance young peoples' transition to the labour market, and to meet the demand for scarce and critical skills. A 2008 review of SETAs showed that the skills development system suffers from weak reporting requirements, underdeveloped capacity, lack of effective management, and inadequate monitoring and evaluation that limit the ability of these institutions to serve as primary vehicles for skills development (Marock et al., 2008). The foregoing shortcomings are indicative of management and evaluation weaknesses impacting the South African skills development system and they raise serious concerns about the quality of occupational learning, hence the present research which seeks to contribute to an effective solution.

3 Problem investigated

Prior to this research, no evidence was found which shows the existence of a valid and reliable measure for the effective management and evaluation of occupational learning programmes in the South African skills development context. Nevertheless, the following key problems which necessitate the development of a valid and reliable measure seem to exist in the South African occupational learning system:

(1) Challenges with regard to incoherent and inconsistent implementation of occupational learning continue to persist and this is evident in the literature (Grawitzky, 2007; Kraak, 2005; Mummenthey et al., 2012).

(2) Both the learnership and apprenticeship pathways are not operating optimally in South Africa (Kruss et al., 2012).

(3) The concept of 'Occupational Learning Programme' is still new in the South African skills development landscape, and SETAs and other stakeholders (skills development providers, employers, learners) are not clear regarding the elements and dimensions that comprise effective management and evaluation of occupational learning programmes (Tshilongamulenzhe, 2012b).

(4) There is no existing holistic and integrated management and evaluation model found in South Africa to date for occupational learning programmes (Tshilongamulenzhe, 2012b).

(5) There is no existing measure found in South Africa to date which assesses the effectiveness of management and evaluation practices pertaining to occupational learning programmes (Tshilongamulenzhe, 2012b).

The foregoing challenges coupled with the persistent skills shortage problem in the South African labour market, despite unprecedented policy interventions by government, have prompted the current research. Considering the enormous expectations for occupational learning programmes to provide an effective alternative towards addressing the skills deficit in South Africa, this research seems very important and profound. A valid and reliable measure will enhance management and evaluation practices pertaining to occupational learning programmes in South African workplaces and may potentially be used by SETAs and the Quality Council for Trades and Occupations (QCTO) to monitor the effectiveness of occupational learning programmes. It is envisaged that the application of the new measure will help

stakeholders in the skills development context in South Africa to manage and evaluate occupational learning programmes effectively in order to achieve the goals of the NSDS III and to improve the level of skills in the country.

4 Research objective

The objective of this research is to assess the psychometric properties of the Learning Programme Management and Evaluation (LPME) scale developed by Tshilongamulenzhe (2012b) as guided by the scale development framework of DeVellis (2012). The psychometric properties of the LPME scale were assessed in accordance with recommended practices (Gerbing and Anderson, 1988) and included assessments of some measures of content and construct validity and reliability. An examination of the psychometric properties of the LPME scale is necessary to ensure that the scale complies with the existing scientific conventions. This is also an important test to determine the rigour of the research process followed in the development of the new scale. The LPME scale seeks to ensure that occupational learning programmes are managed and evaluated effectively in the South African skills development context in order to achieve the goals of the NSDS III (2011-2016) (Tshilongamulenzhe et al., 2013). The newly developed scale was necessitated by the need for an integrated and coherent approach towards occupational learning programme management and evaluation with a view to effectively promote the alignment of skills development goals with the needs of the workplace, and with the broader growth and skills needs of the country's economy (DHET, 2010).

5 Focus of the article

In order to develop and assess the psychometric attributes of the LPME scale, this research was conducted in three phases, that is: scale development, scale refinement and scale validation. This article focuses on the first two phases of the research (scale development and scale refinement).

5.1 Phase 1: Scale development

Developing a valid and reliable scale is a process parallel to that aimed at constructing and testing a theory. As a result, scales go through a process of developing and testing. The aim is not only to develop a scale to allow theory testing but also to have a scale that is valid, reliable and reusable for other theories as well as for application purposes. Since no evidence was found in the literature which showed the existence of a valid and reliable scale to measure the effectiveness of learning programme management and evaluation practices in the South African skills development context, Tshilongamulenzhe (2012b) developed the Learning Programme Management and Evaluation (LPME) scale as reported in this research and also as reported in Tshilongamulenzhe et al. (2013). The newly developed scale has to be subjected to a process of psychometric evaluation in order to ascertain its compliance with the established scientific conventions, hence this research. It is critical to assess the LPME scale for its validity, reliability, fit and dimensionality, and to determine the rigour of the research process followed in the development of this new scale. The process followed in the development of the new LPME scale is hereby outlined:

