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STUDIA UNIVERSITATIS BABEȘ-BOLYAI OECONOMICA, VOLUME 61, ISSUE 2, 2016

THE DETERMINANTS OF CONSUMER TRUST IN THE BANKING INDUSTRY IN ZIMBABWE

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Abstract. The purpose of this study is to examine the determinants of customer trust in the Zimbabwean banks. The study determines the effect of bank competence, bank integrity, benevolence, structural assurance and service recovery on customer trust. The data were collected by self-administered questionnaires and analyzed by correlation and multiple regression analysis. The results indicated that benevolence, structural assurance, and service recovery exhibit a statistically significant influence on customer loyalty in the context of Zimbabwean banks. By contrast, bank competence and integrity have an insignificant effect on customers' trust. The study concludes that in the context of Zimbabwean banks, in order to influence customer loyalty, banks need to invest in service recovery programs, display benevolent character and assure customers of quality service.

JEL Classification: G2, M2

Keywords: customer loyalty, benevolence, bank competence, bank integrity, structural assurance.

1. Introduction

Although low public trust in the banking industry is a global phenomenon, the problem is well documented and has become so serious that it needs urgent and serious attention. The low trust has manifested itself in a number of ways. Firstly, just 30% of the population are banked. Secondly, there is very ratio of transient deposits rather than long term deposits. Thirdly, there is low uptake and usage of electronic banking offerings (mobile and internet) in favour of non-bank alternatives like telecommunications companies' money transfer products for example Ecocash (Finscope, 2014; Demirguc-Kunt, Klapper, Singer, and Van Oudheusden, 2015).

Despite concerted efforts by the central bank (the Reserve Bank of Zimbabwe) to instil consumer confidence in the banking sector by agreeing with banks to lower bank charges, low loan interest rates and interests on deposits, subdued consumer trust in banks persists.

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The Zimbabwean banking industry has been fragile for some time now with at least seven (7) banks going under in the last ten years. The confidence of Zimbabweans in banks took a further knock from the hyperinflation of 2002-2008 and the subsequent dollarisation of the economy in 2009 that wiped out people's savings and deposits (Mangudhla, 2015). The Zimbabwean people still have fresh memories of acute cash shortages and long winding queues in banking halls during the hyperinflation years of 2002 to 2008, a problem carried forward even into the dollarisation era for some banks mostly the indigenous owned banks. The economic stagnation of 2010-2015 has led to an increasingly in-formalised economy that remains largely unbanked and there is an uneasy relationship between the banks and the small businesses and informal entities.

There is a significant gap in literature of what it takes for Zimbabwe to improve consumer trust in the banking industry. There is a dearth of material on what exactly determines the level of confidence and reliability that the Zimbabwean public has of its banks and what should be done to improve this level of trust. Against this backdrop, the main purpose of this study was to investigate the factors that are critical in improving the level of consumer trust in the banking industry in Zimbabwe. The study aimed to achieve five specific objectives. The first objective was to examine how bank competence influence consumer trust in the bank. Secondly, the study sought to determine how bank integrity influence consumer trust in a bank. The third objective was to examine how benevolence impact customer's trust in the bank and the fourth one was to determine whether structural assurance influences consumer trust in a bank. Lastly, the study aimed to examine the influence of service recovery influences consumer confidence in the bank.

The findings of this study provide an invaluable contribution to the existing knowledge in the customer loyalty literature by developing and testing a conceptual framework consisting of the main determinants of customer trust in the banking sector. The results also provide a platform for further research on how customer trust in banks can be enhanced. An understanding of the main determinants of customer trust in a bank is important to senior management, policy makers and investors of financial institutions in Zimbabwe.

2. Literature Review

Trust has economic value in that it enables interaction between people and between organisations and can reduce transaction costs (Nooteboom, 2007). Trust reduces the cost of transactions between parties and enables new forms of cooperation (Yosuf and Nauman, 2015). In that vein, Zheng, Roehrich, and Lewis, 2008) maintain that trust makes a big contribution to employment creation and economic prosperity. Zak and Knack (2001) have observed that low trust-environments lead to lower rates of investment It is from such observations that researchers began interested in trust as a form of social capital (Guiso, Sapienza and Zingales, 2004). Following an in-depth analysis of numerous past formulations, Halliburton and Poenaru (2010) identified two main types of trust, one that is based on the relations between the two parties involved (relational trust), and one that is based on past behaviour of the one party that needs to be trusted and/or constraints on future behaviour (calculative trust).

Cognitive trust is the confidence or reliance that a customer has of a service provider based on the level of expertise and dependability that the service provider possesses (Johnson and Grayson, 2005). It is a function of the track record of the service provider that allows the customer to predict, with some level of confidence, the probability that the trusted party will fulfil their obligations. This type of trust can be called "predictability" or "reliability" (Johnson and Grayson, 2005). Even though cognitive trust is based on knowledge, the need for trust comes out of a setting of incomplete information. A case of complete certainty concerning the other party's future actions would suggest that risk is of no substance and trust is redundant. In real life, trading parties can minimise uncertainty and opportunistic behaviour through due diligence and legal contracts. Consumer transactions, however, involve much less legal contracting, and information asymmetry precludes effective due diligence. Affective trust is demonstrated by feelings of being secure and perceptions about the strength of the relationship (Halliburton and Poenaru, 2010). The basis of affective trust is confidence in a party due to emotional instincts. As emotional relations deepen, as parties interact, trust between parties may venture beyond that which is justified by available knowledge. Academics reason that emotional exchanges are a crucial and enduring element of consumer-level service interactions and form the basis for bonds of trust (Johnson and Grayson, 2005).

The concept of trust in the banking industry has received significant attention in research. This stems from the realisation that trust is pivotal to trade and development in the financial sector (Gillespie and Hurley, 2013). Nienaber, Hofeditz, and Searle's (2014) study identifies and examines 20 studies which attempt to describe, measure or validate trust in the financial services sector. These studies stretch from corporate to retail to electronic banking. However, there seems to be no consensus in all this literature on what influences a financial institution's trustworthiness.

Scholars seem to agree that trust in banking industry arises because of the three conditions that require trust: vulnerability, uncertainty and interdependence. Organisational trust assumes the willingness of one party to be vulnerable. This vulnerability exists for consumer in their relationship with their bank. An example is that of bank closures resulting in loss of consumer deposits. Interdependence is also evident in the bank /customer relationship. This is particularly true in the area of advice where financial knowledge can be limited and the consumers depend on the best advice of their bank to lead them in their decision making (Berry, Werff and Lynn, 2015).Similarly, risk and uncertainty is inherent in financial service products but is further compounded by consumers' typical low levels of knowledge and interest in the product offering (Ennew and Sekhon, 2014).

The traditional trustworthiness model of ability, benevolence and integrity have been adapted in financial services trust literature to provide a more suitable assessment of the trustworthiness characteristics of a banking institution. Ennew and Sekhon (2007) argue that trust can be evaluated by measuring benevolence (the extent to which a financial institution is concerned about its customer's interests), integrity (the extent to which a financial institution is honest and consistent in what it does for its customers), ability / expertise (the extent to which a financial institution is seen as having the necessary skills and ability to deliver its services) and shared values (the extent to which consumers believe that a financial services provider has values similar to their own). The researchers extend this model in later studies were they contend that a financial institution's trustworthiness is determined by expertise and competence, integrity and consistency in behaviour, effective communications, shared value and concern and benevolence (Ennew and Sekhon 2014; Ennew, Kharouf and Sekhon, 2011). Colquitt, Scott and LePine (2007) found significant influences of ability, benevolence, and integrity on trustworthiness.

There are differences with other authors on these variables in other studies as in Roy, Eshghi and Shekha's (2011) research where integrity, shared values, expertise, ability and consistency and customer orientation are put forward as the key determinants of a bank's trustworthiness. Hurley (2006) and Hurley, Gillespie, Ferrin and Dietz (2013) describe dimensions of trustworthiness as best accounted for by measuring similarities, benevolent intentions, capability, predictability and integrity and open and transparent communication.

Another bone of contention is the apparent confusion of trustworthiness with trust. Möllering (2006) argues that trustworthiness concerns the perceptions people have of the trustee which then leads to trust behaviour. Therefore, there is a need to extend any discussion on trustworthiness and to shed light on whether that trustworthiness translates to trust. Some academics argue that trust propensity is outside the control of banks (Yousfazai et al., 2003). Moreover, Colquitt et al. (2007) found trust propensity to have very low influence on overall trust.

Traditional trust theory dominates most of the factors that are perceived as impacting financial service trustworthiness. Integrity encompasses the ideas of organisational honesty and delivering on promises (Sheppard and Sherman, 1998) in (Berry, Werff and Lynn, 2015). Ennew, Kharouf, and Sekhon (2011) are of the view that integrity is closely aligned to "best advice" and this is a fundamental challenge of the financial services industry. Integrity and honesty, and empathy or benevolence could be interpreted as indicative of emotional trust whereas competence or credibility can be construed as more rational trust (Halliburton and Poenaru 2010). Cho and Hu (2009) model trustworthiness as dependent on reliability, responsiveness, assurance, empathy and tangibility.

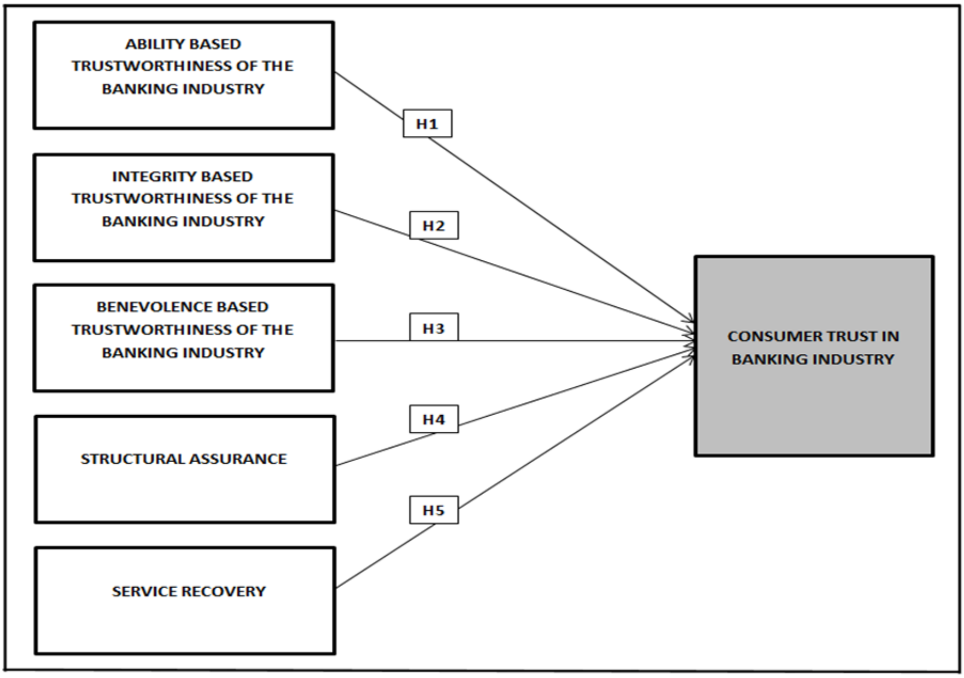
Nienaber, Hofeditz, and Searle (2014) derived that the regulatory environment, reputation, customer satisfaction and shared values are very influential factors for trust in organisations, especially within the financial services sector while communication emerged as having become significantly less important over the last decade. They propose that trust building will stem from enforced regulation, third party endorsements and customer satisfaction programs (Nienaber, Hofeditz, and Searle, 2014).

Another avenue worth pursuing concerns what impact lived experiences has on level of trust in financial services. Van der Cruijsen, De Haan, and Jansen (2013) found that adverse experiences with banks during a financial crisis do not only directly lower trust in banks, but also have a negative effect on generalized trust. According to EY's (2014) Global Consumer Banking Survey 2014, financial stability and security procedures are the main drivers of trust in banking institutions. According to KPMG's (2013) Africa Banking Industry Customer Satisfaction Survey, 21.4 percent of respondents and 11 out of 14 countries surveyed ranked financial stability as the most important reason for maintaining banking relationships which the researchers argue is not surprising given the global financial crisis and the fragility of African banks.

3. Conceptual framework and hypotheses development

From the foregoing review of theoretical and empirical literature, the research model being tested is depicted below. This study seeks to add to the discourse on public trust in the banking industry in two major ways: Firstly, It seeks to address the influence of the three traditional trustworthiness attributes of ability, integrity and benevolence on consumer trust of banks in the Zimbabwean setup. Secondly, It considers two important extra dimensions that determine the overall trust in banks that consumers have, the first of which is an analysis how the control environment (structural assurance) influences consumer trust in banks and the second of which is an endeavour to determine how the manner of dealing with breaches of trust (service recovery) impacts on the development of consumer trust in banks in Zimbabwe.

Figure 1: Conceptual Framework



Based on the foregoing discussion, the following hypotheses were postulated:

H1: Ability (competency) has a positive influence on consumer trust of banks.
H2: Integrity leads to improved consumer trust in the banking industry.
H3: Benevolence has a positive effect on perceived trustworthiness of banks.
H4: Structural Assurance positively influences consumer trust in banks.
H5: Service Recovery has a positive effect on consumer trust in banks.

4. Methodology

The study employed a cross-sectional survey design to investigate the influence of ESOSs on firm performance. The quantitative research design was used as it is regarded as an excellent way of determining conclusive results (Sahu, 2013). The sample for this study includes 240 participants. Simple random sampling was used to select respondents.

A structured questionnaire, which included closed ended and multiple choice questions, was used. Multiple choice questions were used in the questionnaire as they permit the respondent an option to choose a statement that almost closely describes their response to a statement (Mohan & Elangovan, 2006). The total number of questionnaires distributed to respondents was 240. The questionnaires were accompanied by a cover letter which detailed the purpose of the study as well as the instructions on how to respond to the questions. The overall response rate was 85% (n=204).

The first step in the data analysis process involved checking if all the questionnaires had captured complete correct information. The data were processed by using SPSS version 21. Frequency distributions and descriptive statistics were then performed to establish the descriptive responses. This was followed by correlations analyses which involved conducting the Spearman's rank correlation tests to determine relationships between independent and dependent variables - the association between trust drivers and consumer trust. A multiple regression model was then used to test to what extent independent variables impacted on consumer trust in banking.

To test for reliability the Cronbach's Alpha (α), which is a measure of internal consistency between measurement items, was computed. As shown in Table 4.3, the Cronbach's alpha values ranged from 0.734 to 0.934, thereby surpassing the minimum threshold of 0.6 recommended by Saunders (2009). The spearman's correlations coefficients were computed to assess convergent validity. The study reported significant positive correlations ranging from $r = 0.336$ to $r = 0.492$ (at $p < 0.01$) signifying the attainment of convergent validity. The construct correlation matrix is reported in Table 4.5. Regression analysis was used to assess predictive validity. Causality was shown by all independent variables, that is, financial benefits, employee participation, ESOS communication and percentage of shares with the dependent variable, firm performance, as shown in Table 1, thus demonstrating the attainment of predictive validity.

Table 1: Reliability test

VARIABLE	Cronbach's Alpha	No. of Items
Ability	.723	4
Integrity	.835	6
Benevolence	.750	5
Structural Assurance	.833	5
Service Recovery	.866	7
Trust	.899	7

5. Results

In terms of gender of respondents 40% were females and 60% were males. A majority of respondents (66%) were younger than 35 years, 24% were between 35 and 45 years, and 13% were 45 years and older. The employee category constituted approximately 33% of the total responses whereas the management category constituted approximately 68%. More management was selected more than the general employee as they are assumed to be more open-minded when it comes to researches that are to do with the firm, compared to general employees.

In order to ascertain the degree of association between constructs under investigation, the Pearson correlation was computed. The results are shown in Table 2.

Table 2: Correlations tests

	Ability	Integrity	Benevolence	Assurance	Service recovery	Trust
Ability	1					
Integrity	0.617**	1				
Benevolence	0.467**	0.627**	1			
Assurance	0.442**	0.513**	0.606**	1		
Service recovery	0.525**	0.562**	0.622**	0.606**	1	
Trust	0.542**	.599**	0.726	0.694	.717	1

** Significant at 2-tailed

To examine the relationship between the independent and dependent variables, regression analysis was conducted. Regression analysis was deemed to be an appropriate statistical approach due to the existence of significant associations amongst the variables. Prior to conducting regression analysis, key assumptions were verified. The adequacy of the sample size was assessed since regression analysis is susceptible to sample size. Tabachnnik and Fiddel (2007) proposed a sample size of $N > 50 + 8m$ (where m = number of independent variables) as adequate to perform multiple regression analysis. The sample size considered in the study is 161 respondents, which is above the minimum of 82 respondents when four independent variables are involved.

Multi-collinearity was assessed by inspecting the two common measures namely the tolerance value and its inverse – the variance inflation factor (VIF) for each independent variable. Multi-collinearity refers to a high degree of inter-correlation between constructs (Hair et al., 2009). The existence of multi-collinearity makes it difficult to determine the separate effects of individual variables and associated regression coefficients of the variables may be poorly estimated. The tolerance level is the 1 - R2 value when each of the independent variables is regressed on the other independent variables which essentially means that the tolerance value is the amount of an independent variable's predictive capability that is not predicted by the other independent variables in the equation (Hair et al., 2009). So for example, the tolerance value of 0.580 for ability implies that 42% (1-0.580) of ability can be estimated by the other 4 independent variables in our analysis. Low tolerance levels (and inversely high VIF) indicate high levels of multicollinearity. Hair et al. (2009) recommends that a very small tolerance value (0.10 and below) or a large VIF value (10 and above) indicates high collinearity.

As shown in table 3 below, the tolerance values for the independent variables range from 0.432 and 0.58, which is not less than .10; therefore, the multicollinearity assumption was not violated. This is also supported by the VIF values which are well below the cut-off of 10. These results are not surprising, given that the Pearson's correlation coefficients between the independent variables ranged from only 0.442 to 0.627. Table 3 shows the results of regression analysis.

Table 3: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model	B	Std. Error	Beta	T	Sig.	Tolerance	VIF
(Constant)	-.233	.166		-1.41	.161		
Ability	.092	.058	.083	1.600	.111	.580	1.726
Integrity	.104	.060	.101	1.736	.084	.457	2.187
Benevolence	.312	.066	.281	4.693	.000	.432	2.314
Structural Assurance	.270	.051	.286	5.328	.000	.537	1.862
Service Recovery	.269	.062	.254	4.358	.000	.456	2.195

Dependent Variable: TRUST, R2= 0.694; Adjusted R2=0.686; F=79.781; p=0.000

The regression table shows an adjusted R-squared value of 0.686 which implies that 68.6% of customers' trust in the bank is explained by the independent variables.

6. Discussion of the results

The first hypothesis (H1) positing that the bank's ability has a positive influence on consumer trust of banks was rejected because the Beta value (β=0.083) was not statistically significant (p>0.05). The research findings suggest that in an endeavour to improve consumer trust, the competency and the expertise of the banks is not a factor. This is inconsistent with a number of prior conceptual and empirical work by Ennew and Sekhon (2007), Colquitt, Scott and Le Pine (2007) and Buttner and Goritz (2008) which advocate for competence as a driver of trust in the financial sector. However, the finding gets support from the Edelman (2015) whose study presents results showing that excellence in operations or products and services do not build confidence but instead raises service expectations.

