Business Administration and Economics

Overview on University Third Mission Assessment. Case Study in Romania

Maria Popescu[1]**, Lidia Mandru**[2]

Abstract: This work paper is focused on the evaluation of university engagement in innovation (the third mission of university), and aims to establish the main directions for improving the current systems used to evaluate this university function in Romanian Higher Education. In the first part of the paper a general overview on models and indicators for evaluation of university third mission is presented. The second part briefly describes how university participation in innovation is assessed in Romania. Final conclusions summarize the previous analysis, and point out some recommendations of improvement. The novelty of the study consists in the complex analysis of the models used for the assessment of university third mission. The overview is based on methodologies presented in official publications and other studies related to the assessment of the universities' engagement in innovation.

Keywords: university participation in innovation; Technology Transfer/Knowledge Transfer; assessment models

JEL Classification: O30; O32

1. Introduction

Nowadays, within a society characterized by fierce competition and high pace of change, the participation of universities in innovation has become increasingly important for the socio-economic development. This engagement is associated to a new role of modern university, namely the "third mission" of the university, which is adding to education (first mission) and research (the second mission) (Trencher et al, 2014; Piirainen et al, 2016). In essence, the third function of the university refers to the university's involvement in innovation, and includes activities aiming to exploit knowledge nd other academic capacities outside the academic environment. This new thesis related to the university third mission was formally introduced in Higher Education (HE) policies in many countries especially after 2000, and underlines that universities are demanded not only to play an active role in education

[1] Professor, PhD, Transilvania University, Romania, Address: 1 Colina Universitatii Street, Building A, Brasov, Romania, Tel: +40 268 419304, Corresponding author: mariapopescu@unitbv.ro.
[2] Lecturer, PhD, Transilvania University, Romania, Address: 1 Colina Universitatii Street, Building A, Brasov, Romania, Tel: +40 268 419304, E-mail: lidia.mandru@unitbv.ro.

and research, but also to increasingly transfer their knowledge to society (Sánchez-Barrioluengo, 2014; Veugelers & Del Rey, 2014; Fornasari et al, 2016; Rubens et al, 2017).

The topics of university third mission are complex and represent the subject of numerous studies. Present work paper is focused on the assessment of university engagement in innovation and aims to establish the main directions of action for improving the current evaluation systems applied in Romanian HE. The specific objectives of the study are: 1) general presentation of the key aspects of the evaluation of universities' third mission activities, models and indicators used in various countries; 2) brief description of the evaluation models used in Romania. Finally, a summary of the main ideas is presented, accompanied by recommendations for improvement.

Study below is based on applied or proposed methodologies presented in official publications, reports and other documents related to the assessment of the universities' participation in innovation, considering technologic transfer, knowledge transfer and entrepreneurial activities.

2. General Overview on Models and Indicators for University Third Mission Assessment

Evaluation of the universities' participation in innovation is done at several levels: institutional, national and regional. The purpose of these actions is to obtain information for measuring the degree of university commitment in innovation, comparing it with other universities in the country and abroad, and substantiating the decisions to improve universities' performances. At the university level, the results of the evaluation are the basis of their own strategies and policies, which create the framework for improving the university's third mission related activities and performances. National governments can also strengthen the innovation-related activities and economic impact of universities through the development of national infrastructure of innovation, inclusion of innovation performance parameters in performance based funding systems, and other specific regulations.

Involvement of universities in innovation was initially linked to the indirect transfer of knowledge through scientific publications and the skills of graduates. Peer review was generally considered as the main instrument for research evaluation, and also metrics such as journals' impact as well as other bibliometric indices based on citations. Subsequently, the direct transfer of the results from academic research into the economy and society, known as technology transfer (TT), was emphasized. New TT evaluation indicators were introduced, concerning: contract-based projects and joint projects with companies, commercialization of intellectual property titles, creation of new companies for valorization of research results, consulting and other services related to introducing the new into society.