5.1.1 Item generation

In item generation, the primary concern is content validity, which may be viewed as the minimum psychometric requirement for measurement adequacy and the first step in the construct validation of a new scale (Schriesheim et al., 1993; Tshilongamulenzhe et al., 2013). Content validity must be built into the scale through the development of items (Tshilongamulenzhe et al., 2013). As such, any scale must adequately capture the specific domain of interest yet contain no extraneous content (DeVellis, 2003, 2012; Slavec and Drnovsek, 2012; Tshilongamulenzhe et al., 2013). There seems to be no generally accepted quantitative index of content validity of psychological scales; therefore judgement must be exercised in validating a scale (Stone, 1978; Tshilongamulenzhe et al., 2013). There are two basic approaches to item development that can be used during item generation (Fornaciari et al., 2005; Hinkin, 2009; Hunt, 1991). The first is deductive, sometimes called 'logical partitioning', or 'classification from above'. The second method is inductive, known also as 'grouping', or 'classification from below'.

Deductive scale development utilises a classification schema or typology prior to data collection (Hinkin, 2009; Hunt, 1991). This approach requires an understanding of the phenomenon to be investigated and a thorough review of the literature to develop the theoretical definition of the construct under scrutiny. The definition is then used as a guide for the development of items (Hinkin, 2009; Schwab, 1980). This approach can be used in two primary ways (Hinkin, 2009). First, researchers can derive items designed to tap into a previously defined theoretical universe. Second, researchers can develop conceptual definitions grounded in theory, but then utilise a sample of participants who are subject-matter experts to provide critical incidents that are subsequently used to develop items.

Conversely, the inductive approach is so labelled because there is often little theory involved at the outset as researchers attempt to identify constructs and generate scale items from individual responses (Hinkin, 2009; Hunt, 1991). According to Hinkin (2009), researchers usually develop scales inductively by asking a sample of participants to provide descriptions of their feelings about their organisations

or to describe some aspect of behaviour. Both deductive and inductively generated items may then be subjected to a sorting process that serves as a pre-test, permitting the deletion of items that are deemed to be conceptually inconsistent. To summarise, the generation of items is the most important part of developing sound scales (Hinkin, 2009; Worthington and Whittaker, 2006).

It is important to ensure that a clear link was established between items and their theoretical domain (Tshilongamulenzhe et al., 2013). In the current research, this was accomplished deductively by beginning with strong theoretical frameworks on skills development, the occupational learning system, training management and evaluation. The literature review allowed the researcher to identify and define 15 key constructs that were deemed relevant to a draft LPME scale. These constructs were scrutinised and grouped together under four defined elements which were later assembled into a theoretical framework for the effective management and evaluation of occupational learning programmes as proposed by Tshilongamulenzhe (2012b). This framework and its elements and constructs were thereafter used as a basis to set parameters and guide the item-generation process. A total list of 182 items was generated for a draft LPME scale.

5.1.2 Item development

At this stage of the process the researcher identifies a potential set of items for the construct or constructs under consideration. The elements and constructs identified in the previous stage, which constitute a theoretical framework as proposed by Tshilongamulenzhe (2012b), were used as parameters to sort the items rigorously in order to establish if they matched each of the elements and constructs of the theoretical framework. All 182 items were each matched to a relevant construct in the draft LPME scale with the guidance of existing theory.

The next task was the administration of these items to examine how well they confirmed expectations about the structure of the measure (Hinkin, 2009). This process included an assessment of the psychometric attributes such as validity, reliability, fit and dimensionality as reported later in this article. There has been considerable discussion regarding several important issues in measurement that have an effect on scale development (Hinkin, 2009). The first deals with the sample chosen, which should be representative of the population that the researcher will be studying in the future and to which results will be generalised. The sample chosen for the administration of items in this research was considered representative of the population as it contained all the key stakeholders in the occupational learning system (skills development providers, employers and learners/apprentices).

The second issue of concern was the use of negatively worded (reverse-scored) items. Such items may be employed primarily to ease response pattern bias (Hazlett-Stevens et al., 2004; Idaszak and Drasgow, 1987; Van Sonderen et al., 2013). The use of reverse-scored items has come under close scrutiny by a number of researchers. It has been shown to reduce the validity of questionnaire responses (Schriesheim and Hill, 1981) and may introduce systematic error to a scale (Jackson et al., 1993). Researchers have shown that reverse scoring may result in an artifactual response factor consisting of all negatively-worded items (Carlson et al., 2011; Harvey et al., 1985; Schmitt and Stults, 1985). In this study, no reverse-scored items were used.