The second hypothesis (H2) predicted a positive influence the integrity of the bank has on consumer trust in banking industry. This hypothesis was disconfirmed (β = 0.101, p >0.000). Following the results of the regression analysis, integrity was found to be an unimportant factor to drive consumer trust. This is evident that integrity has a statistically insignificant impact on consumer trust at the 95% level of confidence. The finding is in tune with the findings of Johnson and Grayson (2005) who found that integrity (reputation) was only marginally linked to cognitive trust. Our finding is in direct contrast with the Edelman (2015) assertion that integrity was the most important factor of the five performance metrics on their trust index.

The third hypothesis (H3) predicted a positive relationship between benevolence and perceived trustworthiness of banks. The results of the study show that perceptions of being benevolent ($\beta = 0.281$; $p < 0.05$) have a significant and positive impact on consumer trust in the banking industry in Zimbabwe which lends support to H3. The results suggest that when banks are perceived as having a positive orientation towards stakeholders, including concern for their interests then consumer trust in the banking industry will improve. The finding is consistent with the studies of Roy, Eshghi and Shekha (2011), Colquitt, Scott and Le Pine (2007) and numerous other research works.

The fourth hypothesis (H4) predicted a positive predictive relationship between structural assurance and consumer trust in banks. The research results revealed that structural assurance ($\beta = 0.286$; $p < 0.05$) is a significant predictor of consumer trust in the banking industry in Zimbabwe. A positive beta signifies that structural assurance positively influences consumer trust and the relationship is statistically significant which is in line with H4. The results imply that when consumers are assured of the structural controls in the banking industry from regulation to supervision and monitoring to corporate governance, trust in the banking industry will improve. This finding is in tandem with numerous prior conceptual and empirical studies for example Gill, Flaschner and Shachar (2006), Yousfazai, Pallister and Foxall (2005) and Nienaber, Hofeditz and Searle (2015).

The results also indicated structural assurance to be the most important factor to drive consumer trust in the banking industry in Zimbabwe. This implies that banks, the RBZ as the regulator and policymakers in government have to prioritise structural measures to improve public confidence. This finding is consistent with the EY's (2014) Global Consumer Banking Survey 2014 which posit that financial stability and security procedures are the main drivers of trust in banking institutions. Further support comes from KPMG's (2013) Africa Banking Industry Customer Satisfaction Survey which reported that 11 out of 14 countries surveyed ranked financial stability as the most important reason for maintaining banking relationships which the researchers opine is a function of the global financial crisis and the reputed fragility of African banks.

The fifth hypothesis (H5) predicted that service recovery has a positive effect on consumer trust in banks. The results showed that service recovery ($\beta = 0.254$; $p < 0.05$) positively and significantly impacts on consumer trust in the banking industry in Zimbabwe which gave credence to H5. The results suggest that to improve consumer trust in the banking industry in Zimbabwe, there is an acute need for measures to address any trust violations that happened in the past and may happen in future. This finding is supported by the work of Gillespie and Dietz (2009) and Nakayachi and Watabe (2005).

7. Managerial implications

One of the strongest conclusions that come out of the study is that there is solid evidence that structural assurance, benevolence and the bank's recovery have a positive and statistically significant effect on customers' trust in the banks.

The results showed that structural assurance was the most significant determinant of the level of public confidence in banks. The second most important factor was benevolence and service recovery was third. As a result of this effect, it is also regarded reasonable to believe that structural assurance, benevolence and bank's recovery increase customers' trust in the banks. From the findings of this study, it is alleged that the customer's trust to do business with banks may depend mainly on the bank's ability to assure the customers, to be benevolent and to recover from the previous problems This study has some vital implications for bank management and policy in the financial industry in Zimbabwe and other developing countries. It signifies the need for the banking industry to exhibit high level of commitment to the improvement of service delivery. It also means that the banks should embark on recovery program so as to regain the lost customers and instill confidence among depositors. In other words, an intensive program of recovery and assuring customers about the improvement in the way customers' concerns are addressed. If the banking industry in Zimbabwe is to grow and be competitive, its managers should engage in activities that make sure that depositor's money is safely kept for reasons that once people are assured of protection to their money, they develop confidence in the banks (but keeping in mind that there are other ways of customer trust in the banks). When customers start to trust the banks this may lead to increased investment with banks and an abandonment of tendency of using informal means to save money. The findings demonstrate the need to assign time and efforts accordingly. Addressing the stability and soundness of the banking environment through structural assurances to the public should be given the urgent attention it deserves.

Although the study provides useful insights regarding customer confidence in the banking sector, it is not without limitations. Data were gathered from only a limited number of respondents and in Harare Province and this limits the generalizability of the results to other provinces in the country. Replication of this study is therefore warranted. A possible direction for future research is to conduct a similar study in other provinces in Zimbabwe or other countries in order to examine similarities and differences. The other limitation was that for such a study of national significance, the sample size is rather small. Future research could investigate the same phenomenon using a large sample size to ensure representativeness.

8. Conclusions

Despite the widespread attention given to the issue of low consumer trust in the banking industry both locally and globally, there is a surprising shortage of empirical studies on the determinants that result in an improvement of such trust in Zimbabwe in particular. The problem of low consumer trust in banking cannot be allowed to persist unabated given the significance of financial intermediation to the efforts of economic growth. All stakeholders need to actively seek ways and means to improve public confidence in the banking system in the country. The current study makes essential academic and practical contributions to the existing services marketing literature. The study gives credit to previous research on customer trust in Zimbabwe's banking sector, particularly on the determinants of customer trust in banks. Since customer trust is critical to the sustainability of banks, there are useful implications for academics, practitioners and policy makers.

On the academic side, a contribution in terms of the determinants of customer trust in banks from a context where customer trust is very low is made to the literature on customer loyalty management. The results of the study provide empirical evidence to the existing from developed economies that benevolence (β=0.281), structural assurance (β=0.286) and service recovery (β=0.254) are key determinants of customer trust in banks. The results affirm the importance of these factors but however the two factors namely the bank's ability and the bank's integrity do impact significantly to customer trust.

On the practitioners' side, the importance of benevolence, structural assurance and service recovery as predictors of customer trust in banks is confirmed. Bank owners, managers and policy makers could employ the conceptualised model and enhance customer trust by ensuring benevolence, structural assurance and by recovering from previous service failures. Increased customer trust in banks implies increased market share and better profits for the bank. The fact that the three factors (benevolence, structural assurance and service recovery) significantly influence customer trust in banks demonstrates that bank managers should make use of these factors as they augment each other in enhancing customer trust. The implication could be that a mismatch between the use of benevolence, structural assurance and service recovery may yield undesirable results. Therefore it could be imperative for bank management to adjust their benevolence, structural adjustments and service recovery in line with the bank's objectives of ensuring customer trust.

The current study therefore submits that bank practitioners, managers and policy makers can successfully ensure customer trust by exploiting their benevolence, structural assurance and service recovery. Ultimately customer trust is expected to attract more depositors and hence more revenue for the bank and this leads to the bank's profitability and survival in Zimbabwe's poor performing economy.

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"CONDEMNED TO HAPPINESS"... A COMPARISON IN TERMS OF TAX COMPLIANCE AND HAPPINESS WITHIN THE EUROPEAN UNION

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Abstract. Analysing the tax compliance is a difficult task, considered to have mainly an economic dimension. Happiness, an unconventional factor when explaining economic phenomena can bring however, interesting insights, as well. This paper focuses on the relationship between tax compliance and happiness in EU former communist countries and other 17 EU countries, before the last EU enlargement in 2013. The findings show that the countries with the highest degree of tax compliance have also a large ecological footprint. The happier EU countries are also the countries where tax compliance records the highest level and those that have a history of democratic systems.

JEL Classification: H260, I310

Keywords: tax compliance, happiness, life satisfaction, well-being, ecological footprint.

1. Introduction

"Hundreds of thousands of victims, shattered destinies, generations kept private from the chance of contact with the outside world, collapsed economy and shattered morale: this resumes in few words, the historical heritage left behind by the Romanian communism"[1].

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[1] Condemned to happiness – the Communist experiment from Romania – documentary film, narrated by Vladimir Tismăneanu, which examines the fate of all those to whom communism wanted to change their lives by force. The film talks about a strange form of happiness and it is very moving as the footage used came only from the official images of the Communist propaganda. The parades, speeches, smiles and thunderous applause we see form the image the communism wanted to build about itself and show to the outside public.

Currently, more than twenty years after the fall of the Iron Curtain, we are still trying to discover the historical truth, in order to benefit from political justice and morale. A Romanian essayist, Monica Lovinescu (Lovinescu, 2008) considered that the ethics of non-forgetting must become the ethics of the Romanian democracy. As a consequence, we feel that the ethics of memory, of history should be promoted all around the world as it could lead to the formation/strengthening of the democratic regimes. Years ago, Adam Smith (Smith, 1776) supported the idea according to which poor, unhappy people cannot create a flourishing society: "No society can surely be flourishing and happy, if the greater part of it is poor and miserable."

Throughout memory and history, by not-forgetting, we will analyse the level of non-compliance in connection with the level of happiness, in the former communist countries, throughout a new perspective, that of the economics of happiness. This is an approach combining techniques used by economists and those used by psychologists, in order to assess welfare. This non-conventional perspective addresses the role of non-income factors affecting the well-being of numerous individuals from all around the world. In order to explore happiness, psychologists used surveys of reported well-being, nowadays used by economists as well. Happiness economics focuses on analysing human behaviour, determined by the interaction between rational and non-rational influences (Graham, 2005).

Although economists' reservations kept them from viewing as reliable the interpersonal comparisons of well-being, psychologists considered it a natural endeavour to ask people how they feel, in order to study happiness (Blanchflower, 2008).

According to Blanchflower (2008), happiness can be defined as the degree to which an individual finds the existence, the quality of life, favourable. More so, the answers to life satisfaction and happiness questions correlate with: objective characteristics, the spouse's, the friends' or the family's assessments of a person's happiness, the blood pressure and heart rate, skin resistance measures, duration of authentic or Duchenne smile, the risk of coronary disease and prefrontal brain activity electroencephalogram measures.

In order to measure the happiness from the former communist countries in the EU, we will use the indicator of life satisfaction, as an indicator of happiness, because the answers to the questions to happiness and life satisfaction correlate strongly (Graham, 2005; Blanchflower, 2008).

In those former communist countries, studies register levels of subjective well-being and happiness, significantly lower than in Western Europe. Despite the fall of the Iron Curtain and all the freedom that came with it, the citizens of these countries feel lower levels of happiness. We want to explore whether their unhappiness/lower levels of life satisfaction can be a trigger or tax non-compliance, besides the traditional factors such as income level, job satisfaction, and economic growth.

We will focus on a comparison between the former communist countries members of the EU (Czech Republic, Estonia, Poland, Latvia, Lithuania, Hungary, Slovakia, Slovenia, Romania and Bulgaria) and the rest of the EU countries, in terms of tax compliance and happiness.

The paper has five parts. In the first part, we present the concept of happiness economics and that of tax compliance. Secondly, we describe the aim of this paper, which focuses on the influence of citizens' happiness on tax compliance, as a comparative study between the EU former communist countries and the other 17 EU countries. In order to study this relationship, we propose an index of tax compliance and an index of happiness for the EU countries.

Further on, we compute the main indicators, in order to rank the influence of factors within an econometric analysis. We then show the main results of the linear regression in terms of ranking the influence of the Happy Planet Index with its components (Ecological footprint, Well-being, Life expectancy) on the “Tax compliance index ease of paying taxes”. This analysis ends with the concluding remarks.

2. Happiness and tax compliance

Recently, happiness shifted into the focus of many researchers, as it can explain economic phenomena and indicators. The focus on happiness, understood as well-being is not a novelty since Americans mentioned the pursuit of happiness in their Declaration of Independence as an inalienable right - “We hold these truths to be self-evident that all men are created equal that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness” (Declaration of Independence, 1776).

Markusen (2003) perceives happiness as a complex, fuzzy concept due to its lack of clarity, hard to be tested or operationalized. Thus, this concept has a series of meanings. One of recent and exciting usages is the economic field.

Numerous economic issues depend on happiness. Therefore, a state’s economic growth should not be the only goal for the public authorities. They should pay careful attention to happiness, as well. According to Oswald (2006), happiness should be the target of future generations, besides economic growth. However, happiness is an individual aspect, beyond public authorities’ intervention, and maximizing life satisfaction or happiness should not be considered as the only objective.

Frey and Stutzer (2007) find several reasons for which economists grew interest on the happiness issue, which was treated until recently only from a psychological perspective. Primarily, happiness is appealing to economists due to economic policy, in the purpose of establishing a Pareto improvement, difficult to achieve otherwise, without an evaluation of the incurred social costs. Thus, the net effects of individual utilities must be evaluated. A quantitative analysis of the inter-conditioning factors (unemployment and inflation) is essential in designing efficient economic policies. Secondly, happiness’s relevance is proven by the fact that it affects the prescribed economic conditions, the governance quality and the importance of the social capital, individual welfare.

Eurobarometer studies gather information on happiness and its determinants. The econometric relation between the quantification of happiness and its determinants is portrayed throughout a happiness function. The Eurobarometer question used in the surveys is: ‘In all, are you satisfied, almost satisfied, not very satisfied or very unsatisfied by the life you have?’ A four point scale measures the life satisfaction. Given the answers to this question Frey and Stutzer (2007) find that there are three main factors that influence happiness: demographic and personality factors (age, education, gender, health, marital status, nationality); economic factors (unemployment, income and inflation), and political factors (citizens’ choice to be involved in politics, level of government decentralization).

Economic factors, namely income, influence happiness substantially as in average, wealthy nations tend to be happier than the poor ones, but this effect diminishes with wealth, according to Frey and Stutzer (2007). This statement contradicts Easterlin's (1974) prior assumptions, according to which, poor people are not necessarily happier than rich people, fact which can be extended also to the level of societies. This argument known as the Easterlin's paradox states that an increase of wealth does not always increase happiness.

Later studies find also that the level of wealth of a nation is explicable throughout the level of happiness, in general and more precisely, throughout the level of economic happiness. There is a logarithmic dependency between happiness, and the level of wealth since the same percent of GNP increase determines the same increase of happiness, both in wealthy and poor countries (Hagerty and Veenhoven, 2003). Ng and Ho (2006) confirm the connection between happiness and wealth. Therefore, if feeling worried and miserable, about their lives and their loved ones' lives, feeling endangered, with insecure jobs and an uncertain future, restricted freedoms and maltreated, with improper medical care, people tend to be less happy.

Norberg (2005) depicts the dependency between wealth and happiness referring to the East-European countries affected by the communist regime, where people were less happy than in the West and even unhappier than the citizens of countries as poor as theirs. In this paper, we will focus on demonstrating that these citizens of former communist countries tend be less happy and less tax compliant than the other members of the EU.

Frey and Stutzer (2007) agree that there is a linkage between income per capita and people's standard of subjective well-being. Thus, citizens of wealthy countries are in average happier than the ones in poorer countries, and more tax compliant. An unpredictable factor is that although income per capita has risen in the last decades, the average level of happiness maintained itself constant or has even dropped.

In conclusion, there are other factors, which affect happiness besides income, as countries with higher income per capita tend to have more democratic and stable systems than the poor ones. Another possible trigger of happiness is the democratic system from which the citizens benefit of. However, based on inter-nation analysis, Frey and Stutzer (2007) point out that according to the global available data, there is a correlation between income and happiness, but the effects of this relationship are weak and dropping. As a consequence, they suggest introducing more significant factors into the analysis of happiness, factors meant can explain the differences between national level well-fare.

A different study, performed by Kenny (1999) underlines the inverse relationship between income per capita and the level of well-fare, of happiness. Given this inverse relationship, satisfied people have higher incomes because they are more likely to work harder, to be more creative and resourceful, all these factors leading to higher incomes.

Happiness has risen, and the reason of this increase is relevant according to Inglehart, Foa, Peterson and Welzel (2008). These authors consider that certain societies are predisposed to feel happiness, more than others, especially the ones allowing people free choice in life options. Moreover, "economic factors have a strong influence on subjective well-being in low income countries". In ex-communist countries, such as Romania, the liberalization, which occurred in the last years, brought “economic collapse, rising happiness, but declining life satisfaction”. In former communist countries, the decline of subjective well-being was a triggering factor of the fall of the communist system.

According to World Values Survey (World Values Survey), the level of happiness is influenced by the economic development and it has increased from 1981 to 2007. However, a surprisingly substantial decline of the level of happiness among societies was recorded among the population of Russia and the former communist countries. Economic development, the democratization and the development of the tolerance level have contributed to this slow growth of happiness, as people have felt an increase of the freedom of choice as well. We want to complete this argument and state that the happiness of a nation is responsible also for the level of tax compliance.

Research on happiness, by Frey and Stutzer, (2007) finds also that: age affects happiness in terms of a U-shaped function. Young and older people are happier than middle-aged ones. The least happy are those whose age is between thirty and thirty-five years. Women are less happy than men. Couples with or without children are happier than singles. Higher educated people have higher levels of welfare. A precarious state of health can affect happiness.

Current life satisfaction level, but also from the past can affect proportionally tax compliance. Household income negatively affects tax compliance. For Frey and Stutzer (2007), the happiness and the utility are not the same, but the happiness can reflect people’s level of satisfaction and it can be used as a proxy for utility.

Happiness research adds new perspectives on the tax compliance issue. Until recently, the tax compliance issue has been analysed mostly from a narrow perspective, which could not provide relevant information on the taxpayer’s psycho – socio – behavioural profile, reason for which new lines of tax studies must appear. Therefore, we find that it is appealing to depict also happiness’s influences on taxpayers, in general, and on tax compliance, in particular.

There are several reasons why people decide to comply, and accordingly to these reasons a taxpayers’ behavioural profile can be built. Vogel (1974) considers that people comply from a variety of distinct reasons. In his work, he adapted the concepts introduced by Kelman, to the issue of tax compliance. Initially, Kelman (1965) proposed a tripartite typology of compliance:

- Compliant taxpayers pay their taxes, by obligation and fear of the punitive effects;
- Identification – the compliant taxpayers, who follow the beliefs, the social norms, and respect the behaviour of the others;
- Internalization – internalizing compliant taxpayers exhibits internal consistency between beliefs and behaviour.

Emotions play a decisive role in maintaining routines and rules, creating a certain stability by complying with justice, fairness and adequacy, reason for which they rule peoples’ lives. Thus, peoples’ behaviour is affected by many rules, factors, and by the distinct pattern of each taxpayer. The taxpayer at his turn is influenced by a number of different factors, besides the obvious ones, valid to a certain point.

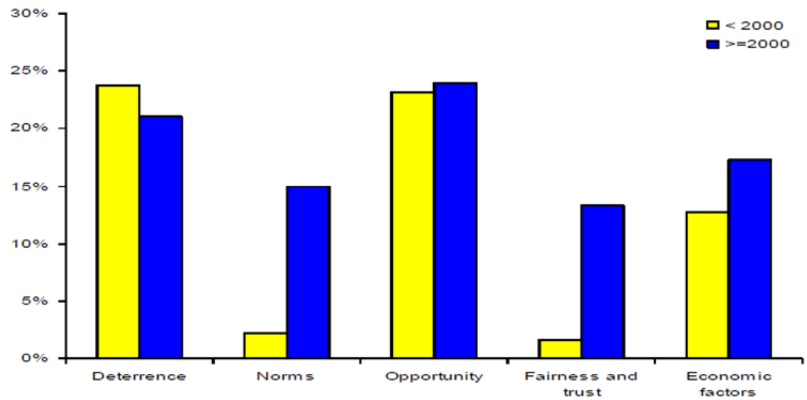
Until recently, tax compliance research seldom believed there is a link between economic factors that influence tax compliance and the taxpayer’s behaviour. The issue of tax compliance was influenced mainly by economic factors, which lead to economic growth and are automatically responsible for the improvement or worsening of tax compliance levels.