USA was the first country that surveyed and published annual data on university TT through the Association of University Technology Managers (AUTM) starting in 1993 (Pressman et al, 2017). The AUTM mainly focuses on technology commercialization activities, addressed to about 200 research universities, and aims a better allocation of federal research & development funds. Statistics Canada has also surveyed the intellectual property commercialization in HE sector since 1998, from all the members of Association of Universities and Colleges of Canada, as well as university-affiliated research hospitals (Langford, 2002). Starting with the late 1990s, the AUTM's survey on licensing activities in Canadian research institutions has been performed, focusing on Canada's 15 largest intensive research universities and also upon a number of less prominent universities. Similar systems of university TT indicators are used more or less systematically in other countries, e.g.: Norway - from 1998, France - 2000, Denmark - 2000, Spain – 2003 etc. (European Commission, 2009).

According to Langford (2002), the TT based approach of university engagement in innovation appears to be "the linear model of innovation" and nowadays is unsatisfactory. In the last two decades, the evolution was in the sense of expanding areas of activities through which universities interact with society, and cohesive, expanding associated indicators. As Molas-Gallart et al (2002) show, university innovation activities are not limited to commercial activities and their measuring needs a broader approach that examines the main channels that connect universities with the rest of society. Thereat, the collocation of knowledge transfer (KT) is increasingly used, and it better reflects the essence of university third function.

Several studies have focused on the measurement of university KT activities, most important being those elaborated by organizations like SPRU (Science Policy Research Unit – an informal grouping of UK universities), UNICO (University Companies Association – a TT association of UK universities), KCA (Knowledge Commercialization Australasia – a non-profit organization for technology/knowledge transfer/exchange practitioners in Australia and New Zealand), and JRC (Joint Research Centre - European Commission hub that supports EU policies). The reports developed by these specialised organizations present the assessment models of universities' Third Mission activity. The synthesis in Table 1 shows that these patterns are different in terms of the activities under consideration, the evaluation criteria and the indicators. For example, the report of SPRU identified 65 potential indicators grouped in 12 different classes (Molas-Gallart et al, 2002); UNICO Report proposes a KT evaluation model with nine areas, of which six specific to TT, and the rest related to human capital (Holi et al, 2008). The same model is recommended by KCA (Jenson et al, 2009).

Table 1. Models for Measuring Third Stream/Mission Activities of Universities

Name	Dimensions/No of activity types/No of indicators
SPRU Report: Final Report to the Russel Grup of Universities	5 Dimensions: 12 types of activities/65 indicators
	1) Knowledge capabilities: Technology commercialization; Entrepreneurial activities; Advisory work and contracts;
	2) Facilities: Commercialization of facilities
	3) Research: Contract research; collaboration in research; staff flow
	4) Teaching: Student placement; learning activities; curriculum alignment
	5)Communication: Social networking; nonacademic dissemination
UNICO Report: Metrics for the Evaluation of Knowledge Transfer Activities at Universities	9 types of activities
	Networks; Continuing Professional Development; Consultancy; Collaboration in Research; Contract Research; Licensing; Spin-Outs; Teaching; Other measures.
JRC Report: Assessment of Regional Innovation Impact for Universities	4 Dimensions
	1) Education and human capital development;
	2) Research, technological development, KT and commercialization;
	3) Entrepreneurship and support for enterprise development;
	4) Regional orientation, strategic development and knowledge infrastructure.

Although they are different, all models mentioned above include as distinct domain the direct transfer of academic research results, but also internal and external educational activities that directly support the development of human capital involved in innovation processes. As a novelty aspect, in the JRC model an extended assessment is achieved, considering “Regional orientation, strategic development and knowledge infrastructure” (Jonkers et al, 2018). In this classification, entrepreneurship is also defined as a distinct category, which refers to creating new companies, respectively consulting and other support activities for the new businesses developed by specific TT structures. These activities are found in the other evaluation models too, but without being defined as distinct category.

An aspect to be stressed is the close link between indicators on university engagement in innovation and education and research activities. The complex relationships between the three functions of the university require that their assessment be harmonized to avoid confusion and redundancy. In this regard, the following examples are suggestive: as a rule, the number of publications made by members of the academic community is included in the research evaluation, but the dissemination of new ideas also contributes to economic and social development; life-long learning and entrepreneurial programs unrolled in universities are typically included in the evaluation of educational activity, but they also represent actions to increase the innovation potential of society through the development of human capital.