The third issue concerns the number of items in a measure. Both adequate domain sampling and parsimony are important in order to obtain content and construct validity (Cronbach and Meehl, 1955). Total scale information is a function of the number of items in a scale, and scale lengths could affect the responses (Hazlett-Stevens et al., 2004; Roznowski, 1989; Van Sonderen et al., 2013; Worthington and Whittaker, 2006). Keeping a measure short is an effective means of minimising response biases (Schmitt and Stults, 1985; Schriesheim and Eisenbach, 1990; Worthington and Whittaker, 2006) but scales with too few items may lack content and construct validity, internal consistency and test-retest reliability (Nunnally, 1976; Kenny, 1979; Hinkin, 2009). Scales with too many items, on the other hand, can create problems such as respondent fatigue or response biases (Anastasi, 1976; Panther and Uys, 2008). Additional items also demand more time in both the development and administration of a measure (Carmines and Zeller, 1979; Hinkin, 2009). Adequate internal consistency reliabilities can be obtained with as few as three items (Cook et al., 1981; Hinkin, 2009) and adding items indefinitely progressively reduce and impact on scale reliability (Carmines and Zeller, 1979; Hinkin, 2009). In this research, a draft LPME scale consisted of an average of 12 items per construct, with a minimum range of three items to a maximum of 48 items for the 15 constructs identified by Tshilongamulenzhe (2012b).

With respect to the fourth issue, the scaling of items, it is important that the scale used should generate sufficient variance among participants for subsequent statistical analyses. In this research, the items were carefully worded, and the elements and constructs were properly defined to ensure that sufficient variance could be established among the participants.

The fifth issue is that of the sample size needed to conduct tests of statistical significance appropriately. The results of many multivariate techniques can be sample-specific, and increases in sample size may ameliorate this problem (Hinkin, 2009; Schwab, 1980). In simple terms, this means that, if powerful statistical tests and confidence in results are desired, the larger the sample, the better.

However, obtaining large samples could be very costly (Linacre, 1994; Stone, 1978; Verma and Burnett, 1996). As sample size increases, the likelihood of attaining statistical significance increases – it is important to note the difference between statistical and practical significance (Cohen, 1969). The current research had adequate sample (n = 652) to allow for the execution of a variety of statistical tests.

5.1.3 Item evaluation and refinement

At this stage, the review of the item pool begins. A team of about 20 expert reviewers was purposefully sampled and invited to review and assess the draft LPME measure. These experts were chosen in accordance with the three criteria prescribed by the Standard for Educational and Psychological Testing (American Psychological Association, 1985), that is, relevant training, experience and qualifications. The review team included expert academics and managers in the field of human resource development/training management. A group of about seven postgraduate students in the field of human resource development was also included. The total team was comprised of 27 participants. The review process focused on the face and content validation of the draft scale wherein the quality of the items was assessed in relation to the target population. Experts reviewed a pool of 182 items with instructions to assess the face, construct and content validity, to evaluate the relevance of the items to the constructs they proposed to measure, to assess the importance of the items, to assess the item difficulty level (easy, medium, difficult), and to judge items for clarity. Content Validity Ratio (CVR) proposed by Lawshe (1975) was used to estimate experts' perception of item relevance, importance and clarity. The CVR formula was applied after expert participants provided answers to three spectrums – 'item is relevant', 'item is important', and 'item is clear'- for each of the scale items (Tshilongamulenzhe et al., 2013). The goal was to obtain a reasonable number of items that would constitute the final draft LPME scale.

Item quality and content relevance for the final draft of the LPME scale were determined based on the strength of the literature and content experts' results and qualitative feedback. A decision to retain items for the final draft of the LPME scale was made based on the results of expert analysis, and on the acceptable qualitative feedback received regarding item clarity, difficulty, relevance and importance. The expert review results showed a clean ranking of each item in terms of clarity, difficulty, relevance, and importance (Tshilongamulenzhe et al., 2013). All the items were consistently ranked using CVR and the results ranged from an average CVR of .84 to 1 overall (Tshilongamulenzhe et al., 2013). However, as an average of less than 1 demonstrates that not all expert reviewers agree on the clarity, difficulty, relevance, and importance of some items, the researcher decided to use a CVR cut-off point of .96 which is above the minimum of .90 used by Davis (1992). This was aimed to eliminate those items that were not clear, relevant and important to experts in the draft LPME scale in order to ensure that the instrument is valid as per the specified content domains as far as possible and to limit the variance error to less that 5% (p <.05).