OECD (2010) classifies the factors and determinants of tax compliance behaviour into the following categories:

- Deterrence (e.g. increasing the number of tax audits, increase of penalties for tax noncompliance, levying a higher risk of being caught in case of tax laws violation, etc.).
- Personal and social norms;
- Opportunity for rigorous compliance (perceived compliance costs are low legislation is clear, clear and easy to be understand by taxpayers) and noncompliance (the ability to circumvent or tax evade);
- Fairness and trust in public authorities in general and tax authorities in particular, but also in other taxpayers;
- Economic factors, e.g. general economic factors, business factors, total tax rate, cost of compliance.

The scientific interest granted to the determinants and influencing factors of tax compliance is proven by several studies. One of them, which used the index Web of science, states that during 1990-2000, and in the period which followed, the Internet searches containing keywords that relate to factors and determinants of tax compliance looks like in the figure below.

Fig. 1 – Factors and determinants of tax compliance identified in Internet searches (OECD, 2010)



According to Figure 1, by 2000, the deterring factors and opportunities are the main determinants of tax compliance, included in the economic factors category. However, lately, the emphasis lies more on norms, fairness and trust, motivational or situational factors. Besides motivation strategies (based on rewards or punishments), social norms affect human behaviour.

They also affect the social groups, where individuals choose to enter into a social contract, and thus into a tax contract, meant to fund the social one. The effects of tax incentives on compliance are likely to be positive, improving collection, as opposed to sanctions. The motivational effect differentiates fiscal result. Thus, positive motivations will often have better effects than negative ones.

Therefore, in order to understand the global economic phenomena better, one must understand the social contexts and motivations of the people who made possible the occurrence of those events. Focusing on the behaviour of an individual with all its shades could lead to a better understanding of economic issues, well beyond the narrow understanding of the Homo Economicus.

There is nowadays, a 'hedonistic paradox', according to which, Homo Economicus, solely in search of personal happiness will not find it, unless one helps others, as there is a strong and positive correlation between tax morale and happiness. A study performed by Lubian and Zarri (2011) brought interesting contributions, in explaining the higher levels of tax compliance than the ones predicted by the standard theory, through tax morale: virtuous taxpayers record higher levels of happiness than less virtuous ones. In concentrating on the relationship between tax compliance and tax morale the same authors argue that the apparently paradoxical high level of compliance can be explained by the high degree of subjective well-being felt by virtuous people, who comply with their tax duties because they find the act of paying taxes rewarding (Lubian, Zarri, 2011).

In a study, Etzioni (2016) includes moral assessments into the concept of objective well-being. The people, who feel this objective well-being live in a society, which has a lower environmental footprint and they pay their taxes, due to their intrinsically motivation, which triggers positive hedonistic effects and justness.

The tax compliance, as an ethical endeavour, is explicable through the mere nature of moral, human being, who develop a moral preference for paying taxes, as they feel pleasure by reporting honest, otherwise feeling pained, if acting unethically (Gintis et al., 2008).

According to a study performed on German participants (Akay et al. 2012), the moral drive is not the only factor triggering happiness, but also the level of paid taxes: thus, paying more taxes determines German people to be happier. Paying higher taxes is a reason for German people to be more satisfied with their lives, due to the public goods and services made available to them. Altruism and shame would be also factors triggering compliance.

Tax compliance has different motivations altogether, and lately, economists started to investigate variables like the effect of life satisfaction on human behaviour (Stutzer, Frey, 2012). Given the various triggering factors of tax compliance, in this paper, we analyse the influence of happiness (through the life satisfaction indicator) on tax compliance in the former communist countries from the EU.

3. Data and methodology

Our paper focuses on the relationship between citizens' happiness and the tax compliance, as a comparative study between the EU former communist countries and the other 17 EU countries. In order to study this relationship, we need to use an index of tax compliance and an index of happiness for the EU countries.

A reliable index of tax compliance is difficult to build. Tax compliance is more stimulated by measures to facilitate tax payments rather than punitive measures, like fines or delay penalties (Kirchler et al. 2007). Therefore, we consider that an easier way to pay taxes is a strong stimulating factor of tax compliance, and we will use it as a combined indicator. An ease of paying taxes index is constructed by PwC, World

Bank and IFC and ranked by three main issues: the level of total tax rates, the number of fiscal payments and the number of hours per year necessary to pay taxes (PwC Paying Taxes Reports). We will build an index of tax compliance, with the help of the PwC's ranking of the EU countries, in terms of ease of paying taxes (PwC Paying Taxes Report, 2013), which covers the year 2011[2].

Unlike the tax compliance index, which does not yet exist - paradoxically perhaps, a happiness index already exists, and it was developed by NEF – the New Economics Foundation.

Given the strong correlation we found in the literature between happiness and life satisfaction, we chose the Happy Planet Index, as an index of happiness. In the opinion of its authors, The Happy Planet Index (HPI) is a measure of progress, of sustainable well-being for all, and it shows the nations efforts in achieving sustainable, long and happy lives. The Happy Planet Index is composed of world data on experienced well-being, life expectancy, and Ecological Footprint. This index shows the countries' efficiency in producing the conditions, which enable their inhabitants to lead a long, happy life, and also maintain the conditions for future generations, according to the following formula:

$$HPI \approx \frac{Experienced\ well\_being \times Life\ expectancy}{Ecological\ Footprint} \quad (1)$$

Practically, the HPI measures efficiency, calculating the number of Happy Life Years (life expectancy adjusted for experienced well-being) achieved per unit of resource used.

The research methodology consists of grouping the EU countries according to their position in the proposed 'Tax compliance index - ease of paying taxes' together with the Happy Planet Index with its components: experienced well-being, life expectancy, and Ecological Footprint. Based on this grouping, we will analyse the positioning of the ten EU former communist countries compared to the other EU 17 countries. We built the grouping of the EU countries on the basis of a normalization of values for each index and component of the HPI, according to the following relation:

$$z_i = \frac{x_i - \bar{x}}{\sigma} \quad (2)$$

Where: z_i - are the normalized values;

x_i - are the values of indexes and HPI components for each country;

$\bar{x}$ - is the EU 27 average of indexes and HPI components;

σ - is the EU 27 standard deviation of indexes and HPI components.

Also, the grouping and ranking of the EU countries is based on identifying the correlations between the normalized values of the Happy Planet Index with its components and the normalized values of the *Tax compliance index – ease of paying taxes*, by using a cross countries linear regression. In the following figures, the countries coloured in blue are the EU 17 countries and the countries coloured in red are the ten former communist EU countries.

[2] We used the 2011 PWC report, as the newest available HPI report dates from 2012.

4. Findings

The *Correlation Coefficient*, the *Significance F* of the Fisher test and the *Regression Coefficients* of the linear function are the main indicators, used to rank the influence of factors within the econometric analysis. The main results of the linear regression in terms of ranking the influence of the Happy Planet Index with its components on *Tax compliance index - ease of paying taxes* are presented in the Table 1.

As it can be seen from Table 1, the strongest correlation between the *Tax compliance index - ease of paying taxes* and a component of the Happy Planet Index is registered, in the case of Ecological Footprint. The Ecological Footprint developed by the Global Footprint Network (Ewing et al, 2010), consists of the land needed to sustain the consumption patterns of a country, the renewable resources used by people, the areas occupied by infrastructure, and required to absorb CO_2 emissions, 'embedded' land and emissions from imports. Thus, a high Ecological Footprint means high energy consumption and high carbon emissions, elements which are characteristic for developed countries. Many such countries live beyond their own bio capacity and are consistently depending on others, for their resources. On the contrary, a low Ecological Footprint means countries with levels of consume, supportable by their own bio capacity.

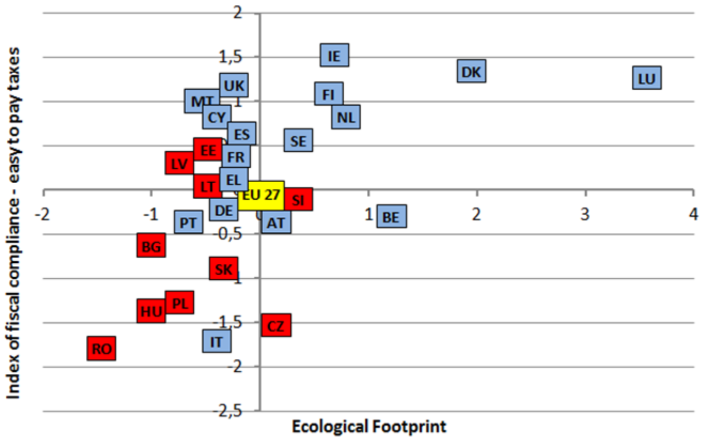
Table 1 - The main results of the linear regression

No.	Happy Planet Index and components	Econometric parameters	Tax compliance index - ease of paying taxes
1.	Ecological Footprint	*Correlation Coef.*	*0.548*
		Significance F	*0.0030*
		Regression Coef.	*0.5489*
2.	Well-being	*Correlation Coef.*	*0.531*
		Significance F	*0.0043*
		Regression Coef.	*0.5311*
3.	Life expectancy	*Correlation Coef.*	*0.412*
		Significance F	*0.0323*
		Regression Coef.	*0.4127*
4.	Happy Planet Index	*Correlation Coef.*	*-0.002*
		Significance F	*0.9892*
		Regression Coef.	*-0.0027*

This result is consistent with the study of Etzioni (2016), which found people to experience a higher level of objective well-being in societies with lower environmental footprints, where they pay their taxes, due to moral reasons. The fact that between the Happy Planet Index and *Tax compliance index - ease of paying taxes* there is practically no correlation can be explained, due to the contradictory action of the three components building the Happy Planet Index. However, we continued our analysis given the fact that the two components building the numerator of the Happy Planet Index, namely, Well-being and Life Expectancy, the ones depicting Happy Life Years, show a strong correlation between the quality of life and tax compliance, confirming our initial assumptions, that of happiness triggering tax compliance.

The grouping of EU countries regarding the normalized values of the Ecological Footprint and normalized values of *Tax compliance index - ease of paying taxes* is presented in the Figure 2.

Fig. 2 - Grouping of EU countries regarding Ecological Footprint and Tax compliance index – ease of paying taxes



As it can be observed, EU 27 is positioned at the origin of the graph, representing the average value of normalized values (relation 2) for EU countries, for both the Tax compliance Index and the Ecological Footprint. As shown previously, countries in blue are the EU 17 countries and the countries in red, the ten former communist EU countries.

In the upper left quadrant we find the countries with the best situation: high level of tax compliance and small ecological footprint. This category includes five countries from EU 17 (the UK, Malta, Cyprus, Spain, France and Greece) and three former communist countries (only the Baltic States Estonia, Latvia and Lithuania). We can see that only eight of the EU 27 countries are included in the best category. Also notable is the fact that the countries in this category are closely grouped, with respect to the Ecological Footprint.

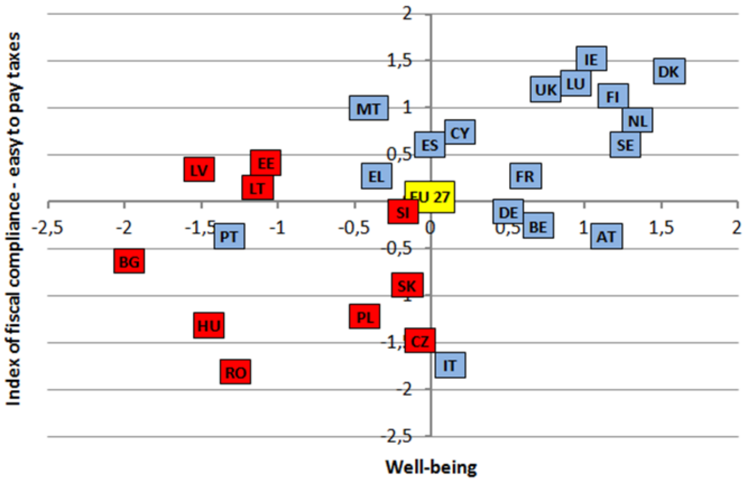
In the upper right quadrant we detect the countries with high levels of tax compliance, but with large ecological footprint. In this category, we have only six EU 17 countries (Ireland, Denmark, Luxembourg, Finland, Netherlands and Sweden), which are highly dispersed. We note the extreme position of Luxembourg, followed by Denmark, countries which have an enormous environmental footprint compared to the EU average, fact which raises the issue of the long term sustainability of these countries. It seems that developed countries having a small geographic area face significant issues regarding the ecological footprint.

In the lower left quadrant we discover the countries with low levels of tax compliance – ease of paying taxes below the EU 27, and with a small ecological footprint. This quadrant includes three countries from EU 17 (Germany, Portugal, and Italy) and half of former communist countries (Bulgaria, Slovakia, Poland, Hungary and Romania). The position of Germany is close to the EU 27 average. We may see an extremely critical position of Italy in terms of tax compliance (the last among EU 17 countries and one of the last among EU 27, given by the high percent of total taxes of 68.3% reported to the 42.8% average of EU - PwC Paying Taxes Report, 2013). It is followed only by Romania, which has the lowest level of tax compliance from the EU given by the large number of 41 payments per year reported to the 12.8 average payments in the EU (PwC Paying Taxes Report, 2013). However, Romania compensates the last position in the tax compliance ranking with the best position in the EU 27 regarding the ecological footprint.

The worst situation in terms of tax compliance and ecological footprint have the countries situated in the lower right quadrant, countries which have low levels of tax compliance and ecological footprint compared to the EU average. This category includes only four countries, two from EU 17 (Belgium and Austria) and two former communist countries (Slovenia and Czech Republic). It should be noted, however, that Slovenia and Austria are remarkably close to the EU average; therefore, their situation is not as precarious. Issues for this category occur especially in Belgium, country, which has a large ecological footprint, and for the Czech Republic with low levels of tax compliance.

Furthermore, the grouping of EU countries regarding the normalized values of the Well-being factor and normalized values of the *Tax compliance index – ease of paying taxes* is presented in the Figure 3.

Fig. 3 - Grouping of EU countries regarding Well-being factor and Tax compliance index – ease of paying taxes



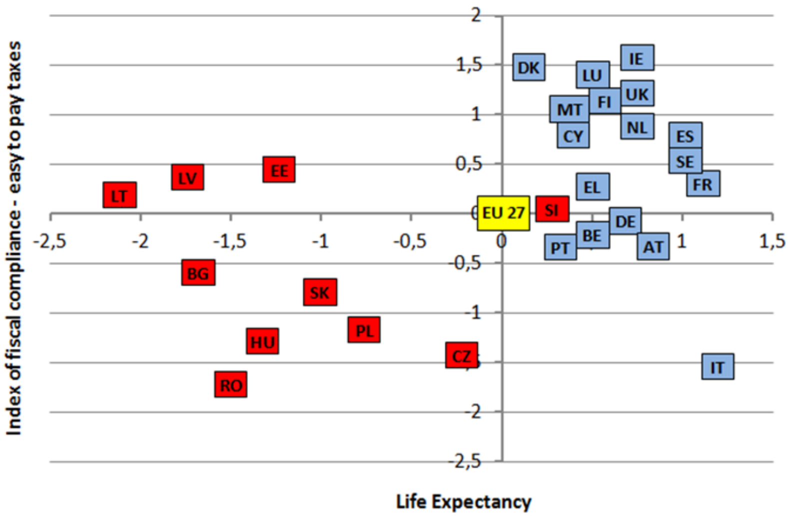
We can see from the beginning that the analysed countries are more clearly separated within the grouping in Figure 3 compared to Figure 2. Most of the EU17 countries are positioned in the upper right quadrant (the best category with high values for both tax compliance and well-being), while most of the former communist countries are positioned in the lower left quadrant (the worst category with low values for both the well-being factor and the tax compliance one). The best positioning of the well-being factor is for Denmark, and the worst positioning is for Bulgaria.

However, there are some exceptions, which can be found also in the present analysis. In the lower right quadrant are countries that although have a high well-being factor, have a low level of tax compliance, situated beneath the EU average (Italy). Regarding the former communist countries, we found a superior positioning of the Baltic countries whereas tax compliance is concerned, even if the well-being factor is below the EU average.

We noticed that all former communist countries have lower levels of the well-being factor, situated under the EU average. They are accompanied by several EU17 countries like Greece, Malta and Portugal. A number of countries (Spain, Slovenia, Slovakia, Czech Republic and Italy) have values of the Well-being factor close to the average of the EU27 well-being factor.

The grouping of the EU countries regarding the normalized values of Life expectancy and the normalized values of the *Tax compliance index – ease of paying taxes* is presented in the Figure 4.

Fig. 4 - Grouping of EU countries regarding Life Expectancy and Tax compliance index - ease of paying taxes

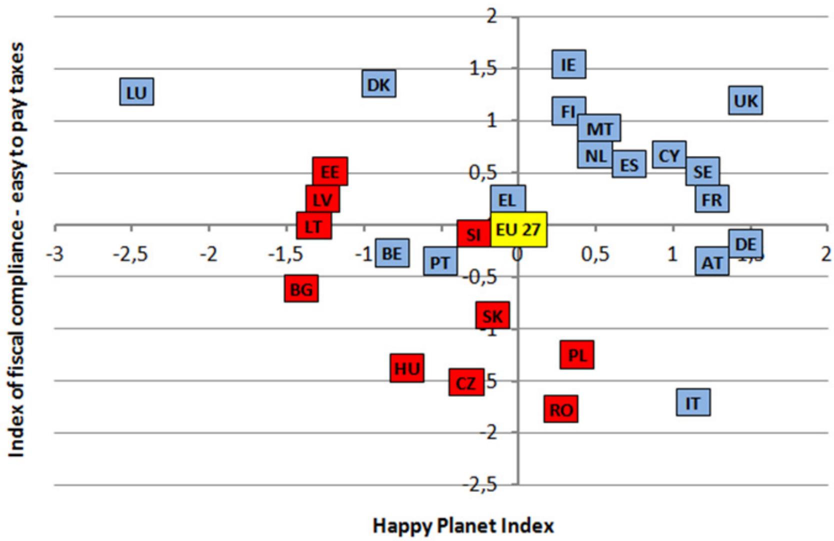


We can observe that, in Figure 4, the Life Expectancy component made the clearest separation between the two groups of countries that compose the EU 27. From the former communist countries, only Slovenia joins EU 17 countries from the upper right quadrant, to a minimum level, however. To the contrary, no EU 17 country has lower levels of Life Expectancy below the EU 27 Life Expectancy average. This chart is expressing in the best manner the significant gap between EU 17 countries and former communist countries, which joined more recently the EU, in terms of quality of life.

We note the case of Italy, which is the country with the highest level of Life Expectancy (81.9 years) from the EU. However, the level of tax compliance is one of the lowest in the EU, just above Romania. The last country from the Life Expectancy ranking is Lithuania with 72.2 years, well below the EU 27 average (78.4 years).

Finally, the grouping of EU countries regarding the normalized values of Happy Planet Index and the normalized values of the *Tax compliance index - ease of paying taxes* is presented below in Figure 5.

Fig. 5 Grouping of EU countries regarding Happy Planet Index and Tax compliance index - ease of paying taxes



As it is shown in the Figure 5 and the main results of the linear regression from Table 1, practically there is no correlation between the Happy Planet Index and the *Tax compliance index - ease of paying taxes*. The EU countries are spread out all over the graph. The explanation comes from how the Happy Planet Index is built (see relation 1). The two components of the indicator quality of life (Well-being and Life Expectancy) show a strong correlation between quality of life and tax compliance. Citizens from developed countries who have a decent quality of life (in our case, EU 17) find it easier to pay taxes than citizens of less developed countries with poor quality of life (in our case, former communist countries).