The emergence of the models for university KT assessment is related to the programs launched in UK Higher Education to develop funding mechanisms based on engagement in innovation performance. According to Watson & Hall (2015), UK universities, especially research-intensive universities members of Russell Group, are reviewing their mission to embrace and elevate third stream activities in order to gain competitive advantages. This trend has resulted in some universities whose performance is recognized through evaluations performed by accredited bodies. The Russell Group's first report on the impact of research upon economy (2012) explores the broader impacts of world-class research, including impacts on society, health, environment, policy and culture. A similar model was adopted in Australia (Jensen et al, 2009). In European Union countries, there are not generally implemented national tools for university KT evaluation. A methodology, known as E3M, was developed within a project funded by the European Commission during 2009-2012, but it was only experimentally applied during that project (Carrión et al, 2012; Green paper, 2018). More recently, the model for assessment of regional innovation impact for universities (JRC model) has been developed under the aegis of the European Commission. As its authors state, "this model may be used by universities, national or regional governments to assess the contribution of universities to the innovation performance of the system in which they operate" (Jonkers et al, 2018). In USA, KT and regional impact of innovation are topics of interest to many research universities that carry out impact assessment with the support of nationally recognized consulting organizations (e.g.: University of Washington, 2014, Boston University, 2015; University of Missouri, 2017 etc.), but there is no unique methodology.

Discussions on assessment models for the university third mission were focused not only on the activities taken into account, but also on the establishment of the key performance indicators. The evaluation models of innovation include indicators that generally are grouped into four categories: input, process, output and outcome (impact) indicators. The scheme shown in Fig. 1 (adaptation from Tabas et al, 2012), without being complete, details the four categories of indicators for universities' Third Mission.

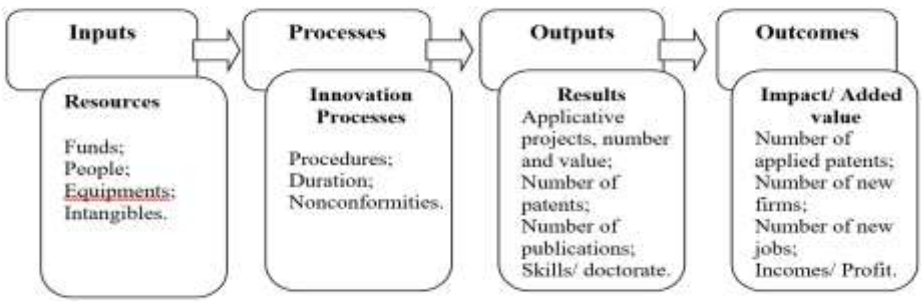


Figure 1. Typology of Innovation Measurement Indicators

From the perspective of the indicators used, an important change in evaluation models was the measurement of the university's impact on society using outcome indicators. According to Langford (2002), a framework for assessment developed on the basis of outcomes is the most useful to appreciate the role of universities in the innovation system. In this regard, Luoma et al (Seppo & Lillle, 2011) state that the innovation impact should be measured in the areas of economic, knowledge, education and culture, environment, and well-being.

Another change related to the indicators' system of university Third Mission is the introduction of qualitative indicators. Significant from this point of view are the proposals made for the tool to measure the engagement in innovation of UK universities, which includes specific metrics to assess both the quantity and the quality of nine different facets of KT (Holi et al., 2008). For instance, in licensing - one of the key mechanisms of university KT, the number of licenses and the income generated from these licenses are quantitative indicators; in addition, qualitative indicators, such customer feedback, case studies (licensing success stories) and repeat business have been proposed. Similarly qualitative indicators are included in the JRC model (Jonkers et al, 2018).

Generally, the models presented above make it possible to measure university participation in innovation through systems of indicators, without aggregating them into a single indicator. Composite indicators are commonly used in university hierarchy models. In EU, 33 countries have some form of ranking system, operated by government and accreditation agencies, HE, research and commercial organizations, or media (European Commission, 2010).

According to Vernon et al (2018), global rankings focus mainly on research intensity, other aspects of HE, such as teaching and learning, community engagement and innovation being ignored. The authors appreciate that current indicators are inadequate to accurately evaluate research outcomes and suggest that future research evaluate three dimensions of research outcomes: scientific impact, economic outcomes, and public health impact for evaluating research performance within an academic institutional environment. In response to the various global rankings, a new U-Multirank model was introduced by the European Commission in 2014, to easily compare universities' performance according to five dimensions: research performance, teaching and learning, KT, international orientation, and regional engagement. This model uses more than 35 indicators on the basis of which universities are graded on five levels (European Commission, 2017).