According to Tshilongamulenzhe et al. (2013), the content expert results showed that 33 items had a CVR of 1, showing agreement across the board among experts; 76 items had a CVR ranging between .98 and .96. Four best-averaged items below a .96 cut-off point in two constructs were specially included in the final item pool to ensure that each construct had at least five items prior to exploratory factor analysis. Each pair of these four retained items had the highest CVR below the cut-off point (.93 and .94 respectively) in their theoretical constructs ('observation' and 'self-evaluation'). The revised draft LPME scale consisted of 113 items after the remaining 69 items below a CVR cut-off point of .96 had been eliminated (Tshilongamulenzhe et al., 2013). The revised draft LPME scale was then administered to the development sample for this research on a 6-point Likert-response format, ranging from (1) strongly agree to (6) strongly disagree. All items were classified into the appropriate construct and each construct had at least five items (Tshilongamulenzhe et al., 2013). As Benson and Clark (1982) state, a scale is considered to be content valid when the items adequately reflect the process and content dimensions of the specified aims of the scale as determined by expert opinion.

5.2 Phase 2: Scale refinement

This phase focused on the administration of the draft LPME scale on the development sample and the following are the materials and methods applied to achieve the objective of the research:

6 Methodology

6.1 Research approach

This phase followed a quantitative, non-experimental, cross-sectional survey design. Primary data collected from five Sector Education and Training Authorities (SETAs) and a human resource professional body in South Africa were used to achieve the objectives of this phase of the research.

6.2 Research participants

Participants in this study were 652 individuals drawn from six organisations: five SETAs and the South African Board for People Practices (SABPP), using a probabilistic simple random sampling technique. After permission had been obtained from the SETAs and the SABPP, a sample was extracted from the databases of

these organisations. These participants were diverse in their occupational status and included learning or training managers/employers, mentors/supervisors of learners/apprentices, skills development officers/providers, learning assessors/moderators as well as learners/apprentices. All sampled participants had to have some knowledge and understanding of the South African skills development context, including the new occupational learning system. The majority of the participants were young people trying to establish themselves in their careers. About 78.8% of the participants were aged below 35 years. Females constituted about 52.8% of the participants. In terms of educational achievement, 58.8% of the participants had acquired a senior certificate (matriculation/N3) as their highest qualification, with only 13.9% who had achieved a professional (4 years)/honours degree and higher. Regarding exposure to learning programmes, 86.6% of the participants were involved in learnerships, compared with just 13.4% who were involved in apprenticeships. In terms of current occupational commitments, over 65% of the participants constituted learners/apprentices, with 9% comprising employers/managers.

6.3 Measuring instrument

The revised draft LPME scale consisting of 113 items was used for data collection. This scale measured the elemental aspects outlined in the theoretical framework proposed by Tshilongamulenzhe (2012b).

6.4 Research procedure

The researcher wrote letters seeking permission to undertake this study to all 21 SETAs and the SABPP. Only the SABPP and five of the 21 SETAs gave permission for the research to be undertaken within their jurisdictions. Once permission to undertake the research had been granted, the researcher started the process of planning for sampling and data collection with the respective organisations. The data collection process was carried out in the provinces of Gauteng, North West and Mpumalanga in South Africa.

6.5 Statistical analyses

Data for this study were analysed using the Statistical Package for Social Sciences (SPSS, Version 20) (IBM, 2011), Winsteps (Version 3.70.0) (Linacre, 2010) and Analysis of Moment Structures (AMOS) (Arbuckle, 2011). Exploratory factor analysis was executed using SPSS; Rasch analysis was executed using Winsteps; and structural equation modeling was executed using AMOS.

7 Results

7.1 Exploratory factor analysis

Exploratory factor analysis (EFA) was carried out in this research in order to reduce the number of items on the draft LPME scale into theoretically meaningful factors, to establish the underlying dimensions between these items and their constructs, and to provide evidence of construct validity. The EFA process began with the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and the Bartlett's Test of Sphericity in order to test the appropriateness of the data for factor analysis. It is evident in Table 1 that the KMO value of .960 was obtained, thus confirming the adequacy of sample for further statistical analysis. Specifically, the KMO value varies between 0 and 1, and values closer to 1 are better. The suggested minimum value that is acceptable for further analysis is .60 (Tabachnik and Fidell, 2001).