In contrast, the ecological footprint is a factor that favours less developed countries, which usually have a small ecological footprint. The ecological footprint is a denominator in the formula for calculating the ratio of the Happy Planet Index, and the negative impact of the environmental footprint compensates the positive effect of the life quality indicators. The result is a weak correlation between the Happy Planet Index and the degree of tax compliance.

Although there is no correlation between the two indexes, however, an analysis is required on the grouping of EU countries in those four quadrants. According to the Happy Planet Index, fourteen countries place themselves above the EU 27 average. From these fourteen countries, most of them (twelve countries) are from the EU 17, and only two of them are from the former communist countries. These two former communist countries, Romania and Poland, are found on the right side, mainly due to the remarkably small ecological footprint. Thirteen countries are below the EU 27 average, out of which, the most of them (8 countries) are from the former communist countries and only five are from the EU 17. Three countries from EU 17 (Luxembourg, Denmark and Belgium) are positioned at the left of the EU 27 average because of their significant ecological footprint.

5. Conclusions

In conclusion, we found that in terms of grouping the countries according to the Ecological Footprint and the *Tax compliance index - ease of paying taxes*, the countries with the highest degree of tax compliance have also a large ecological footprint. This shows that the ecological footprint is a significant issue in developed countries, as a sign of companies' huge impact on the environment. Especially, developed countries having a small geographic area as Luxembourg, Denmark and Belgium have significant issues regarding the ecological footprint. We emphasize that Romania is the country with the lowest level of tax compliance, and, in the same time, with the smallest ecological footprint in the EU.

Well-being and Life Expectancy are the factors that clearly separate EU17 countries from the former communist countries. Practically, a single small former communist country (Slovenia) has a life quality, situated little above the EU27 average, while, in other EU countries it is below the EU27 average. Several EU17 countries are below the EU 27 average, e.g. Greece, Malta and Portugal, regarding the Well-being factor. In terms of Life expectancy, however, there is no EU17 country below the EU27 average. We encounter the best positioning regarding life quality for Denmark (regarding the Well-being factor) and Italy (regarding the Life Expectancy), and the worst for Bulgaria (regarding the Well-being factor) and Lithuania (regarding the Life Expectancy). Most countries with high life quality factors also have a high level of tax compliance, fact which shows a significant correlation between these variables.

Although between the Happy Planet Index and *Tax compliance index - ease of paying taxes* there is practically no correlation, the fact can be explained due to the contradictory action of the three components building the Happy Planet Index. However, the two components building the numerator of the Happy Planet Index, namely, Well-being and Life Expectancy, the ones depicting Happy Life Years, show a strong correlation between the quality of life and tax compliance, confirming our initial assumptions. Moreover, if we are to analyse the IZA study (Akay et al. 2012), happiness and tax compliance are interconnected, influencing one another. At the level of the German nation, the more taxes the happier they are, given the prospect of quality public goods and services available to them.

Obviously, there is a higher quality of life in well developed countries, as opposed to the quality of life from less developed countries. In contrast, the ecological footprint is the factor that disadvantages the developed countries, which usually have a significant ecological footprint, due to the land infrastructure occupancy, and the area required to absorb CO_2 emissions. Being a denominator in the formula calculating the ratio of Happy Planet Index, the negative impact of ecological footprint compensates the positive effect of life quality indicators, and, finally, there is no correlation between indexes.

Therefore, further on, we intend to insist on this correlation between the quality of life and tax compliance because the level of economic gains influences the lifestyle and the level of well-being (Inglehart, 1997). From our analysis, we saw that there is a strong correlation between the quality of life, measured throughout Well-being and Life Expectancy, and tax compliance. In conclusion, the quality of life is a triggering factor of tax compliance. Nations, with higher levels of well-being are also the nations inclined to pay their taxes. As a consequence, it is no surprise that the analysed former communist countries have a precarious quality of life, low economic gains, and low levels of tax compliance, since there is not even the prospect of quality pubic goods and services here.

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LIFE SATISFACTION BY DEMOGRAPHY IN LOW INCOME RESIDENTIAL AREAS: EVIDENCE FROM SOUTH AFRICA

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Abstract: Life satisfaction within various South African contexts remains an important subject for both management and research practitioners. This importance emanates from the view that life satisfaction is an enduring indicator of both social and economic stability in any given country. This study investigated the life satisfaction of the residents of three low income residential areas in South Africa. The study was conducted by means of a quantitative research design using the cross sectional survey approach. The sample was composed of 298 individuals drawn from Sebokeng, 285 individuals drawn from Sharpville and 402 individuals from Sicelo townships, which are all located in Southern Gauteng. The results of the study showed low levels of life satisfaction in Sebokeng and Sicelo, with respondents from Sharpville showing marginally higher levels of life satisfaction. Regression analyses revealed that age, employment status and educational level predicted life satisfaction while marital status and gender did not predict life satisfaction. The study provides a comparative overview of the current trends in life satisfaction amongst township residents who are an important cohort of society in developing economies such as South Africa. Using this information, government may initiate appropriate measures to bolster the life satisfaction of low income groups.

JEL Classification: I30

Keywords: Life satisfaction, low income group, Sharpville, Sebokeng, Sicelo

1. Introduction

The development of South Africa since1994 has brought a number of socio-economic challenges that continue to bedevil the country. Typical examples of such challenges include rising unemployment, service delivery backlogs, race relations, social welfare and inequality, amongst others (Ebrahim, Botha and Snowball, 2013). Low life satisfaction levels amongst residents of townships have emerged as a consequence of the socio-economic inconsistencies facing South Africa (Bhorat, 2007). Although the actual causes of low life satisfaction levels in South Africa may

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be debatable, it is difficult to unbundle the issue from social and economic factors (IMF, 2009). This state of affairs has brought with it a constellation of countrywide headaches that include intensified poverty, an escalating crime rate, political instability and entrenched service delivery protests (Burger and von Fintel, 2009). Consequently, there has been an increased realisation that South Africa has problems of significant proportions, which require immediate solutions.

In response to the rising socio-economic ills facing the country, the South African government responded by initiating a number of interventions such as regulatory reforms, social welfare grants, working with other countries to build an integrated African economy, private public partnerships, as well as policy initiatives such as the Industrial Action Plan and, more recently, the National Development Plan (Burger, Van der Berg and Von Fintel, 2013). These initiatives were meant to address the social and economic challenges by stimulating economic activities in order to boost the standard of living in the country (Manuel, 2013). Unfortunately, the programmes have largely yielded unimpressive results, as demonstrated by the negative statistics. More cutting edge interventions are therefore needed to combat the challenge of low life satisfaction levels and to stimulate economic prosperity in the rainbow nation.

Life satisfaction within various South African contexts remains a persistent topic for researchers, and this may be attributed to the importance of life satisfaction in the socio-economic development of any country. As mentioned by Botha and Booysen (2012), high levels of life satisfaction indicate the prevalence of prosperity in various domains of life, whereas low satisfaction with life gives a signal of instability within the same domains. Owing to its importance, the body of literature focusing on life satisfaction in the context of South Africa continues to grow (e.g. Bookwalter, Fitch-Fleischmann and Dalenberg, 2011; Ebrahim, Botha and Snowball, 2013; Schatz, Gómez-Olivé, Ralston, Menken and Tollman, 2012). Despite this growth, there remains several research gaps in the subject, particularly on recent studies that concentrate on investigating the life satisfaction of low-income groups in South Africa. Furthermore, there is a dearth of studies that compare the life satisfaction of people living within several geographic contexts in South Africa. These research gaps presented a fundamental impetus for this study. This study was aimed at the purpose of investigating the life satisfaction of low income groups in South Africa. Unlike previous studies whose scope was limited to individuals in one geographic area, this study directed attention to three low income residential areas, which are Sebokeng, Sharpville and Sicelo. This created room for empirical comparisons between these geographic locations.

2. Literature review

2.1. Life satisfaction

Life satisfaction may be perceived as the degree to which people find the lives they lead as being rich, meaningful and full of a generally high quality (Ryan and Deci, 2001). The concept of life satisfaction has been associated with either an individual's state of mind or a life that goes well for the person leading it (Larsen and Prizmic, 2008). This implies that life satisfaction concerns what benefits a person, is good for him/her, makes that person better off, serves his/her interests, or is desirable for him/her. An individual who has high life satisfaction is generally expected to be faring well, doing well, fortunate, or in an enviable condition (Nettle, 2005). Some researchers distinguish between the terms ‘happiness’, ‘subjective well-being’ and” life satisfaction”, but it is generally considered proper to use these terms interchangeably (Posel and Casale, 2011). In terms of its measurement, traditional economic indicators such as gross domestic product have long been employed as indicators of life satisfaction. However, there is growing consensus that such measures are inappropriate for assessing individual levels of well-being and progress, since important non-monetary measures are not taken into account (Natoli and Zuhair, 2011). Based on these assertions, combinations of socio-economic indicators, which combine both monetary and non-monetary measures, have been adopted as indicators of life satisfaction in development economics research (Tsai, 2011).

2.2. Antecedents to life satisfaction

There are various factors that serve as antecedents to life satisfaction. Antecedents to life satisfaction include attachment or love (Ali and Chamorro-Premuzic, 2010; Koohsar and Bonab, 2011), character (Porubanova-Norquist, 2012), emotional intelligence (Extremera and Ferna´ndez-Berrocal, 2005); physical activity (Bastug and Duman, 2010), self-esteem (Abolghasemi and Varaniyab, 2010) and resilience (McKnight *et al.*, 2002). Some studies (Hinks and Gruen, 2007; Møller and Radloff, 2010) found that employed people have a higher life satisfaction than unemployed people. In terms of age, a number of scholars (Blanchflower and Oswald, 2009; Ferrer-i-Carbonell and Gowdy, 2007) found that elderly people experience higher life satisfaction than younger people. With reference to education, a ground-breaking study conducted by life satisfaction research gurus Feldman (2010), reported that those with higher education tend to have higher life satisfaction. It has also been observed that married people are more satisfied with life than those who are divorced, separated, single or widowed (Graham, 2014).

There has been extensive debate on the influence of gender on life satisfaction. This controversy is exemplified by the contradictory results of some previous studies. For instance, a study conducted by Kapteyn, Smith and van Soest, (2009) reported that women have higher life satisfaction than men. However, in a study by Stevenson and Wolfers (2009), it emerged that men had higher life satisfaction than women. Still another study conducted by Mahadea and Rawat (2008) concluded that gender does not influence life satisfaction amongst South Africans. It is an important supposition then that there exists no universal unanimity as to the influence of gender on life satisfaction.

Health is considered to be amongst the most significant drivers of life satisfaction, with individuals in a good state of health generally experiencing higher levels of life satisfaction than those with poor health (Graham, 2014). With regard to religion, it has been noted that in South Africa, there is a positive interplay between religion and life satisfaction, with those individuals who attach value to religion reporting higher life satisfaction levels than those who are not religious (Rule, 2007). In addition, life satisfaction is influenced by an individual’s geographic area of residence. For instance, the findings of a study conducted by Graham and Felton (2006) reveal that rural dwellers have higher levels of life satisfaction than urban dwellers. It is also reported that people who earn higher per-capita income experience higher levels of life satisfaction than low income earners (Posel and Casale, 2011; Powdthavee, 2003). It appears then that various factors play a critical role in shaping the life satisfaction of people in different spheres and stages of life.

2.3. Outcomes of life satisfaction

The outcomes of high life satisfaction seem to be more constructive than detrimental. Among the youths, a study by Lippman *et al.* (2012) found that life satisfaction is negatively related to outcomes such as substance use, depression, involvement in violence, and delinquency and it is positively related to good grades at school. A research by Archontaki *et al.* (2012) found that measures of life satisfaction such as optimism and positive affect predict long-term health status and mortality. Aknin and Norton (2009) provide evidence that interventions that are successful in improving life satisfaction can have beneficial effects on various aspects of health, with examples including meditation and relaxation training which have both been found to increase positive effects and to reduce blood pressure. Diener (2008) concluded that people with higher levels of life satisfaction live up to 10 years longer than those with poor life satisfaction. Koivumaa-Honkanen *et al.* (2004) further report that people with high life satisfaction experience less injury, work disability, as well as reduced male disease mortality and injury mortality. These insights add credence to the positive effect of life satisfaction on health and mortality.

In the workplace, the benefits of life satisfaction amongst employees are immense. Rehman *et al.* (2010) highlight that employees with higher life satisfaction correspondingly have greater resilience to stress, exhibit higher levels of energy, focus, stamina, performance and productivity. Saraceno *et al.* (2005) add that satisfied employees are more interested, motivated and engaged with work. Jones *et al.* (2007) found deeper levels of job satisfaction and fulfilment amongst employees who had higher life satisfaction. Chou and Robert (2008) further observed that more positive working relationships as demonstrated by feelings of camaraderie were more pronounced within circles of employees who were satisfied with life. Yin-Fah *et al.* (2010) found that life satisfaction positively correlated with employee morale, which facilitates better retention of staff. Warsi *et al.* (2009) found that life satisfaction predicted lower absence rates, reduced intention to quit and employee turnover, which results in significant cost savings for the organisation. It has also been noted by DeFour and Brown (2006) that employees who feel well and happy tend to make fewer workplace injury claims. Tangen (2005) further states that having satisfied employees, stimulates a harmonious and constructive industrial relations climate within the organisation. Therefore, having employees who are satisfied with their lives results in a greater return on the organisation's staffing investment.

3. Research Method

3.1. Delimitation

In terms of its geo-spatial context, this research study was conducted in Southern Gauteng, with its foci being directed to individuals who are based in three townships, specifically Sebokeng, Sicelo and Sharpville, which are all located within the Sedibeng District Municipality. The municipality has an estimated population of nearly eight million inhabitants, its most widely spoken language is Sesotho and its administrative capital is the town of Vereeniging (Statistics South Africa, 2014).

3.2. Design

The cross-sectional survey approach (Terre Blanche, Durrheim and Painter, 2006) was used in the empirical portion of the study. The cross sectional survey approach was deemed to be appropriate for the study, because it easily facilitates the collection of data from large groups of respondents, is inclusive in the number of variables that can be studied, requires minimum investment to develop and administer, and is relatively easy for making generalisations (Zikmund, Babin, Carr and Griifin, 2009).

3.3. Sample

For the purpose of this study the population was taken to be made up of the collective residents of the three selected low income residential townships in South Africa. These results show that the estimated populations of Sebokeng, Sicelo and Sharpville are 218515 people (or 61000 households), 15200 (or 4000 households) and 37 599 people (or 11000 households), respectively (Statistics South Africa, 2014). This totals to an estimated collective population of 271 314 (or 76 000 households) in the three townships. In this study the non-probability sampling approach using the convenience sampling techniques was adopted in order to select the sampling elements from the target population. Convenience sampling is a non-probability sampling technique in which subjects are selected because of their convenient accessibility and proximity to the researcher (Quinlan, 2011). Use of the convenience sampling technique was appropriate since there was no sample frame or list from which the names and exact locations of the respondents could be obtained. The resultant sample sizes after collection of the questionnaires were N=402 respondents for Sicelo, N=298 respondents for Sharpville and N=285 respondents for Sebokeng. The demographic characteristics of respondents drawn from the three townships are stated in Table 1.

Table 1: Demographic characteristics of respondents

Variable	Categories	Sebokeng		Sharpville		Sicelo	
		n	%	n	%	n	%
Marital status	Married	84	28.2	101	35.4	138	34.3
	Not married	214	71.8	184	64.6	264	65.7
Totals		**298**	**100**	**285**	**100**	**402**	**100**
Age group	18-35	121	40.4	100	35.2	220	54.7
	36-50	134	45.0	146	51.4	118	29.3
	51+	43	14.6	69	13.4	64	16
Totals		**298**	**100**	**285**	**100**	**402**	**100**
Gender	Male	165	55.4	146	51.2	228	56.6
	Female	133	44.6	139	48.8	174	43.4
Totals		**298**	**100**	**285**	**100**	**402**	**100**
Employment status	Employed	183	61.3	150	52.5	199	49.6
	Unemployed	115	38.7	135	47.5	203	50.4
Totals		**298**	**100**	**285**	**100**	**402**	**100**
Educational Level	No formal education	26	8.7	26	9.1	38	9.5
	High School	133	44.6	128	44.9	178	44.3
	Post-high school	139	46.6	131	46.0	186	46.3
Totals		**298**	**100**	**285**	**100**	**402**	**100**

In Sebokeng, nearly 72% (n=214) of the respondents were unmarried, whereas in Sharpville 65% (n=184) were not married and in Sicelo 66% (n=264) were unmarried. With reference to age groups, in Sebokeng the highest number of respondents (45%; n=134) were in the 36 to 50 years age group. An analogous trend was observed in Sharpville where 51% (n=146) of the respondents were in the 36 to 50 years age group. A different pattern was observed in Sicelo, where the majority of respondents (55%; n=220) were in the 18 to 35 age group. In addition, there were more male respondents than females in all three locations (55%; n=165 for Sebokeng, 51%; n=146 for Sharpville, 57%; n=228 for Sicelo). In terms of employment status, a majority of the respondents in Sebokeng (61%; n=183) and Sharpville (53%; n= 150) were employed. However, there were almost equal numbers of employed and unemployed respondents (50%; n=402) in Sicelo. With regard to educational level, in Sebokeng, most of the respondents (47%; n=139) were in possession of a post-high school qualification. In Sharpville nearly 46% (n=131) of the respondents were in possession of a post-high school qualification while in Sicelo, post-high school qualification holders were the highest number amongst respondents (46%; n=186).

3.4. Instrumentation and Data Collection

Data were collected using the five item validated Satisfaction with Life Scale **(**Diener, Emmons, Larsen and Griffin, 1985**).** The scale is composed of the following five items:

i. In most ways my life is close to my ideal.
ii. The conditions of my life are excellent.
iii. I am satisfied with my life.
iv. So far I have got the important things I want in life.
v. If I could live my life over, I would change almost nothing.

Response options on the Satisfaction with Life Scale were configured in a 4-point, forced-choice format Likert Scale, where the neutral/middle option of "neither agree nor disagree" was unavailable to respondents. Reliability for the Satisfaction with Life Scale as measured using the Cronbach's Alpha Estimate of Reliability was 0.873, which surpasses the minimum threshold of 0.7 recommended by scholars that include Bonnet (2010), Cronbach, Shavelson and Richard (2004) and Eisinga, Te-Grotenhuis and Pelzer (2013), amongst others.

After developing the questionnaire, 500 copies were distributed in each of the three townships in November 2014 to the conveniently selected sample of respondents. The researcher administered the questionnaires in person with the assistance of a trained research assistants who are students at a traditional university located in Southern Gauteng Province, South Africa. To explain the aim of the study, a cover letter was attached to the questionnaire. Also, respondents were requested to sign an informed consent form before participating in the study.

3.5. Statistical Analysis

The collected questionnaires were screened before the data was captured on a Microsoft Excel computer package. The Excel document was then imported into the Statistical Packages for the Social Sciences (SPSS Version 23.0) where it was coded in preparation for data analysis. Thereafter, descriptive statistics were used to analyse the captured data.

4. Research Results

This section was reserved for the analysis of the life satisfaction levels of people in Sebokeng, Sharpville and Sicelo. This procedure was in line with the aim of the study, which is to investigate the life satisfaction of residents in low income residential areas in South Africa. In this section, responses of participants to the five individual items of the Life Satisfaction Scale are analysed, with the results considered to be showcasing the levels of life satisfaction in each township.

4.1. Levels of life Satisfaction in Sebokeng, Sharpville and Sicelo

Table 2 reports on the summarised results for life satisfaction in Sebokeng, Sharpville and Sicelo. In the Table, only two categories (dissatisfied vs satisfied) are recognised for the five items in the Satisfaction with Life Questionnaire. To create these two categories, all responses coded as 1 and 2 (strongly disagree and disagree) on the Likert scale were categorised under 'dissatisfied' whereas all responses coded as 3 and 4 (agree and strongly agree) on the Likert scale were categorised under 'satisfied'.

Table 2: Summary Report for Life Satisfaction in Sebokeng, Sharpville and Sicelo

Item	Name of Township	N	Dissatisfied n + (%)	Satisfied n + (%)
B1	Sebokeng	298	139 (46.6)	159 (53.4)
	Sharpville	285	131(46)	154(54)
	Sicelo	402	145(36.1)	257(64.8)
B2	Sebokeng	298	198(66.7)	100(33.6)
	Sharpville	285	122(42.8)	163(57.2)
	Sicelo	402	251(62.5)	151(37.5)
B3	Sebokeng	298	191(64)	107(36)
	Sharpville	285	116(40.7)	169(59.3)
	Sicelo	402	226(56.2)	176(43.8)
B4	Sebokeng	298	201(67.5)	97(32.5)
	Sharpville	285	137(48.8)	148(51.1)
	Sicelo	402	224(55.7)	178(44.3)
B5	Sebokeng	298	160(53.7)	138(46.3)
	Sharpville	285	84(29.4)	201(70.5)
	Sicelo	402	257(63.9)	145(36.1)
Totals	Sebokeng	298	59.6%	40.3%
	Sharpville	285	41.0%	59.0%
	Sicelo	402	55.0%	45.0%
Scale: 1&2 = Dissatisfied; 3 & 4: Satisfied				

With regard to the first question, (In most way my life is close to ideal), the majority of respondents from all three townships were satisfied. This is suppoprted by the fact that 53% of the respondents from Sebokeng, 54% from Sharpville and 65% from Sicelo attested that their lives were close to ideal. However with regard to question two (The conditions of my life are excellent), only respondents from Sharpville (57%) indicated that they were satisfied with life, while the majority of respondents from Sebokeng (67%) and Sicelo (63%) indicated that the conditions of their lives were not excellent. With reference to querstion three (I am satisfied with my life) Sharpville was the only township with most respondents (59%) indicating that they were satisfied with life. From Sebokeng, only 36% and from Sicelo, 43% of the respondents, representing a minority, indicated that they were satisfied with life. Consistent with this established pattern, in terms of the fourth question (So far I have got the important things I want in life), only Sharpvillie had the largest number of respondents (51%) who were satisfied. In contrast, 33% of the respondents from Sebokeng and 44% of respondents from Sicelo indicated that they had not yet got the things they needed in life, which signals dissatisfaction with life in this area. Finally, with respect to question five (If I could live my life over, I would change almost nothing), the response from Sharpville was resounding, with 71% of the respondents affirming the statement. Conversley, a majority of the respondents from Sebokeng (54%) as well as from Sicelo (64%) indicated that given the chance, they were willing to change some aspects of their lives.

An analysis of the overall results (all questionnaire responses on the Life Satisfaction Scale combined) for all five items show that in Sebokeng, almost 60% of the responses indicated dissatisfaction while 40% indicated satisfaction with life. In Sharpville, 41% responses indicated dissatisfaction with life as opposed to 59% that indicated satisfaction with life. In Sicelo, 55% of the responses were inclined towards dissatisfaction as opposed to 45% that were inclined towards satisfaction. By implication, the highest satisfaction with life was found amongst residents of Sharpville (59% satisfaction), followed by Sicelo (45% satisfaction) with Sebokeng occupying the bottom position (40% satisfaction).

5. Regression Analysis for Sebokeng, Sharpville and Sicelo

Regression analysis was conducted to verify the influence of demographic factors on life satisfaction in each of the three township locations. Using the enter method of regression, the five demographic variables (marital status, age, gender, employment status and educational level), which were the independent variables, were regressed against the dependent variable, i.e. life satisfaction. This procedure was done separately for each of the three townships, namely Sebokeng, Sharpville and Sicelo. Since all demographic factors were categorical variables, they were entered into the regression models dichotomously (coded 0-1), implying that only two categories were recognised in the regression analyses. When the results obtained in the regression analyses for Sebokeng, Sharpville and Sicelo are presented together in one table, it is possible to get an overview of the overall permutations in the association between demographic factors and life satisfaction. This is presented in Table 3.

Table 3: Regression Summaries for Sebokeng, Sharpville and Sicelo

Variables	Location	Regression Results (β)	Significance (*P*)
Marital status → Life satisfaction	Sebokeng	0.058	0.170
	Sharpville	0.061	0.337
	Sicelo	0.064	0.192
Age → Life satisfaction	Sebokeng	0.369	0.019
	Sharpville	0.135	0.143
	Sicelo	0.105	0.094
Gender→ Life satisfaction	Sebokeng	0.039	0.307
	Sharpville	0.044	0.725
	Sicelo	0.024	0.362
Employment → Life satisfaction	Sebokeng	0.528	0.002
	Sharpville	0.641	0.005
	Sicelo	0.522	0.007
Educational Level→ Life satisfaction	Sebokeng	0.270	0.000
	Sharpville	0.371	0.000
	Sicelo	0.261	0.000

* Significant at .05 level i.e. the Null Hypothesis is rejected if the P value is less than the significance level

As revealed in Table 3, in all three townships, all demographic factors with the exception of marital status and gender strongly predicted life satisfaction. Employment emerged as the strongest predictor of life satisfaction and gender emerged as the weakest predictor of life satisfaction life.

6. Discussion

There were several observations made on the levels of life satisfaction that emerged from the analysis of the collected data in this study. The first observation is the variation in the perceptions of life satisfaction between residents of Sharpeville on the one hand, and those in Sebokeng and Sicelo on the other. While there was an optimistic life satisfaction outlook by the residents of Sharpeville, there was a very negative viewpoint emerging from Sebokeng and Sicelo. The greater number of respondents from Sebokeng and Sicelo indicated that their lives were not close to ideal (imperfect), the conditions of their lives were poor, they still had a lot to achieve and given the chance they would prefer to change some things in their lives. These perspectives are microcosmic of gross dissatisfaction with life and are at variance with the views of those from Sharpville, who exhibited satisfactory levels of satisfaction with life. This result is interesting in that it demonstrates that individuals residing under similar circumstances can experience different life satisfaction levels. Given that residents of informal settlements within the three townships were recruited to be part of the sample in this study, with some of them reporting that they were experiencing high life satisfaction levels, questions may be placed on the exact influence of geographic location or type of settlement on life satisfaction. In other words, in certain cases, the place of residence influences people differently, depending on the influence of other factors.

The second observation, as revealed through the results obtained from Sebokeng and Sicelo, is that life satisfaction in a township can be low, with residents embracing negative feelings about the state of affairs. This can be attributed to several reasons. Many of the homes in South African townships are illegally built on land that is owned by someone else, leading to the none-availability of basic amenities such as electricity, roads, sanitary facilities and clean water, among others (Swart, 2013). Since some of the houses are built illegally, formal construction standards are disregarded, making these structures vulnerable during times of natural occurrences such as heavy rainfall and/or flooding (Jeffery, 2010). Shack fires are also a common occurrence, while safety issues are a major concern in most South African townships, with frequent, if not regular, bombardments of acts of criminality that claim many lives each year (Managa, 2012). For instance, a study by Masitsa (2011) found that both teachers and learners are not safe in their schools, either during or after school hours, which tends to compromise the quality of education in townships. Moreover, social and political unrest is also commonplace in townships. For instance, almost all violent service delivery protests that characterise modern-day South Africa are normally concentrated in the townships (Swart, 2013). The anti-foreigner campaigns that started in Soweto in January 2015 and later spread to other parts of South Africa, were largely attributed to poor life satisfaction levels amongst residents (Associated Press, 2015). The dense population coupled with unfavourable conditions provides fertile ground for such activities and could have a further detrimental effect on the life satisfaction of residents of such townships. Therefore, the unconducive and undesirable conditions in townships have a counteractive effect on the life satisfaction of residents.

The third observation is that despite the aforementioned views, this empirical research challenges certain traditionally accepted views and stereotypes about township lives. Conventionally, the widely espoused view among many was that township life was substandard, which lead to the natural anticipation that there was less satisfaction with life in townships. This view has since changed as noted in this study and cannot be espoused holistically. For example, there have been massive infrastructural developments in townships, with townhouses and other modern cluster houses, as well as state of the art shopping malls that have been built in townships (Chipkin, 2012). Examples of such developments include Maponya Mall in Soweto, clusters of townhouse developments spread across West Rand in Johannesburg, and Makro and President Hyper shopping facilities in Sharpville. The effect of such developments is to alter the social landscape of South Africa in that many black middle class people have moved into such townships in order to take advantage of the availability of such facilities. In addition, for many black South Africans, township life provides encounters of close companionship that is so important to everyday life (Mbembe, 2008). This is because people in townships live in close spaces and have an opportunity to share many of the facilities that are available, which provides for the creation of close family and community bonds (Jones, 2013). As an example, a common phenomenon is the meetings that are held during weekends where residents have the opportunity to socialise and enjoy grilled meat (braai) together (Jones, 2013). Such activities could have a positive effect on the life satisfaction of residents in townships. It also becomes difficult to endorse the traditional view that life experiences for people in townships are charecterised by economic depravity and social dysfunction.

Another interesting observation is that on the one hand, residents of Sebokeng and Sicelo mentioned that their lives were close to ideal, while on the other hand they refuted that the conditions of their lives were excellent. This scenario is ironic in the sense that it is expected that people who claim to have an ideal life would naturally regard the conditions of their lives to be excellent as well. There are two possible explanations for this phenomenon. First, a closer look at the meanings of the terms ideal and excellent reveals very subtle but important differences whose effect cannot be underestimated. The Oxford English Dictionary (2000:391) defines the term ideal as perfect, visionary or desirable but unlikely to become a reality. The same dictionary defines the term excellent as 'extremely good, superior and outstanding' (p 269). This implies that an ideal state is an imaginary one (only exists in the mind) that does not actually exist (it is what is desired for the future). With reference to Sebokeng and Sicelo, what residents perceive in their minds appears to be the ideal (they have a clear mental picture of what they desire), but they acknowledge that the actual situation on the ground is far from that. A second possible explanation for the variance in the responses given could be that the other question focused on the 'conditions' of life, in contrast with the first question which focused on the general idealness of life. Conditions usually refer to the factors or circumstances influencing the manner in which people live or work (Saxby, 2012). This possibly implies that as respondents gave answers to the question on conditions of their lives, their primary focus could have been on various external factors such as the economy, resources and living conditions, among others, which are presently in a bad state. Hence their responses on this matter were negative.

Based on the foregoing discussion, it is clear that sources of satisfaction with life vary for different persons depending on the diversity of their needs and wants. The study revealed that residents of Sebokeng, Sharpville and Sicelo, which are all classified as townships, experience different levels of life satisfaction as determined by their different needs and wants. Therefore, township life satisfaction experiences in contemporary South Africa are not homogeneous.

In considering the results of the regression analyses, both conventional and unconventional patterns were observed in this study. For instance, the results of the association between marital status and life satisfaction contradicted the established trends. Available literature (e.g. Diener *et al.,* 2000; Easterlin, 2001; Layard, 2006; Stutzer and Frey, 2006) validates that the status of being married is generally associated with higher life satisfaction levels and happiness than other similar forms of relationships. This is attributed to the ability of marriage to provide additional sources of self-esteem for instance, by providing an escape from stress in other parts of one's life, in particular one's job (Willitts *et al.,* 2004), the opportunity of gaining from a supportive and intimate relationship from the significant other (Stanca, 2009) and providing important protective barriers against the stressful consequences of external threats (Musick and Bumpass, 2012). With regard to age, the results of the present study validate previous results that show that age does predict life satisfaction. A u-shaped age effect is confirmed by several studies (Easterlin, 2006; Frey and Stutzer, 2002; Oswald, 1997; Blanchflower and Oswald, 2008). This depicts that life satisfaction is at its lowest during middle age (between 30 and 50 years) and highest during early life and later life. Evidence gathered from a number of studies (Frijters and Beatton, 2008; Gwozdz and Sousa-Poza, 2010; Stone *et al.,* 2010) suggests that people become more satisfied when they retire. This confirms that age has an influence on life satisfaction.

With reference to gender, the results of the current study contradict the universal perspective that women experience higher life satisfaction levels than men throughout the life span. A number of studies (e.g. Blanchflower and Oswald, 2004; Frey and Stutzer, 2002; Van Praag and Ferrer-i-Carbonell, 2008) found that women are happier and more satisfied with life than men. Tiefenbach and Kohlbacher (2013) also confirm the universal finding that women are more satisfied in life than men. In terms of employment status, the results of the present study are consistent with previous research results (e.g. Carroll, 2005; Knabe and Ratzel, 2011; Opocher and Steedman, 2009). As regards educational level, the results of this study are in sync with established research conducted in international contexts (Amaike, 2006; Cuñado and Pérez-de-Gracia, 2012; Daukantaite and Zukauskiene, 2006; Frey, 2008; Özer and Sackes, 2011; Peiró, 2006; Salinas-Jiménez *et al.*, 2011) where it emerged that education was positively and significantly related to life satisfaction.

That employment status emerged as the strongest predictor of life satisfaction across all three townships is not surprising, given that unemployment is usually is accompanied by extreme destitution, which is often aggravated by the inability of governments to support such people with social grants and other forms of unemployment benefits (Contogiannis, 2007). Joblessness leads to loss of income, decreased self-esteem, a reduced feeling that life is under control, loss of friends/social connections and loss of personal status and identity (Clark *et al.,* 2010). It is logical then that respondents attached greater significance to employment than other demographic factors in this study.

7. Conclusion

The aim of the study was to investigate the levels of life satisfaction amongst low income groups in South Africa. In order to achieve this aim, the Satisfaction with Life Scale was used in eliciting information from selected residents of Sebokeng, Sharpville and Sicelo townships, followed by the use of descriptive statistics and regression analysis in the analysis of the collected data. There was a slightly expectant and positive perception towards life satisfaction in Sharpville, whereas in Sebokeng and Sicelo there was a very negative atmosphere on the same matter. This generates the conclusion that people residing in different townships in South Africa may experience different life satisfaction levels. These variations make it imperative to consider each geographic cluster separately when reflecting on life satisfaction experiences. In addition, the results obtained in Sharpville that indicate somewhat satisfactory life satisfaction levels challenge the view that township life in South Africa is generally deplorable. This attracts the conclusion that residing in a South African township, or one that is usually considered to be a low income area, does not necessarily lead to a miserable life. There are many people in such areas who continue to experience high levels of life satisfaction as shown by the results obtained in Sharpville. With regard to regression analysis, age, employment status and educational level predicted life satisfaction across all three townships while marital status and gender were not statistically significant. Residents of low income areas attach more significance to employment status than the other demographic factors considered in this study.

The study contributes to both theory and practice in the field of development economics. In terms of theoretical relevance, as highlighted by Oswald and Powdthavee (2008), life satisfaction is an enduring indicator of both socio and economic stability in any given country. Schatz *et al.* (2012) further maintain that life satisfaction is an important economic indicator, since higher life satisfaction correlates with standard of living and economic prosperity. This sheer significance signals that research on life satisfaction is merited on a perpetual basis, so that new evidence and knowledge can be generated, which can be used to update what is already known about the concept. Findings from this study may be used as a reference point by government authorities in developing policies and strategies for the sustenance of people in South Africa. By focusing on low income groups, this study acts as an empirical voice for this cohort, providing valid information which governance authorities can manipulate for the benefit of underprivileged groups.

With respect to practical relevance, given that life satisfaction is an important indicator of socio-economic well-being (Oswald and Powdthavee, 2008) it is important for those in positions of socio-economic governance to have a more informed understanding of the levels of life satisfaction amongst the people they govern, as this facilitates improved decision-making. Decision making that is based on assumptions may not be effective in addressing societal and economic problems. This being the case, this study provides social and economic development planners in government with prototypical insights on the existing levels of life satisfaction in South African townships. Other non-governmental organisations such as churches and aid institutions can also refer to the study for information on the life satisfaction of people in townships. The information in this study provides the ammunition that is requisite in formulating policies and other initiatives requisite in meeting the socio-economic needs of township communities. Should such initiatives be implemented, a ripple effect becomes inevitable which is higher satisfaction of life in South Africa and a better reputation for the country at large, which preserves the legacy of a “The Rainbow Nation”.

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NEW APPROACHES IN PUBLIC SECTOR REPORTING AT EUROPEAN UNION LEVEL

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Abstract. This study focuses on the fiscal reporting basis according to the European System of Accounts (ESA 2010), by assessing it closely related to the national accounting systems (financial/budgeting accounting). It provides a holistic approach to the EU members states positioning about the fiscal reporting (through budgeting/statistical accounting), by assessing it through the connection with the financial accounting based on International Public Sector Accounting Standards (IPSAS), using accrual basis as a benchmark. The results reached by applying the cluster analysis and the Multidimensional Scaling technique reveal the complexity of the transition, identifying different positioning of the EU countries in the accrual world, thus enriching scientific literature by providing valuable evidence for future analysis regarding accounting regulation in the public sector.

JEL Classification: M48, H83, G38, C40

Keywords: fiscal reporting, ESA, financial reporting, IPSAS/EPSAS, European Union, public sector

1. Introduction

Public sector efficiency gradually became a major goal given that many institutions have turned into entrepreneurial entities due to the independence of their budgetary financing. Increasing stakeholder decision-making power over the bureaucracy and, thereby, functioning like private entities (Patrick and French, 2011) made that the introduction of private sphere management techniques in the public sector (Roje et al. 2012) have become a certainty.

Comparability and information accuracy are important pillars of the qualitative management, defined by high transparency and incentive performance (Gajda-Lupke, 2009). Besides financial reporting, the fiscal one is also essential for reinstalling transparency and trust, thus maintaining stability, and above all these, for providing the statistical framework.

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In this context, the accounting rules and national accounts have a vital role across Europe. Accrual accounting and budgeting are connected with the financial and fiscal policy, the last one being closely linked to the macroeconomic information systems (Marti, 2006).

In this process, the international organizations had an active role in supporting the adoption of the accrual basis of governmental accounting. Through this study, we provide a comparison at the EU country-level of the accounting treatment applicable to several key items used by the two main governmental reporting systems: general-purpose financial reports (International Public Sector Accounting Standards - IPSAS) and statistical/fiscal reports (European System of National Accounts - ESA 2010).

The main goal of this study is to combine the conceptual approach of the fiscal reporting through accrual basis (ESA 2010) in the context of European regulations, with the pragmatically one aiming to identify the degree of accrual basis implementation at EU country-level, in both financial accounting and budgeting/ statistical framework. Thus, the accrual world, the keystone of the European Union economic governance, became a benchmark in our research.

The originality of the study is provided at several levels. Theoretically, fiscal reporting issues are conceptually presented through scientific literature, highlighting the most significant trends in the public sphere with impact on the European practices. Practically, identifying the current state of the fiscal reporting system, connected with the financial one among all EU countries is a useful reference base for quantifying the magnitude of changes that will govern the public sector.