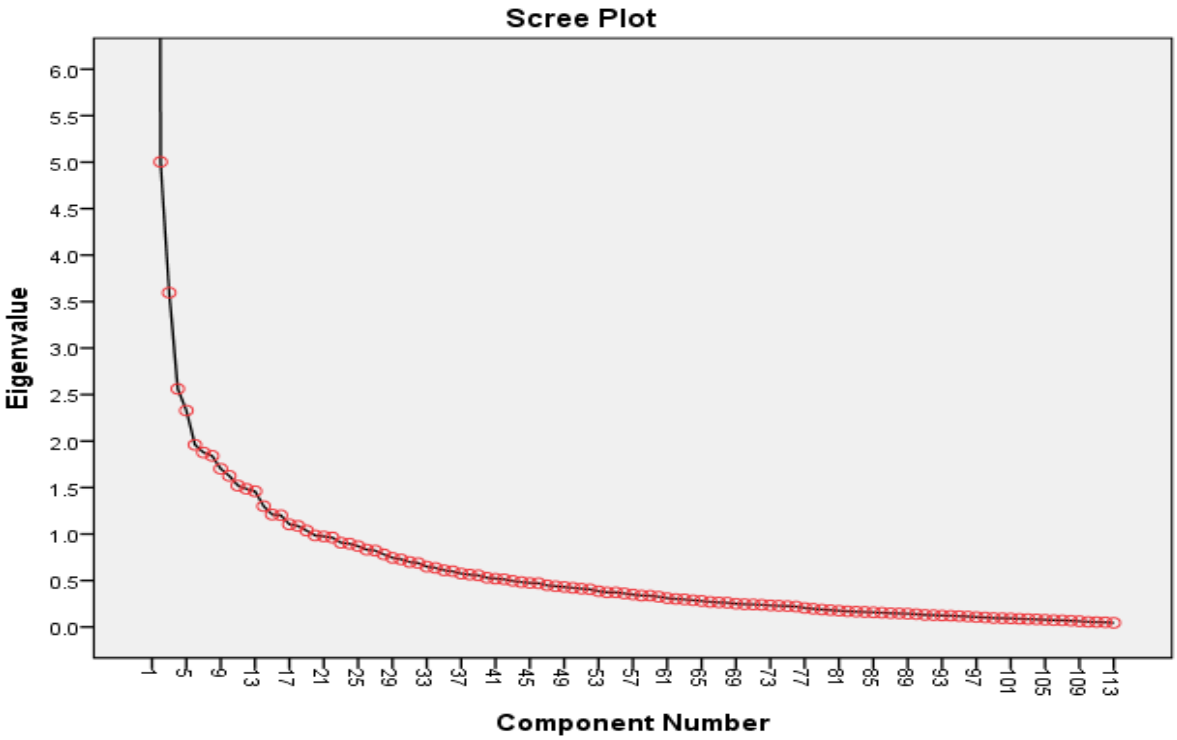
Table 1. KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.960
Bartlett's Test of Sphericity	Approx. Chi-Square	49316.106
	Df	6328
	Sig.	.000

Further to this, the Bartlett's Test of Sphericity was conducted, as depicted in Table 1, to test the null hypothesis that the correlation matrix is an identity matrix. An identity matrix is a matrix in which all the diagonal elements are 1 and off diagonal elements are 0 (Tshilongamulenzhe et al., 2013). The Bartlett's Test of Sphericity value was found to be statistically significant (df. 6328; $p<.05$) and rejects the null hypothesis that the correlation matrix is an identity matrix. The determinant of the correlation matrix between the factors was set to zero in this research due to orthogonal rotation restriction which suggests that the factors cannot be correlated. Consequently, the results of these two tests show that data for this research can be subjected to Principal Components Analysis (PCA) and further statistical tests with confidence.

The next important task was to execute a PCA of all the 113 items of the draft LPME scale using varimax rotation in order to scientifically ascertain the constructs in which these items belong. Figure 1 presents the Scree Plot representation of all items of the draft LPME scale and the eigenvalue units of the matrix which are important in factor extraction.

Figure 1. Scree plot for factor retention



The factor extraction procedure followed an exploratory, iterative process using Kaiser's criterion and Catell's scree test in combination with the theory to specify the number of factors to be retained (Scheepers et al., 2008). The exploratory results are shown on the scree plot in Figure 1. Guided by existing theory and the quest to extract factors that could yield the most interpretable results with the least chance of random error, the researcher used the following criteria to determine the number of factors to be retained in the current research: a cut-off point of 1.45 eigenvalue units; items loading at .4 and higher; and a minimum of 4 items per factor. These criteria were also applied with success in other studies as reported by Tshilongamulenzhe et al. (2013). Based on the scree plot's representation in Figure 1, the first eleven factors were retained in this study as they met the stated criteria.

Subsequently, a total of 32 items which did not meet the criteria were eliminated. The remaining 81 items which constitute the final LPME scale as embedded in each of the eleven factors were retained, and each of these factors was considered a sub-scale of the LPME scale. A smallest sub-scale had 3 items while the largest had 16 items.