The main findings of our research reveal that developing the fiscal reporting in an accrual world as a basis for the governmental accounting is an important milestone in the evolution and transformation of the public sector. The study captures the institutional approach of the concept by presenting the influences of EU decision-making bodies along with an assessment of the EU member states ability to adapt, starting from the current situation. By assessing the magnitude of changes, EU countries' openness towards accepting imposed policies must be grounded in decisions and actions that respond to their needs.

The paper unfolds as follows, apart from the present introduction: the first section presents current trends in developing financial and fiscal reporting through accrual accounting and budgeting process that were considered triggers of the planned changes in the public sector. Then, focusing on the accrual concept, we presented the main tools used by the international bodies in developing the public sector accounting (ESA and IPSAS/EPSAS). In the following, the research methodology is outlined, the Hierarchical Cluster Analysis and the Multidimensional Scaling Technique being used for mapping the EU countries' sample according to their fiscal and financial reporting systems. The results and discussion section reveals the views and experiences of various EU member states regarding their public sector accounting system, the challenges they have encountered in implementing different elements of accrual accounting, budgeting/statistical reporting and IPSASs provisions in their particular contexts. The final section offers some concluding remarks, emphasizing the need for harmonization of European public sector accounting, thus providing an array of opportunities for future accounting research studies.

2. Theoretical background

2.1 Trends in financial and fiscal reporting in the public sector

The budgeting/statistical and financial accounting systems are the two central pillars that support performance in the public sector. The existence of a large diversity of circumstances for the public sector reporting raise difficulties in getting reliable, accurate and comparable accounting and statistical data, used to sustain decisions regarding EU financial and fiscal policy. A decisive step to enhance the performance for both micro and macro perspectives is the need for standardized procedures able to increase the information's quality and comparability.

In this regard, various international/European bodies involved (e.g. IPSASB, European Commission and European Council) support literature opinion. Consequently, as Heald and Hodges (2015) claimed, a reliable and transparent disclosure of the financial and fiscal positions of the EU countries becomes necessary given that these are strongly connected in economic and political approaches.

Thereby, aiming to ensure this fiscal standardization, European Council (2011) provided the following requirements within its official documents: *"As concerns national systems of public accounting, Member States shall have in place public accounting systems comprehensively and consistently covering all sub-sectors of general government and containing the information needed to generate accrual data with a view to preparing data based on [ESA]."* (European Council, 2011, article 3.1).

Chasing a similar goal, namely financial reporting standardization, the European Commission (2013) mentions that *"Accruals accounting is the only generally accepted information system that provides a complete and reliable picture of the financial and economic position and performance of a government […]"* (European Commission, 2013, p. 3).

Consequently, the accrual world became a benchmark in this study, being encountered in various accounting concept approaches (financial or budgeting/ statistical), while the adoption of accrual basis by governments became the framework for IPSAS and SEC 2010 references.

The motivation of this study starts from these scientific and regulatory arguments which demonstrate that financial and fiscal policies will be based on the two forms of government accounting, whose junction point is the accrual concept. In this broad context of transformations in the financial and budgeting/statistical accounting, the primary objective of this study is to demonstrate that the accrual basis is the key determinant of improving financial and fiscal reporting in the EU.

Thus, the accrual level is assessed from two perspectives: as a reference basis for the financial accounting and as an implementation level for IPSAS references. For this purpose, the paper will follow two important research questions:

> *RQ1. Which is the level of accrual basis adoption in the fiscal reporting through the budgeting accounting in relation to the financial reporting through financial accounting system?*
>
> *RQ2. Which is the interdependence between the fiscal reporting system through the budgeting accounting and the level of IPSAS practical implementation as a basis for the financial accounting system?*

For answering both research questions, all EU countries' status was considered as the reference point for the analysis performed. While the first research question tried to identify all 28 member states' status regarding both accounting and fiscal reporting systems (cash versus accrual), the second one expanded our research considering the international standards for accrual-based accounting (IPSAS) in the public sector.

According to literature, evidence from various countries' accounting reforms reveal that IPSAS could not be easily implemented due to their different perception, some of them experiencing a strong tendency to apply accrual accounting, whereas others directed their efforts towards national reforms (Caperchione and Lapsley, 2011; Christiaens et al., 2014). However, IPSAS represent an indisputable reference for potential EU harmonized public sector accounts, thus being a suitable starting point for the future development and adoption of a set of EPSAS. This primary goal calls for strong EU governance considering the differences between countries regarding their budgeting and accounting systems, which might cause difficulties when it comes to changes even under international pressure (Rossi et al., 2014). Thus, the implementation of EPSAS accrual accounting would be a major reform for those countries with a strong accounting tradition that currently use only cash accounting and pay significant attention to budgeting rather than seeing the importance of harmonized information (Pina et al., 2009a).

The results of the study will outline a map of governmental accounting basis in the European space, where each country will be positioned depending on the current state of accrual adoption. Analyzing the level of IPSAS implementation enables us to quantify how this system helps in implementing accrual concept, the basis for ESA 2010. The emergence of this new development direction regarding accounting will influence the financial and fiscal performance evolution in the EU countries.

2.2 Essential aspects regarding ESA 2010, coordinator of fiscal reporting

2.2.1 ESA 2010 references – the basis for budgeting accounting in the European public sector accounting system

A part of the financial contribution of each EU member state (the fourth own resource for the EU) is estimated based on the results of the national accounting. It is one of the reasons why the European System of National Accounts (ESA) must ensure that all members accomplish the same measurements. How appraising individual initiative is subject to various interpretations, the ESA should try to clarify and point at the highest level, the assesment techniques of the economic variables.

ESA is defined as an accounting framework, applicable at an international scale, enabling an analytical and systematic description of a country's economy, its components and relations with other economies (European Parliament / Council, 2013). ESA creation was imposed by the need to provide correlated information for performing calculations and macroeconomic analyses, thus becoming the primary macroeconomic research tool used in statistics' world.

Historically, the issue of a uniform reporting has been a constant concern in the international environment. ESA appearance in 1970 required an interdisciplinary work of the international bodies involved in the process of developing a system of national accounts (e.g. Eurostat) able to satisfy the economic and social policy of the European Community. That document constituted the community version of National Accounts System (NAS), the second edition of the report being published in 1979.

European Community (EC, 1996) established a system of national accounts (ESA 95) aiming to ensure the comparability of information provided by the Community members. This version was revised, in agreement with the structure of EU countries' economies, to create a common framework for the collection, compilation, transmission and evaluation of the European economic accounts (European Parliament / Council, 2011).

ESA (2010) is used since September 2014 (European Parliament / Council, 2013) by all EU member states, imposing the obligation of publishing the national accounts according to the methodology approved by Regulation (EU) no. 549/2013 of the European Parliament / Council.

All EU countries have already adopted and implemented gradually ESA directives. Starting from elementary statistics, each country's national accounting technicians estimate, calculate and analyze economic flows, forming the whole national system. Due to frequent inconsistencies in the results of elementary statistics, as well as the information gaps in some sectors, there are complex issues that often arise. It is also the reason why after the year 2000, specialized bodies from United Nations and the European Union regularly acted to refine and broaden its use.

2.2.2 ESA adoption stage in the European Union member states and particularly in Romania

National authorities from different countries, as well as international financial institutions (e.g. International Monetary Fund, World Bank, European Central Bank), have launched various initiatives to collect further statistical data for covering information gaps. One of these is the action of the Working Group on Reinforcing International Cooperation and Promoting Integrity in Financial Markets consisting of finance ministers and central bank governors of the Group of 20 (G-20). This group requested the International Monetary Fund and the Financial Stability Committee to review those areas where information is missing and to propose measures for data collection.

The result of this action is the legislative package for improving economic governance (known as the “Fiscal Compact” or the “Six pack”), consisting of five regulations and one directive, adopted by the European Parliament and Council in November 2011. Among other implications upon statistics, this legislative package (notably Council Directive 2011/85/EU on requirements for budgetary frameworks of the Member States) contains provisions that have an impact on statistics collection and dissemination of fiscal data.

According to Eurostat/European Commission (2013), ESA accounts are produced in many EU countries from cash-based public accounting systems, to which a series of “accruals adjustments” are made. These adjustments are estimated on a macro basis, and as a consequence they are approximations. Where there are no accruals accounts at the micro level, financial transactions and balance sheets have to be derived from a mix of different sources, leading to a “statistical discrepancy” between the deficit compiled via non-financial accounts and the deficit compiled via financial accounts.

Official reports raise the issue of harmonization at European level given that ESA data are derived from Member States' public accounting data, which vary from purely cash-based to full accruals, passing through many intermediate mixed models (Eurostat/European Commission, 2013).

Applying ESA in Romania

The collapse of the communist regime stimulated massive changes in the Central and Eastern European countries (CEE) in a very short time (McKendrick, 2007). Since 2006, the new Romanian accounting framework has imposed the accrual basis for financial reporting in the public sector (Nistor and Deaconu, 2014). However, cash accounting is still used in assessing the macroeconomic impact of public sector activity and informing judgments about the relationship between fiscal and monetary policy. Consequently, budgeting/statistical accounting includes information on the cash basis, thus causing a lack of consistency in processing the accounting information.

The fiscal reporting facilitates the notification of deficits, according to ESA, by improving the reporting system regarding the allocation of the public resources to projects and programs considering performance criteria (McKendrick, 2007). In Romania, an EU member state, the performance of the national economy is assessed through ESA, by measuring the level of development of various units, through identical measures and methods aiming to compare them internationally. Fundamentally, for Romania, ESA implementation targets data collected at the reporting unit level aiming to perform macroeconomic statistics that can be used as micro-data, serving financial stability purposes, provided that data rely on harmonized definitions and reporting standards.

ESA reporting, a consequence of the financial crisis, appeared as an argument for the economic policy makers due to the need to increase the quality of statistical data by expanding their coverage and improving their timeliness. Methodologically, economic realities reflected through ESA have grouped the accounts by both space characteristics at national, multi-country and regional level, and time features in quarterly, annual and several years at a time accounts.

As a practical example of using ESA versus IPSAS system in the military accounting field, ESA 2010 extends the scope of military capital goods by including military weaponry and support systems that are used for more than a year for defence services. Consequently, GDP and GNI is increased by the amount of military equipment purchased regrouped from intermediate consumption in gross fixed capital, plus the value of fixed capital consumption calculated for the equipment in use. Data sources used for evaluation of military equipment expenditure were the budget executions and the additional information provided by the Ministry of Defence, prepared in accordance with IPSAS system.

4. Research design and results

4.1 Methodology framework

Aiming to achieve our goal, the exploratory data analysis was carried out at EU country-level to compare the state of the art developments in public sector across European countries, from both accounting and fiscal reporting system. The study was conducted on two different stages focusing on the changeover of the fiscal reporting basis according to ESA 2010 in connection with the national accounting systems, followed by the current status of IPSAS regulation and implementation at EU country level.

Firstly, looking for assessing *the level of accrual basis adoption in the fiscal reporting through the budgeting accounting in relation to the financial accounting system (RQ1)*, we tried to identify all 28 member states' status regarding both accounting and fiscal reporting systems. Afterwards, we expanded our research regarding *the fiscal reporting system through the budgeting accounting by analysing it in connection with the level of IPSAS practical implementation as a basis for the financial accounting system (RQ2),* considering that these international standards for accrual-based accounting in the public sector are not mandatory at the EU level.

In this respect, we combined the *hierarchical cluster analysis* with the *Multidimensional Scaling technique (MDS)* aiming to highlight possible interconnections designed to support a future harmonization towards accrual basis in both accounting and fiscal reporting.

In contrast to prior studies conducted on the public sector that used the same methods on samples of countries (Pina et al., 2009a; Pina et al., 2009b), our research comprises all EU member states' position on accrual basis accounting and fiscal reporting systems. Thus it is a comprehensive study aimed to promote a harmonized reporting, ensuring reliability, comparability and transparency, which can be used for fiscal monitoring, budget surveillance or sound decision-making within the EU countries.

In this respect, for revealing the *fiscal harmonization (Fisc_Rep),* we considered the reporting basis of the fiscal data published by the EU member states on the European Commission's initiative of assessing the compliance with the Council Directive 2011/85/EU, article 3(2) related to fiscal data (EC, 2015). Thus, we assigned "1" value for cash-basis fiscal reporting; "2" for mixed / more bases for a sub-sector and "3" for accrual-basis.

For assessing the *accounting harmonization*, firstly, we considered for our analysis the accounting system of each country, briefly described in Table 1, followed by a comprehensive analysis of the IPSAS regulation and implementation. Thus, for the *accounting system (Acc_Syst)* we assigned "1" value for cash-basis; "2" for a combination between cash and accrual; "3" for modified accrual and "4" for accrual-basis.

Table 1. The accounting system

Accounting Model	Description
Cash accounting	Both statements of financial performance and position are cash based
Modified cash accounting	Both statements of financial position and performance are modified cash based
Accrual accounting	Both statements of financial position and performance are accrual based
Modified accrual accounting	Both statements of financial performance and position are modified accrual-based or when at least one of the two statements is on a modified accrual basis while the other is accrual-based.
Combination of accrual and cash accounting	Either different public entities apply different standards within the same subsector of government or the same entity uses both cash and accrual accounting

Source: PriceWaterhouseCoopers (2014)

Similarly, using scores ranging from "1" to "4", we the appreciated *the level of IPSAS practical implementation* through *the takeover degree of IPSAS into national legislation (Acc_IPSAS),* basing on the results of a survey conducted by PricewaterhouseCoopers (2014). Accordingly, we assigned "1" value when there are explicit references to IPSAS as the primary basis for national accounting regulations; "2" or "3" when IPSAS are used in practice as a source of inspiration / primary basis for developing accounting standards without explicit reference; "4" when IPSAS are not used as a source of inspiration for national accounting rules.

After performing the cluster analysis on the countries' sample, the initial step of our research methodology addressing both our research questions, we validate the five cluster solutions reached by applying *the homogeneity test* (Levene).

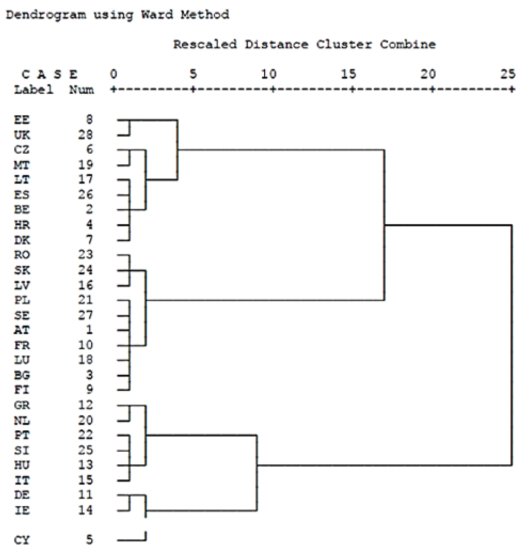
In the next step, to complete the results of the cluster analysis, we applied the *Multidimensional Scaling (MDS) technique* for revealing the structure of our countries' dataset into two dimensions: fiscal reporting vs. accounting reporting, represented by the accounting system (RQ1), respectively the level of IPSAS practical implementation (RQ2), thus answering both our research questions. The reliability of the two mappings is ensured by the fit of our MDS solutions assessed using *the Stress test (Kruskal's type I),* which indicated an excellent fit in both cases.

4.2 Data and results

Wondering upon the status of EU countries regarding both budgeting/ statistical and financial accounting systems, we started the empirical analysis searching for an answer to our first research question *(RQ1)* focused on *the relationship between fiscal and financial reporting through the accrual basis adoption*.

In this respect, we turned to *the hierarchical cluster analysis,* a multidimensional statistical method used to classify objects (in our study EU countries) into several groups (clusters) comprising the most similar units, which instead differ as much as possible between clusters (Everitt, et al. 2011).

Fig. 1: Dendrogram – budgeting/statistical vs. financial accounting system at EU country-level



The dendrogram shows in a graphic way the process of the whole analysis in both directions – forward and backward (see Figure 1.), and thus the optimal result could be found.

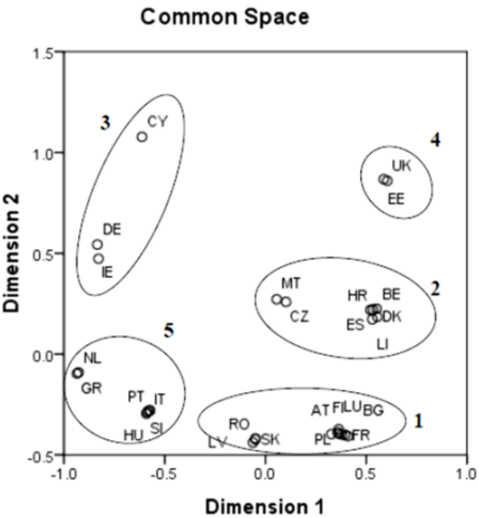
As it can be noticed, we divided our sample of all 28 EU member states into five clusters by considering the resemblance between countries regarding *the level of accrual basis adoption in the fiscal reporting through the budgeting accounting in relation to the financial accounting system* (see Table 2).

Table 2. EU country assignment to clusters for revealing the relationship between budgeting/statistical and accounting systems through the accrual basis adoption

Cluster	Countries
Cluster 1	Austria, Bulgaria, Finland, France, Latvia, Luxembourg, Poland, Romania, Slovakia, Sweden
Cluster 2	Belgium, Croatia, Czech Republic, Denmark, Lithuania, Malta, Spain,
Cluster 3	Cyprus, Germany, Ireland,
Cluster 4	Estonia, UK
Cluster 5	Greece, Hungary, Italy, Netherlands, Portugal, Slovenia

To validate our result, we performed the *homogeneity test* by analyzing whether the variances of the clusters created are significantly different, the *Levene's test* significance (0.000) justifying our decision for a five-cluster solution.

Figure 2: A graphical illustration of EU member states, according to the status of the budgeting/statistical and financial accounting systems



Cluster 1
AT (Austria)
BG (Bulgaria)
FI (Finland)
FR (France)
LV (Latvia)
LU (Luxembourg)
PL (Poland)
RO (Romania)
SK (Slovakia)
SE (Sweden)

Cluster 2
BE (Belgium)
HR (Croatia)
CZ (Czech Republic)
DK (Denmark)
LI (Lithuania)
MT (Malta)
SP (Spain)

Cluster 3
CY (Cyprus)
DE (Germany)
IE (Ireland)

Cluster 4
EE (Estonia)
UK (United Kingdom)

Cluster 5
GR (Greece)
HU (Hungary)
IT (Italy)
NL (Netherlands)
PT (Portugal)
SL (Slovenia)

Dimension 1 – Financial accounting system
Dimension 2 – Budgeting / statistical accounting system

To provide a graphical representation of the cluster analysis (see Figure 2), we used the *Multidimensional Scaling (MDS) technique* for mapping the objects (in our study EU countries) that are perceptually interrelated, thus completing the results already achieved. Consequently, by assigning all objects to locations in a dimensional space, we provide the structure of our countries' dataset into two dimensions: Financial accounting system (dimension 1) vs. Budgeting/statistical accounting system (dimension 2). The result of our solution indicates *a good fit of correspondence* between distances among points on the MDS map according to the *Stress test (Kruskal's type I)* whose value is 0.0547 (Kruskal and Wish, 1978). Consequently, our mapping reveals *the level of accruals basis adoption in both budgeting and financial accounting systems*, thus providing evidences for answering our first research question *(RQ1).*

As it can be seen, there are few countries already adopting full accrual basis for the fiscal data reporting (e.g. Cyprus from Cluster 3, respectively Cluster 4 comprising Estonia and UK). However, the majority of countries situated on the right side of the map, namely Cluster 1, 2 and 4, show a high level of accrual basis adoption (including its intermediate form of modified-accruals) in their accounting systems, thus revealing that there is a wide tendency towards harmonization in the public sector. Nevertheless, there are countries (e.g. Greece and the Netherlands from Cluster 5, respectively Germany and Ireland from Cluster 3), whose both budgeting/statistical and accounting systems are mostly based on cash. In these cases, harmonizing both fiscal and financial reporting towards accrual basis might face barriers, due to existing systems tradition and their reluctance upon changes.