7.2 Separation indices, item fitness and reliability analysis

The results of this research include a summary of person/item separation indices, measure order, principal components analysis and reliability coefficients as shown in Table 2. Person and item separation and reliability of separation assess instrument spread across the trait continuum (Green and Frantom, 2002). Separation measures the spread of both items and persons in standard error units. It can be thought of as the number of levels into which the sample of items and persons can be separated. For a measure to be useful, separation should exceed 1.0, with higher values of separation representing greater spread of items and persons along a continuum. Larger person/item separation indicates higher precision, meaning more distinct levels of function can be distinguished (Mallinson et al., 2004). For example, a person separation index (G = 1.28) for the Administrative Processes sub-scale as shown in Table 2 could reliably separate participants into at least two statistically distinct strata of persons (high ability and low ability persons). Similarly, the item separation index (G = 3.59) shows about five levels of item difficulty; very easy, easy, moderate, difficult and very difficult.

Lower values of separation indicate redundancy in the items and less variability of persons on the trait. If separation is 1.0 or below, then this may indicate that the items do not have sufficient breadth in position (Green and Frantom, 2002). In that case, it might be wise to reconsider what having less and more of the trait means in terms of items agreed or disagreed with, and on revision, add items that cover a broader range. An exception to this occurs if a measure is used to make dichotomous decisions.

Reliability of person separation was used in this research to demonstrate whether participants were being adequately separated by items along the continuum representing the construct, as well as provide an indication of replicability for person

placement across other items measuring the same construct. Equally important, the reliability of item separation was also examined to ensure that the measure adequately separates the people in terms of their ability.

The person separation indices for the LPME sub-scales as depicted in Table 2 ranged from .99 to 2.17, whereas the item separation indices range from .90 to 3.59. The expected mean value of both infit and outfit is 1 (Linacre and Wright, 1994; Planinic et al., 2010). Values < 1 suggest a lack of stocasticity in the data, potentially due to a violation of local independence – local independence means that, after controlling for the latent trait, responses to items should be independent of each other (Fendrich et al., 2008). Values > 1 are indicative of excessive variability, which may signify a departure from unidimensionality. In this research, the average scale MNSQ Infit value was .99, meaning that there was a 1% deficiency in Rasch model predicted randomness in the data. Similarly, the average scale MNSQ Outfit value was .97, showing a 3% deficiency. However, the MNSQ Infit values for the LPME sub-scales ranged from .99 to 1.01; whereas the MNSQ Outfit values ranged from .97 to 1.04.

Table 2. Indices and fit statistics for the dimensions draft LPME scale

Sub-scale	*No. of items*	*Separation Indices*		*Item Fit Statistics (Average Mean Scores)*		*Principal Components Analysis*		*Cronbach Alpha (α)*
		Person Separation	*Item Separation*	*MNSQ Infit*	*MNSQ Outfit*	*Variance Explained (%)*	*Unexplained Variance 1st Contrast (Eigenvalues)*	
Administrative Processes	4	1.28	3.59	1.00	1.00	45.2	1.9	.83
Environmental Scanning	6	1.06	2.02	.99	.99	45.8	1.4	.83
Monitoring and Evaluation	5	.99	3.01	.99	.99	46.4	1.7	.78
Observation and Problem Solving	6	1.50	2.59	.99	1.01	45.5	1.7	.88
Policy Awareness	8	1.74	1.58	1.00	.99	47.8	1.9	.89
Quality Assurance	4	1.08	2.69	.99	.97	44.7	1.6	.83
Stakeholder Inputs	17	2.17	2.98	1.00	1.01	51.8	1.7	.93
Strategic Leadership	4	1.17	2.27	.99	.96	56.9	1.6	.79
Learning Programme Design and Development	13	2.05	2.42	1.01	1.04	47.9	1.8	.92
Learning Programme Specifications	3	1.20	.90	.99	.78	61.1	1.6	.90
Occupational Competence	11	1.91	1.08	1.00	1.01	45.1	1.6	.92
Total Scale	81	1.46	2.28	.99	.97	48.9	1.6	.86

Outfit is based on the conventional averaged sum of squared standardised residuals, whereas infit is an information-weighted sum which gives more value to on-target observation (Planinic et al., 2010). A large infit value on a particular item indicates that some participants who had the ability to respond to difficult items did not respond in a way consistent with the model.

A large outfit value of an item indicates that persons who did not have the ability to respond to difficult items, responded in an unexpected way. For example, large outfit of an easy item means that some able persons have unexpectedly failed on that item. Larger outfit of a difficult item means that some persons of low ability have unexpectedly succeeded on this item. Large infit values are generally considered more problematic than larger outfit values. The results depicted in Table 2 do not show any evidence of excessive variability or deficiency regarding MNSQ Infit for all the LPME sub-scales.

The variance explained by the Rasch model as depicted in Table 2 is adequate with reasonable eigenvalues in the first contrast. To judge whether a residual component adequately constitutes a separate dimension, the size of the first contrast eigenvalue (≥2) of unexplained variance must be attributable to this residual contrast. This suggests that all the LPME sub-scales are unidimensional as they have acceptable eigenvalue units (<2) in the first contrast. The PCA of standardised residuals has an advantage over fit statistics in detecting departures from unidimensionality when (1) the level of common variance between components in multidimensional data increases and (2) there are approximately an equal number of items contributing to each component (Smith, 2004).

7.3 Structural Equation Modeling

The eleven-factor model of the LPME scale was tested by examining both overall model fit and the contribution of each indicator to the latent construct. The results are depicted in Tables 3 and 4. The factorial structure was tested using structural equation modeling to determine if the expected linear relationships existed between the latent construct and

its indicators of interest. According to Kelloway (1998), chi-square ratios of between 2 and 5 are regarded as indicative of good fit. Ratios less than 2 have been interpreted as indicating over-fitting (De Goede and Theron, 2010).

A Comparative Fit Index (CFI), Normed Fit Index (NFI) and Turker Lewis Index (TLI) ≥ .95 (Hu and Bentler, 1999), and Root Mean Square Error of Approximation (RMSEA) of ≤ .06 indicate good fit in the measurement model (Hu and Bentler, 1999). A Standardised Root Mean Square Residual (SRMR) of ≤ .80 indicates a good model fit (Hu and Bentler, 1999).

Table 3. Summary of models

Model	*CMIN/DF*	*NFI*	*TLI*	*CFI*	*RMSEA*	*PCLOSE*	*ΔCMIN/DF*	*SRMR*
Criteria for a good fit	≤ 2	≥ .95	≥ .95	≥ .95	≤ .06	≤ .05	≥ .01	≤ .08
1. Initial model	5.659	.943	.929	.953	.090	.000	-	-
2. Revised model	1.847	.990	.987	.995	.038	.854	-3.812	-
3. Final model	3.363	.971	.964	.979	.064	.030	1.516	.0254

The results shown in Table 3 indicate that the initial hypothesized eleven-factor model did not fit the data well as its fit indices fell below the thresholds except for CFI (.95) and this model was revised. The revised model showed a good fit with the data (*df* = 23; x^2/df = 1.84; NFI = .99; TLI = .98; CFI = .99 and RMSEA = .03; PCLOSE ≤ .85). However, evidence of significant variance of measurement error found during the analysis of the revised model data further directed the researcher to refine the revised model. The results of the final model are also presented in Table 3. It is clear that the x^2 is significant at 127.81 (*df* = 38; x^2/df = 3.36). However, all other fit indices show that the final model fits the data perfectly (NFI = .97; TLI = .96; CFI = .97; RMSEA = .06; PCLOSE ≤ .03; and SRMR = .02).

Table 4. Standardized regression weights for the initial and final models

Sub-scale			*Initial model*	*Final model*
Programme_DD	<---	OLP.	.865	.845
Policy_Awareness	<---	OLP.	.817	.810
Observation_PS	<---	OLP.	.815	.825
Quality_Assurance	<---	OLP.	.743	.720
Administrative_Processes	<---	OLP.	.764	.776
StakeholdersInputs	<---	OLP.	.859	.861
Strategic_Leadership	<---	OLP.	.533	.541
LearningPS	<---	OLP.	.740	.717
Monitoring_Evaluation	<---	OLP.	.675	.681
Occupational_Com	<---	OLP.	.800	.793
Enviromental_Scanning	<---	OLP.	.713	.692

Examining the data further, the researcher also analysed the standardized regression estimates in order to examine the extent of variance between the sub-scales of the LPME scale and the results are depicted in Table 4.

A standardized regression estimate (coefficient from an indicator variable to its construct) of ≥ .30 indicates that a variable adequately contributes to the construct it was intended to measure (Kline, 2005). It is evident in Table 4 that the standardized regression weights for the LPME sub-scales in both the initial and final model are adequate to support model fit as they range between .53 to .86, and .54 to .86 respectively. All the estimates are positive and statistically significant, and they surpass the ≥ .30 value suggested by Kline (2005).

An analysis of all individual parameters in the final model shows that all eleven sub-scales of the LPME scale were significant predictors of an effective occupational learning programme (critical ratios (CR) were statistically significant and ranged from 13.790 to 25.528) and supported the validity, reliability and dimensionality of the LPME scale and its sub-scales.