In the following, we will emphasize the main features of each cluster mapped according to the scores reached on the two dimensions revealing their current status of both budgeting/statistical and accounting systems from cash vs. accrual basis point of view.

The first cluster includes countries where their budgeting/statistical and financial accounting systems are on opposite basis, respectively on cash versus accrual basis. In most of them, budgets and budgetary execution and reporting are based on the cash or modified cash principle, hence both types of information (cash and accrual) coexist in governmental accounting. However, there are countries, which despite adopting accrual basis in their accounting system (e.g. Bulgaria, Poland, Finland) they have not introduced it comprehensively, budget preparation and reporting still remaining cash-based. Consequently, a consistent implementation of ESA 2010 requires a strong internal coordination, as well as benchmark revisions in different areas.

The second cluster includes countries having a mixed budgeting/statistical accounting system, while the financial one is mostly accrual-based, the modified-accrual basis being encountered only in few countries (e.g. Latvia, Romania, Slovakia). Thus, the introduction of fiscal reporting narrowed the gap between government accounting and national accounting since the introduction of ESA95 (Montesinos and Vela, 2000). The adoption of the new standard (ESA2010) not only meet a mandatory European requirement, but also modernized its estimation methodology in order to make them comparable with all advanced economies of the world.

The third cluster includes countries having a mixed towards accrual budgeting/statistical accounting system, while the financial one is still cash-based. Thus, within this cluster, budgeting has a greater role than financial reporting (Heiling et al., 2013), cash basis still being at the core of the budgeting process (Brusca et al., 2015). Germany, for example preferred to maintain the traditional budget structure unchanged rather than pursing expensive accrual accounting reforms (Jones et al., 2013).

The fourth cluster includes countries whose both budgeting/statistical and financial accounting systems are on the accrual basis. These are the only two countries (UK and Estonia) from our sample, which have introduced full accrual basis in both subsystems, making them to be considered the leaders for the convergence between the two reporting systems (Broadbent & Guthrie, 2008), by being the early adopters of accrual accounting and budgeting (Hyndman & Connolly, 2011).

The fifth cluster includes countries whose both budgeting/statistical and financial accounting systems are mostly on cash basis. These countries have to face the greatest challenges by moving towards accruals in both accounting system. However, some of them (e.g. The Netherlands) acknowledged the benefits of this harmonization for a while (Keuning and Tongeren, 2004), admitting that it could facilitate benchmarking, increasing national and international comparability of government reports, after undertaken comparative international research (Brusca et al., 2015).

In conclusion, the results show that accrual basis is widely adopted in the majority of accounting systems, and consequently it is suitable for a European-wide adoption in the budgeting/statistical accounting systems, too. Moreover, it is justified by the good positioning of the majority of countries at the confluence between mixed fiscal basis and modified accrual accounting basis, but tending towards full accruals, thus promoting a system of harmonised accrual-based accounting, providing transparent, comparable and reliable financial reporting, but also supporting the quality of fiscal data.

Relying on the above empirical results, we stepped into the second part of our study aimed to provide expended results *regarding the fiscal reporting system by analysing it in connection with the level of IPSAS practical implementation as a basis for the financial accounting system (RQ2).* To complete this part of our empirical analysis we used the same research methodology as in the previous section of our study.

Consequently, by applying *the hierarchical cluster*, we reached to the Dendrogram (see Figure 3) that shows the individual steps of the analysis and its results, the horizontal axis representing the distance between individual clusters, while the vertical axis helping us to find the required rate of clustering.

As it can be noticed, by considering the resemblance between the 28 EU countries regarding *the budgeting/statistical accounting system and the financial one, through IPSAS practical implementation,* we chose the five-cluster solution (see Table 3) justified by the *homogeneity* test's result, which reveals that the clusters created are significantly different (*Levene's test* significance = 0.000).

Figure 3: Dendrogram – budgeting/statistical vs. financial accounting system (through the level of IPSAS practical implementation) at EU country-level

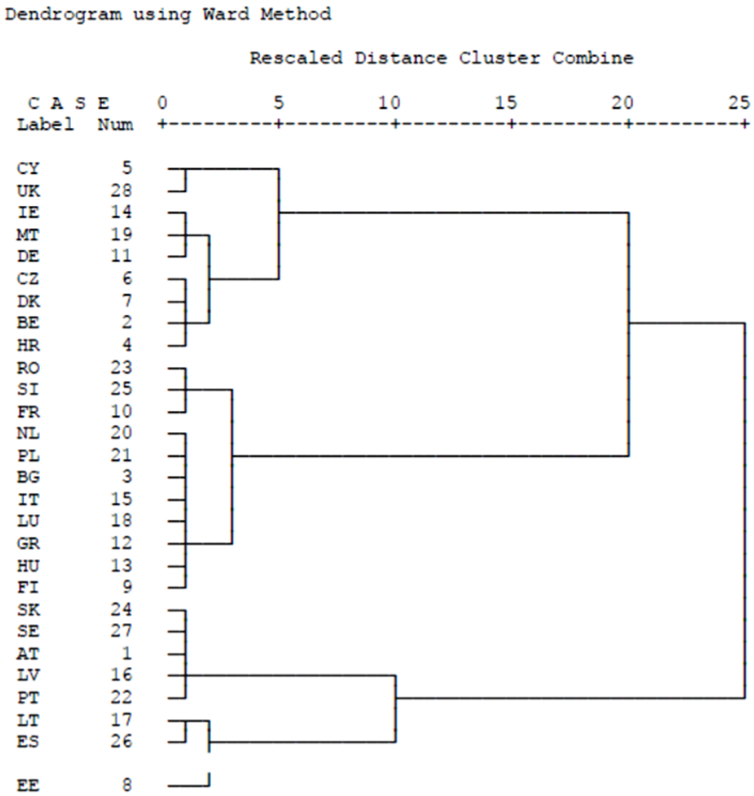
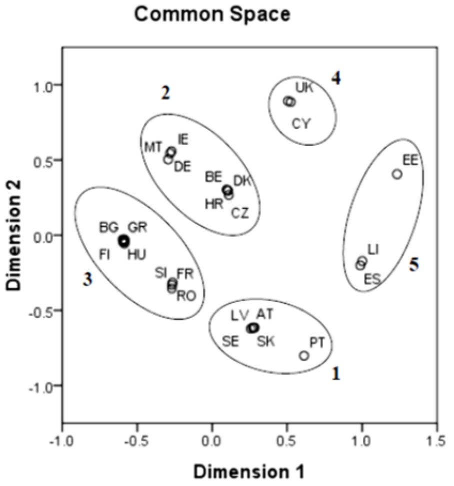


Table 3. EU country assignment to clusters for revealing the relationship between budgeting/statistical and financial accounting systems through IPSAS practical implementation

Cluster	Countries
Cluster 1	Austria, Latvia, Portugal, Slovakia, Sweden
Cluster 2	Belgium, Croatia, Czech Republic, Denmark, Germany, Ireland, Malta,
Cluster 3	Bulgaria, Finland, France, Greece, Hungary, Italy, Luxembourg, Netherlands, Poland, Romania, Slovenia
Cluster 4	Cyprus, UK
Cluster 5	Estonia, Lithuania, Spain

To complete the cluster analysis's results, we finally mapped our sample of countries into a graphical representation (see Figure 4), using the same *MDS technique*, the dimensional space comprising countries' dataset consisting of the following two dimensions: Financial accounting system through IPSAS practical implementation (dimension 1) vs. Budgeting/statistical accounting system (dimension 2).

Figure 4: A graphical illustration of EU member states, according to the status of the budgeting/statistical and financial accounting systems (through IPSAS practical implementation)



Dimension 1 – Financial accounting system (through IPSAS practical implementation)
Dimension 2 – Budgeting / statistical accounting system

Cluster 1
AT (Austria)
LV (Latvia)
PT (Portugal)
SK (Slovakia)
SE (Sweden)

Cluster 2
BE (Belgium)
HR (Croatia)
CZ (Czech Republic)
DK (Denmark)
DE (Germany)
IE (Ireland)
MT (Malta)

Cluster 3
BG (Bulgaria)
FI (Finland)
FR (France)
GR (Greece)
HU (Hungary)
IT (Italy)
LU (Luxembourg)
NL (Netherlands)
PL (Poland)
RO (Romania)
SL (Slovenia)

Cluster 4
CY (Cyprus)
UK (United Kingdom)

Cluster 5
EE (Estonia)
LI (Lithuania)
SP (Spain)

The *validity of the MDS map* resulted is ensured by the Stress test *(Kruskal's type I)* reaching a value of 0.0733 that indicates a *suitable fit of correspondence* between distances among countries. Consequently, our mapping reveals *the relationship between budgeting/statistical accounting system* on the one side and *the financial one through IPSAS practical implementation* on the other side, thus providing evidences for answering our second research question (RQ2).

As follows, we will briefly present the location of each cluster on the map based on scores reached on the two dimensions, justifying their place by referring to the status of the accrual basis adoption in the fiscal reporting closely related with their accounting systems through IPSAS referential, and highlighting some experiences encountered by different countries.

The first cluster includes countries, where IPSASB's provisions are either the primary basis for developing national accounting standards (e.g. Portugal) or widely used in practice, without explicit reference to legislation, thus showing a high degree of IPSAS implementation (e.g. Austria, Latvia, Slovakia and Sweden), but their statistical accounting is still on cash basis. Moreover, there are government sub-sectors (e.g. Portugal) whose accounting systems are not harmonized (Gomes dos Santos and Sarmento, 2014) and, overall, there is a lack of comparability between the information provided by the central and local government. Anyway, national government accounting regulation of these countries were the most inspired by international standards (Oulasvirta, 2014; Hyndman et al., 2014) being the most aligned to IPSAS should would not raise problems.

The second cluster, situated on the opposite side, includes countries where the statistical accounting system is mixed, but IPSAS is not used at all as a source of inspiration for developing accounting standards or it is used in practice without explicit reference and not as a primary source. These countries (e.g. Slovenia, Malta) are a kind of "hybrid of cash and accrual accounting system" (Vasicek et. al, 2010; Jones and Caruana, 2014), being more preoccupied with the budgeting process (e.g. Belgium), thus rarely applying IPSAS recommendations (e.g. Croatia). Most countries are reluctant to such a major change like IPSAS implementation (e.g. The Czech Republic, Belgium), having a negative attitude towards it and giving the impression of wasted efforts (Otrusinova and Pastuszkova, 2013). Anyway, some countries (e.g. Germany) realized that accrual information should support budgetary decisions (Portal, et al, 2012), thus changing their radical opinion regarding accrual accounting reform (Adam, et al., 2011). Consequently, even if IPSAS is generally perceived as an abstract system by countries included in this cluster, aligning to ESA 2010 requirements did not seem to be a very big challenge for them, as proof of their mixed fiscal reporting.

A different situation appears to be in the case of the third cluster including eleven countries that did not pay attention to IPSAS referential, thus not being used as a source of inspiration for national regulations, and provided their fiscal data reporting on cash basis. Most of these countries prefer their strong developed traditional accounting system, rather than the conceptual framework promoted by IPSASB, unknown in some cases (Oulasvirta, 2014). Consequently, these countries not only are far away from an IPSAS approach, but also on the very beginning of the accrual-based statistical accounting still having many adjustments and reconciliations to make according to ESA 2010 requirements.

The fourth cluster includes countries (e.g. UK, Cyprus) that reported their fiscal data on the accrual basis, while IPSAS are used in practice without explicit reference, without being the primary source of inspiration for developing accounting standards. In these cases, the new public management reform seems to have had a major influence towards both budgeting and accounting systems (Hyndman et al., 2014), considering their fast move from a cash approach to the accrual one in the case of both statistical reporting and the financial one, represented by IPSAS adoption.

An almost similar situation is revealed by the fifth cluster including countries (e.g. Estonia, Lithuania and Spain), all having the highest degree of IPSAS adoption, due to its explicit reference as the primary basis for developing their national accounting standards, and reporting their fiscal data mostly on the accrual basis. Aiming to increase their credibility, resulting from widely adopting IPSAS (Brusca, et al., 2013) these countries behaviors were mainly influenced by institutional pressures, which lead to the fastest alignment to both IPSASB and ESA provisions.

In conclusion, although there still are countries having diverse views, quite reluctant about the accrual bases (especially Cluster 1 and Cluster 3), the current status of IPSAS implementation creates prerequisites for an international harmonization of the statistical reporting and the financial one, through IPSAS adoption, towards an accrual based approach. Thus, our results are quite encouraging even for a future mandatory adoption of EPSAS at European level.

5. Conclusions

Under the pressure of the New Public Management a greater need to reform both budgeting and financial accounting systems toward accrual basis was inevitable, the level of harmonization within EU member states still being highly inconsistent due to the diverse public sector financial reporting practices. Thus, prior surveys (e.g. E&Y, 2012; PwC, 2014; EC, 2015) reveal that European government accounting vary widely, ranging from cash-based accounting systems through a combination of cash and accrual, towards modified accrual to fully accrual based accounting systems. These are mainly the result of diverse views regarding government financial reporting objective, such as providing input data for statistical accounting to support ESA 2010 and EU fiscal surveillance (EC, 2013), respectively informing decision-making and promoting accountability at the institutional level (IPSASB, 2014). Amid these dynamic trends in the public sector, which is still far from being harmonized, we intended to enrich the research literature with our study aimed to provide a comprehensive overview in this field at European Union level.

The novelty of the research is ensured by its main objective aimed to compare the state of the art developments in public sector across European countries, from both accounting and fiscal reporting system. In this respect, we intended to assess the level of accrual basis adoption in the public sector among European Union countries and to understand to what extent a future harmonization towards accrual basis of both IPSAS and ESA 2010 is feasible.

Moreover, we added value through this paper by the research methodology employed that successfully combines hierarchical cluster analysis with the MDS technique for offering a comprehensive visual image of the current status of both budgeting/statistical and financial accounting systems in the EU public sector, thus covering a literature gap and encouraging the need for future developments towards harmonization.

Firstly, we tried to assess *the level of accrual basis adoption in the fiscal reporting through the budgeting accounting in relation to the financial accounting system (RQ1),* aiming to promote a system of harmonised accrual-based for both type of reporting.

Our results show that accrual basis is widely used in the financial accounting system, whereas budgeting/statistical accounting is mostly based on cash principles. Consequently, the fiscal image of the EU member states has been affected by unreliable and misreported ESA data derived from different accounting systems. In this so far miscellaneous mix of budgeting/statistical and accounting systems, there is a real need for a harmonized reporting, accruals accounting being the one that supports both the quality of fiscal data and the reliability and transparency of the financial information.

Evidences from country-level reveal that there is a European-wide strong interest in both sound financial and statistical reporting, able to increase fiscal transparency and achieve comparability within and EU member states, thus minimizing the incoherencies between the macro and micro-level accounting and reporting frameworks.

The IPSASB has been trying for some years to harmonize public sector accounting through its accounting standards and to narrow the differences between government financial reporting and statistical accounting (IPSASB, 2012, 2014). Considering these latest development trends in the public sector according to which the national government accounting standards of some EU members states are linked to IPSAS, either as a model or as a reference, we decided to deepen our research focusing on the so controversial accounting standards. Thus, aroused our second objective of this study aimed to analyse *the fiscal reporting system through the budgeting accounting in connection with the level of IPSAS practical implementation as a basis for the financial accounting system (RQ2).*

Our results show that governments are overall rather positive about IPSAS, which are already used as a source of inspiration by most of them, even if there still are countries that refused to adopt them, due to subjectivity and interpretation reasons. Anyway, there are countries (e.g. Germany, France) that express criticism regarding their use in the public sector, mainly due to the absence of consistency with budgeting practices. Thus, judging from the relationship between the IPSASB's standards and the European Systems of Accounts, it seems that IPSAS "left out of budgeting" (EC, 2013). Moreover, considering certain difficulties in implementing IPSAS, as EU member states' authorities confess within the process of public consultation, the drafting of a set of European public sector accounting standards (EPSAS), grounded differently from IPSAS, would confer the EU ability to develop its own standards.

In this context, there is a real demand for homogeneous forms of accounting to increase comparability and hence to support fiscal transparency across EU member states. Using the IPSASs as a starting reference, the European Commission (2013) has made a recommendation for the development of a set of harmonized public sector accounting and budgeting standards, i.e. EPSASs.

Accordingly, by bring financial transparency and comparability of government financial accounting and reporting across the EU Member States, EPSAS will make easier to translate public sector accounts into accrual fiscal statistics, while increasing also the timeliness and reliability of fiscal data, especially for local and regional governments. Moreover, the fiscal transparency benefits of good quality harmonized data are also indisputable alongside with its power of increasing public accountability, both stimulating the idea of openness within institutions. Also, these are perceived as key elements for enhancing good governance in the public sector and for creating a positive political and social environment.

In conclusion, there is an undeniable need for an EPSAS accrual accounting reform in the public sector, thus ensuring harmonization throughout implementing the accrual principle in budgetary accountancy systems, too, and offering data comparable among EU countries which can be used for budget monitoring, fiscal and economic decisions.

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THE IMPACT OF THE CHILD SUPPORT GRANT ON GRADE REPETITION AND CHILD HUNGER: EVALUATING THE SOUTH AFRICAN EXPERIENCE USING PROPENSITY SCORE MATCHING

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Abstract. This paper investigates the impact of the Child Support Grant (an unconditional transfer which provides cash to poverty-stricken households in order to alleviate poverty) on child hunger and grade repetition in South Africa. The study is based on the National Income Dynamics Study (NIDS) data set for South Africa for the year 2008. We account for the non-random selection of recipient households by using propensity score matching method. The results show that the Child Support Grant has a negative, although, limited effect on child hunger and grade repetition in South Africa.

JEL Classification: I38, I21, O15

Keywords: propensity score matching, Child Support Grant, child hunger, grade repetition

1. Introduction

Child Support Grant is increasingly becoming an important and promising tool for assisting the most vulnerable households in South Africa. This grant was introduced in 1998 with an explicit aim of reducing poverty and providing needed support to vulnerable households in South Africa. There is some encouraging empirical evidence to suggest that the Child Support Grant can help in the way of improving the well-being of the beneficiaries. In particular, various studies assessing the impact of the Child Support Grant have shown positive results on several dimensions of socioeconomic well-being, including, grade repetition, incidences of illness, and creche or daycare and attendance (see Budlender, Burns & Woolard 2007); school enrolment, attendance and learning (see Heinrich et al 2012 , Case et al 2005, Eyal et al 2013, Coetzee 2012); child hunger, weight and height z scores, and child labour (see Samson et al 2012 Samson et al 2008, Williams & Samson 2007, Aguero et al. 2009, Budlender & Woolard 2006, Boler 2007 and Samson et al. 2004). However less research has been undertaken to explore the impact of the Child Support Grant on grade repetition and child hunger.