8 Discussion

The focus of this research was to assess and report the psychometric attributes of the LPME scale developed by Tshilongamulenzhe (2012b) who was guided by Scheepers et al. (2008) proposition that a valid measurement scale must be viewed as a pre-condition for the successful study of phenomena in business and science. According to Boshoff (2009) and Terblanche and Boshoff (2006), reliability assessment and validity checks have improved in recent years due to the availability of statistical procedures such as exploratory and confirmatory factor analysis which provide additional evidence of construct validity. The psychometric attributes of the LPME scale were examined in accordance with the recommended practices as suggested by Gerbing and Anderson (1988), and these included assessment of measures of scale validity, reliability, fit and dimensionality.

Construct validity was measured when the content of each item of the LPME scale was rigorously matched with the constructs of this research during the item development phase. Content validity was measured when the items of the LPME scale were checked for consistency with the definition of the elements and constructs of the theoretical framework proposed by Tshilongamulenzhe (2012b). Discriminant validity was measured during exploratory factor analysis. As suggested by Tabachnick and Fidel (2001), the results of the KMO

Measure of Sampling Adequacy and Bartlett's Test of Sphericity provided indications that the data of this research were suitable for factor analysis. Catell's scree test, as depicted in Figure 1, identified the factors that have a substantial amount of common variance before the inflection point and these were retained as they contribute the most to the explanation of the variance in the data set. These rigorous statistical procedures executed in this research and the findings show that the LPME scale is valid and reliable, and complies with the psychometric expectations.

The validity and reliability claim on a new scale depends on the methodology used to arrive at the verdict. According to De Goede and Theron (2010), methodology is meant to serve the epistemic ideal of science and if the methodology used is not made explicit, evaluation of the researcher's conclusions become difficult. Under such circumstances, the rationality of science suffers, as does ultimately the epistemic ideal of science (Babbie and Mouton, 2004). A comprehensive account of the methodology applied in this research was succinctly described. The development of the LPME scale was guided by the framework of DeVellis (2012) and all stages of this framework were successfully applied, which further enhances the validity and reliability of the scale. The reliability of the LPME scale and its sub-scales was measured using Cronbach's alpha coefficient and the findings show an overall coefficient of .86 for the scale, while those of the sub-scales ranged from .78 to .93. These coefficients are above the cut-off point of ≥ .70 which is considered acceptable (Kline, 2005). The reliability coefficient results are depicted in Table 2. A further measurement of reliability was conducted using the Rasch model through an assessment of separation indices, item fit statistics and principal component analysis for unidimensionality. The results show an average person separation index of 1.46 and an item separation index of 2.28. The average item MNSQ infit was .99 while the MNSQ outfit was .97. The average variance explained by the LPME scale relative to the Rasch model was 48.9% with 1.6 eigenvalue units. These results are depicted in Table 2 and they support the validity and reliability of the LPME scale.

De Goede and Theron (2010) suggest that, in order to come to valid and credible conclusions about the ability of the structural model to explain the pattern of covariance among the indicator variables, evidence is required that the manifest indicators are indeed valid and reliable measures of the latent variables they are linked to. The results of structural equation modelling computed in this research as depicted in Tables 3 and 4 indicate a good model fit for the LPME scale (NFI = .97; CFI = .97; RMSEA = .06 and SRMR = .02). The results show that all 11 dimensions were significant predictors of occupational learning programmes, and this further supports the validity and reliability of the LPME scale. Overall, the findings of this research led to a conclusion that the LPME scale is valid, reliable and unidimensional, and can be applied with confidence in the South African skills development context.

9 Limitation, implications and recommendations

However, irrespective of the contributions made by this research, a limitation is that cross-validation of the LPME scale on a different sample has not been done yet. Therefore, the findings are based on data obtained from the original development sample of this research.

The findings of this research have the following implications for practice within the South African skills development context:

- The LPME scale and its sub-scales should be seen as a window of opportunity for future research initiatives focusing on the management and evaluation of occupational learning programmes. The sub-scales of the LPME scale can be applied autonomously.
- Scholars in the sub-field of training management/human resource development should find it possible to use the findings of this research as a baseline input to further critique and refine the LPME scale and its sub-scales.
- The LPME scale and its sub-scales should enable relevant occupational learning stakeholders to diagnose weaknesses in the system so that appropriate remedial action can be taken using a scientific tool.
- SETAs, skills development providers, and employers should use the LPME scale and its sub-scales in their task of managing, monitoring and evaluating the feasibility and success of learning programme implementation in their respective contexts.

The findings of this study provide direction for future enquiry by suggesting a cross-validation study and an action research whereby the newly developed LPME scale and its sub-scales could be applied and evaluated in practice. To this end, reliability is regarded as a necessary condition for validity.

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