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Moreover, while evidence from the above studies is beginning to shed some light on the potential impact of the Child Support Grant on various socioeconomic indicators, the Child Support Grant has not been as broadly and rigorously studied as Conditional Cash Transfers (CCTs) programs in Latin America. These are similar schemes which provide cash support to certain households conditional on certain behaviours on the part of the household –conditions explicitly related to schooling, visit health clinics, school attendance, school enrolment, child vaccination, etc. Some of the well documented programe, include the Program Keluarga Harapan and Program Nasional Pemberdayaan Masyarakat-Generasi Sehat dan Cerdas in Indonesia, *Juntos* in Peru, Progresa or Oportunidades in Mexico, Education Sector Support Project in Cambodia, Bolsa Escola and Bolsa Familia in Brazil, *Familias en Acción* in Colomia, Red de Proteccion Social in Nicaragua, Programa de Asistencia Familiar in Honduras, Mi Familia Progresa in Guatemala, Program of Advancement through Health and Education in Jamaica, Food-for-Education in Bangladesh, and Program Minhet El-Osra in Egypt.

This paper attempts contributes to a small but growing literature on the effects of the Child Support Grant by addressing two main questions: First, we investigate whether receiving the Child Support Grant help to reduce grade repetition. Secondly, we examine the impact of the Child Support Grant on child hunger in South Africa. The article is structured as follows. Section 2 presents the literature survey, section 3 describes the data and variables used in the statistical analysis, Section 4 describe the method used, Section 5 discusses the results and Section 6 concludes.

2. Literature review

In this section we review studies on the impact of cash transfer on hunger and academic performance. A considerable body of evidence exists on the impact of cash transfers on children's schooling and hunger, for example Williams 2007 on South Africa, Cardoso 2004 on Brazil, Samson et al 2008 on South Africa, Skoufias and Parker 2001 on Mexico, Eyal and Woolard 2013 on South Africa, Kaziaga and de Walque 2013 on Burkina Faso, Bundlender and Woolard 2006 on South Africa, Heinrich et al 2012 on South Africa, Behrman and Parker 2010 on Latin America, Samson et al 2004 on South Africa, Glewwe and Kassouf 2010 on Brazil, Schady and Arajo 2006 on Ecuador, and Maluccio and Flores 2005 on Nicaragua.

The impact of cash transfer on hunger and education indicators

Although cash transfers in general have the potential to increase education, the impact of cash transfer seems to be influenced by the type of cash transfer used – conditional or unconditional transfer. For instance CCTs, where transfers are normally conditional on children enrolling in school and attendance rate generally show a strong impacts on schooling compared to unconditional transfers.

For instance, de Brauw et al 2014 examined the impact of Bolas Familia on school enrolment and other educational indicators such as dropout rates, grade progression, and grade repetition in Brazil. Using a longitudinal household data and treatment effect method (propensity score), they find that Bolas Familia causes an 8 percentage points increase in school participation and 10 percentage points increase in grade progression, “with large, significant effects across both younger and older girls in rural areas but concentrated among girls aged 15–17 years in urban areas” (de Brauw et al 2014: 1). Similarly, Cardoso and Souza (2003) studied the impact of Bolsa on child labour and school attendance among ten to fifteen year-old poor children in Brazil. They found that these programs have a significant impact on increasing school attendance. Specifically, they found that the average treatment effect causes an increase of 3 percentage point in school attendance among boys (similar findings were also obtained for boys). Bourguignon et al. (2002) confirm these findings based on 2009 Pesquisa Nacional por Amostra de Domicílios (PNAD) data in Brazil. Specifically they find that the scheme had significant and positive effect on the enrolment rates and in child labour. These results are echoed by Soares et al. (2010) in their paper, “Evaluating the Impact of Brazil’s Bolsa Famila”

Similar evidence is available from other countries. For example, Maluccio and Flores (2005) found that the *Red de la Proteccion Social* in Nicaragua induced a 17.7 percentage point increase in school enrolment and school attendance (20 percent) for the targeted group. Moreover, the program also induced an average net increase of 7.3 percentage points for the students in grade 1 to 4. In Honduras, Glewwe and Olinto (2004) found that the *Programa de Asignacion Familiar (PRAF)* was responsible for a 1 to 2 percentage point increase in school enrolment, and a 2 to 3 percentage point reduction in school dropout rate. Schady and Araujo (2006) in Ecuador using a randomised experiment showed that the CCT had a bigger impact of approximately 10 percentage point increase in school enrolment.

As for unconditional cash transfers such as the Child Support Grant in South Africa – transfers not conditional on children enrolling in school and attendances rate, the impact is rather marginal. For instance, Coetzee (2011) examined the impact of the Child Support Grant on child health, nutrition and education in South Africa. Using the propensity score matching on the National Income Dynamics Study, the author find that the unconditional grant had a surprisingly modest impact on the wellbeing of the beneficiary children. In her view this might be explained by the fact that the transfers are unconditional and is likely to be used for other purposes other than child health, nutrition and education.

Similarly, Budlender and Woolard (2006) assessed the impact of the Child Support Grant and old age grants on children’s schooling and work in South African. Using, Project for Statistics on Living Standards and Development (PSLSD) survey conducted by the Southern African Labour & Development Research Unit (SALDRU) of the University of Cape Town and the World Bank in 1993, they find that while the Child Support Grant has a statistically significant impact on school enrolment, the magnitude is very small.

Samson and Heinrich (2009) applied the propensity score matching method to examine the impact of CSG in South Africa. After adjusting for the differences between the treatment and the control groups, the authors concluded that the impact on the beneficiaries of the Child Support Grant on reducing hunger was 2 to 3 times higher than the unmatched differences of 0.024. In addition, Samson and Heinrich (2009) noted that the beneficiaries of Child Support Grant had a positive and statistical significant impact on school enrolment. There is not much written on the impact of the Child Support Grant on child hunger (with William (2007) and Samson et al (2008) being an exception)) and grade repetition for the Africa which makes it difficult to compare it to other schemes elsewhere.

Although evidence seem to suggest that unconditional cash transfer appear to have a smaller impact compared to CCT, it is difficult to generalise — there are variations in the findings. For example, Case et al. (2005) find that the beneficiaries of the Child Support Grant in KwaZulu Natal was associated with an 8.1 percentage point increase in school enrolment among the 6 year olds, and a corresponding 1.8 points for 7 year olds. A study by Akresh et al. (2013) which attempted to compare a UCT to a CCT conditional on enrolment in Burkina Faso, found no significant difference between the UCT and the CCT. Interestingly enough, a paper entitled " Turning a Shove into a Nudge?" by Benhassine et al (2014) found that adding formal conditions on attendance in Morocco tended to decrease the overall impact on participation and learning.

3. Data and variables used

To investigate the impact of the Child Support Grant on grade repetition and child hunger in South Africa, we employ the National Income Dynamics Study (NIDS). The NIDS is an ongoing longitudinal panel survey with representative data for the South African population. During the first wave, 7683 households were interviewed, generating a sample of over 28,000 persons. NIDS has been conducted since 2008, and covers a wide range of topics, including household's positive or negative shocks (a death in the family or an unemployed relative obtaining a job). It also provides useful information on issues related to poverty and well-being; household composition and structure; fertility and mortality; migration; labour market participation and economic activity; human capital formation, health and education; vulnerability and social capital. Detailed description of the dataset is available at *www.nids.uct.ac.za*. We limit our analysis to the first wave (2008) of the NIDS since the information related to child hunger is only available for wave 1. In the NIDS data the questions related to child hunger incidence and grade repetition were asked as follows:
"In the past 12 months, how often did any child in this household go to bed hungry because there wasn't enough food?"
"Has this child ever repeated a grade?"

In this paper we used two dependent variables: child hunger and grade repetition. The relevant regressors are drawn from the existing empirical literature in this field. The following table provides a brief description of the variables used in the study.

Table 1: explanatory variables used in the empirical analysis

Explanatory variables	Description
Household size	total number of members in the household
Age	age of household head (in years).
Employed	employment status of the household head(empl = 1 and unempl= 0)
Married	marital status of the household head (marr = 1 and not mar = 0)
Female	gender of the household head (male = 1 and female = 0)
Coloured	Race of the household head (Coloured = 1 and 0 otherwise)

Indian	Race of the household head (Indian = 1 and 0 otherwise)
White	Race of the household head (White = 1 and 0 otherwise)
Urban	household in Urban area (1/0)
Farms	household in farming areas (1/0)
Eastern Cape	household in Eastern cape (1/0)
Northern Cape	household in Northern Cape (1/0)
Free State	household in Free State (1/0)
KwaZulu-Natal	household in KwaZulu-Natal (1/0)
North West	household in North West (1/0)
Gauteng	household in Gauteng (1/0)
Mpumalanga	household in Mpumalanga (1/0)
Limpopo	household in Limpopo (1/0)
Primary	Head of household with Matric (1/0)
Secondary	Head of household with secondary education(1/0)
Tertiary	Head of household with tertiary education(1/0)

4. Methodology

This section describes the method used to evaluate the effect of the Child Support Grant on child hunger and grade repetition in South Africa. Evaluating the impact of a program like the Child Support Grant can be extremely challenging if there is no good comparison group. When programs have experimental designs in which treatment (children receiving the Child Support grant in this case) and control groups (children not receiving the Child Support Grant in this case) are randomly assigned, we can safely assume that the main difference between the treatment group and the control group is due to the program. However, such evaluations are difficult to undertake which force researchers to use the propensity score method, defined as the conditional probability of being treated given the covariates. This method accounts for non-random selection and match each treated observation (children receiving the Child Support grant) with a similar control observation (children not receiving the Child Support grant) on the basis of their propensity scores. This in turn enables the researcher to interpret the outcome of the control observation as the counterfactual outcome of the treated observation in the absence of treatment

We adopt a three-step estimation procedure to investigate the effect of the Child Support Grant on child hunger and grade repetition. In the first step, we estimate a logit model. Drawing on previous literature, we carefully select sociodemographic determinants of child hunger and child repetition. These include age of the head of household, household income and household size, gender of the household head. The results based on the logit model are presented in appendix (Table A.1). In the second step, the estimates of the logit model are used to compute the propensity score, based on the probability of receiving the Child Support Grant. In the third step, the propensity score derived from the logit model is used to match the receiving households with non-receiving households.

Table A.2 (see appendix) presents the results of the t-test for differences between the receiving households and non-receiving households within the common support region. It is clear from the table that the common support assumption was fulfilled because observations in both groups (the receiving households with non-receiving households) are very similar and no systematic differences is observed.

According to the tests, it can be reasonably argued that the balancing property was achieved and that potential selection bias has been systematically reduced. A look at the difference in means suggest that the socio-economic characteristics are most statistically insignificant.

The propensity score index is defined as the probability of receiving treatment conditional on observed covariates X:

$$\mathbf{P(X) = Pr(D = 1 \mid X)} \quad \textbf{(1)}$$

Where P(X) is the abbreviation for propensity score
Pr is a probability,
D=1 indicates exposure to the treatment,
the "|" symbol stands for conditional on,
and X is a set of observed covariates.

One of the important caveats for using the PSM is that it relies on rather restrictive assumption. More specifically, it assumes that the outcomes are independent of program participation conditional on a particular set of observable characteristics – after controlling for X, the treatment assignment is "as good as random". This is commonly referred to as the conditional independence assumption or the assumption of selection on observables (Rosenbaum and Rubin (1983); Heckman and Robb (1985)).

$$\mathbf{Y^0, Y^1 \perp D \mid X} \quad \textbf{(2)}$$

Where: the symbol ⊥ denotes independence and
D=1 indicates exposure to the treatment,
the "|" symbol stands for conditional on,
X is a set of observed covariates and Y^0 and Y^1 are potential outcomes

Since estimates are sometimes sensitive to the choice of matching technique, we implement two frequently used approaches. We consider nearest neighbour matching (NNM) and kernel-based matching (KBM). With nearest neighbour matching, each member of the treatment group is matched to a non-treated unit using the closest propensity score. Whilst the kernel-based matching the propensity score of each treated unit is matched with the kernel weighted average outcome of all non-treated units. Some researchers (see Ravallion (2005)) insist that the property of balancing distribution of observable covariates between the treated and control groups should be fulfilled. This is important, particularly if the assignment of treatment is not randomized. We use the pstest command for this. The results in Table A2 show that the balancing requirements were satisfied.

5. Results

Before we proceed to presenting empirical results, we provide a descriptive analysis indicating how child hunger and grade repetition is distributed across South Africa by race. Table 1 shows child hunger by race in 2008. Perhaps unsurprisingly, African children are over-represented among those affected by hunger. The incidence of hunger experienced by African children is reported as roughly more than two times as large as that for Coloured group and exceeds that of whites by several times.

Table 2: Child hunger by race in South Africa, 2008

Race	Child hunger
African	31.26
Coloured	13.71
Asian/Indian	16.47
White	2.90

Source: Own calculations using NIDS data

A similar pattern is observed with grade repetition by race. In 2008, African learners were more vulnerable to grade repetition (43 percent), a higher percentage than the percentages for White, Coloured, or Indian learners. The percentages of Coloured learners (22 percent) who had been retained in a grade were higher than the percentages of White (7 percent) and Asian (3 percent) students who had been retained.

Table 3: grade repetition by race in South Africa, 2008

Race	Grade repetition
African	43.42
Coloured	22.58
Asian/Ind	3.14
White	7.36

Source: Own calculations using NIDS data

Table 4 and 5 present the matching estimates of the impact of the child Support Grant on child hunger in South Africa for the nearest neighbour matching and kernel-based matching estimators described above. Although the effect of the Child Support Grant is negative across estimators (nearest neighbour matching and kernel-based matching estimators), it is statistically insignificant. The estimate of the difference in reduction in hunger between those who are receiving and the non-recipients is fairly consistent across the matching methods, ranging from 1.1 to 2.4 percentage points. This finding is similar to what has been documented in previous South African studies (see Samson et al 2008).

Table 4: Average treatment effect of the Child Support Grant on child hunger in SA, 2008

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
Nearest neighbour matching						
Child hunger	Unmatched	0.37557	0.28235	0.09321	0.01708948	5.45
	ATT	0.37557	0.38688	-0.0113	0.030894017	-0.37

Table 5: Average treatment effect of the Child Support Grant on child hunger in SA, 2008

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
Kernel-based matching						
Child hunger	Unmatched	0.37557	0.28235	0.09321	0.01709	5.45
	ATT	0.37557	0.39985	-0.0243	0.02331	-1.04

Table 6 and 7 present the estimate of the impacts of the Child Support Grant on the academic performance – measured by grade repetition, using the estimated propensity score and the two matching methods (nearest neighbour matching and kernel-based) described above . Using the nearest neighbour method, the results in Table 6 show no statistically significant impact of the Child Support Grant on grade repetition. For the robustness check of this result, we used the kernel-based matching method. Consistent with the nearest neighbour matching method estimate, the impact of the Child Support Grant estimates in Table 7 yield no statistically significant impact of the Child Support Grant on grade repetition. Our results are inconsistent with the results of existing studies (see Heinrich (2005) and Behrman, Sengupta and Todd (2005)) that find that Conditional cash transfers significantly reduce grade repetition. As noted in the previous section, it is possible that Conditional cash transfers have a bigger impact simply because of their design features (monitored and enforced).

Table 6: Average treatment effect of Child Support Grant on grade repetition in SA, 2008

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
Nearest neighbour matching						
Grade repetition	Unmatched	0.54478	0.51789	0.02689	0.04788	0.56
	ATT	0.54478	0.5597	-0.0149	0.09225	-0.16

Table 7: Average treatment effect of the Child Support Grant on grade repetition in SA, 2008

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
Kernel-based matching						
Grade repetition	Unmatched	0.54478	0.51789	0.02689	0.04788	0.56
	ATT	0.54478	0.58327	-0.0385	0.07316	-0.53

6. Conclusions

Child Support Grant (an unconditional transfer which provides cash to poverty-stricken households in order to alleviate poverty) remains an important instrument of social protection in South Africa, reaching millions of South African children every month. It is a good example of firming government's capacity to redistribute resources to those who are most in need. There is also growing evidence suggesting that there are many poor households who benefit from it, and that it substantially covers basic needs that otherwise would go unmet.

While various studies assessing the impact of the Child Support Grant have shown positive results on several dimensions of socioeconomic well-being, their effects on grade repetition and child hunger has not been as extensively examined in South Africa. This paper contributed to the body of work on the impact of Child Support Grant by using the South Africa National Income Dynamics Study (NIDS) data set for the 2008 wave and by focusing on the effect of the Child Support Grant on child hunger and grade repetition in South Africa.

We adopt the propensity score matching method to address the problems of selectivity. The results do not suggest any impacts: Child Support Grant estimates yield no statistically significant impact on grade repetition and child hunger. This result is important as it suggest that Child Support Grant are only a small part of necessary changes to improve social protection programs in South Africa which are aimed at eradicating extreme poverty and other related challenges. Thus there is need for the Child Support Grant to be interrelated with other reforms if governments really want to address other socio-economic challenges (child hunger and grade repetition).

APPENDIX

Table A1: Estimation of the propensity scores, logit model estimating the probability of receiving Child Support Grant in South Africa, 2008

CSG	Coefficient	SE
Urban	-0.31302***	0.128353
Farms	-0.06316	0.185679
Primary	0.20504	0.129131
Secondary	0.28115	0.15222
Matric	-0.09567	0.208194
Tertiary	-0.37892	0.3183
HHHgender	3.497936***	0.176054
HHHage	-0.0505***	0.003891
Eastern Cape	0.735253***	0.230653
Northern Cape	0.140836	0.235449
Free State	0.423383	0.262333
KwaZulu-Natal	0.532154***	0.230785
North West	0.524002	0.2737

Gauteng	0.54161**	0.252569
Mpumalanga	0.594578**	0.264891
Limpopo	0.249654	0.258743
hhsizer	0.030226	0.018728
HHHunempl	0.478649***	0.132587
HHHmarried	-0.01599	0.116548
IncomePC	-0.00074***	0.000107
Coloured	-0.06708	0.196595
Asian/Indian	-0.76174	0.848505

Notes: Standard Errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A2: Covariate balance check and absolute bias reduction

Mean	t-test		V(T)/			
Variable	Treated	Control	%bias	t	p>t	V(C)
Urban	.41968	.44616	-5.3	-1.12	0.261	.
Farms	.07579	.07958	-1.3	-0.30	0.766	.
Primary	.35633	.35114	1.1	0.23	0.819	.
Secondary	.34502	.34705	-0.4	-0.09	0.929	.
Matric	.09729	.10901	-3.8	-0.81	0.418	.
Tertiary	.02262	.02391	-0.6	-0.18	0.858	.
HHgender	.95475	.94625	2.2	0.82	0.410	.
HHage	43.734	42.992	5	1.09	0.274	0.83*
Eastern Cape	.1776	.19548	-4.9	-0.96	0.335	.
Northern Cape	.06335	.05921	1.6	0.36	0.717	.
Free State	.06674	.06179	2	0.42	0.671	.
KwaZulu-Natal	.28733	.26145	5.9	1.22	0.223	.
North West	.06787	.06657	0.5	0.11	0.913	.
Gauteng	.08484	.09147	-2.3	-0.49	0.623	.
Mpumalanga	.07692	.0701	2.6	0.55	0.583	.
Limpopo	.10747	.11133	-1.3	-0.26	0.795	.
HHsizer	4.7896	4.6524	5.4	1.11	0.266	0.87*
HHunempl	.21946	.2057	3.9	0.71	0.480	.
HHmarried	.20362	.21542	-2.6	-0.61	0.542	.
IncomePC	448.99	476.86	-1.5	-0.87	0.383	0.36*
Coloured	.0905	.0933	-0.8	-0.20	0.838	.
Asian/Indian	.00226	.00214	0.1	0.06	0.955	.

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