In addition to global evaluation based on university hierarchy models, aggregate indicators specific to assessing university performance on Third Mission are less used. The best known are presented below. The Thomson-Reuters utilizes a specific set of criteria for ranking universities' engagement in innovation, based on data compiled by several of its research platforms, focusing on academic papers and patents (Reuters, 2018). In USA, University TT and Commercialization Index is systematically used at national level, in order to support adoption of policies that should incentivize the implementation of commercialization best practices in public universities. The Index is measured using four-year averages for four key indicators of TT success: patents issued, licenses issued, licensing income, and start-ups formed (DeVol et al, 2017). Another model was adopted in Turkey, country where a systematic evaluation based on Entrepreneurial and Innovative University Index is performed and announced to the public every year since 2012 (Aslan, 2016). This assessment model is based on data related to: number of firms established by academicians; number of firms established by students/graduated students; employment in those firms; TTO activities; patents; licenses; R&D and innovation projects; entrepreneurship, innovation lessons/trainings.

Among the new approaches to the evaluation of universities participation in innovation, there are also assessment models centered on the innovation management system. A comprehensive model of assessing university-business enterprise cooperation was proposed by European University Association (EUA) (Damian et al, 2014). This model encompasses a wide range of factors that manifest in different stages of university-business research collaborations, being organized in four main areas: strategic approaches; structural factors; facilitating aspects for successful university-business collaborative research; goals, outcomes and benefits of university-business collaborative research. Applied at institutional level, this holistic approach addresses both the outcomes of university-business collaboration and the factors that determine them. Another wide model, entitled "Guiding Framework for Entrepreneurial Universities", was elaborated under the aegis of the European Commission in collaboration with the OECD (2012). As the Guide's authors' state, it represents a self-assessment tool, helping universities to evaluate their current situation on entrepreneurship and to identify potential areas of improvement. The model includes seven areas: Leadership and Governance; Organizational Capacity, People and Incentives; Entrepreneurial Development through Teaching and Learning; Pathways for Entrepreneurs; Business or External Relationships for Knowledge Exchange; Internationalization; Measuring the Impact of the Entrepreneurial University. There are set analysis criteria for each area, evaluation being done on a scale of 1 to 10. It is to note the extension of this model application in the European countries and in other parts of the globe (https://heinnovate.eu).

From the previous analysis of the way in which the university third mission assessment is carried out over the world, the following conclusions are drawn:

- The increasing awareness about the university innovation and TT has led to many different answers in Europe and beyond. Elaboration of regular reports on innovation both at university and national level, and the open access to the data as a basis for permanent monitoring of the innovation performance are of major importance;

- In the world, the systematic evaluation of university participation in innovation is integrated into the ranking processes of universities, but there is a growing emphasis on the distinct assessment of university TT, KT and entrepreneurship, on the basis of specific models. None of these assessments have unique models;
- Regarding the specific models for these evaluations, the most widespread is the US' evaluation model, focused on the measurement of TT results, but more complete is the model used in UK, which involves a more complex system of indicators, quantitative and qualitative. Differences between the structures involved in this process also exist. Few countries make a systematic assessment of engagement in innovation performance of universities using composite indicators;
- As specialists state, it cannot be a single model of evaluation, but a system of different evaluations in relation to the aimed level and purpose (official reporting, HR individual results and stimulation, regional impact, etc.). In this regard, the specialists consider that the coexistence of different models to assess university research and engagement in innovation is not only inevitable, but healthy (Guthrie et al, 2017).

3. Current State of University Third Mission Assessment in Romania

Currently, in Romania there is no systematic evaluation of the TT/KT and entrepreneurship in universities at national level. The evaluation of these activities is found in specific forms in more complex assessment processes, whose objectives and methodologies are briefly presented below.

Actions in this regard are primarily related to funding mechanisms, which are considered important tools in shaping the quantity and quality of HE outcomes and promoting competition. The funding methodology of the Romanian universities provides a basic financing and, in addition, allocation of supplementary funds, aiming to stimulate the excellence of institutions and study programs, both within public and private universities. The allocation of additional funds is based on quality criteria and standards set by the National Higher Education Financing Council (CNFIS) and approved by the Romanian Ministry of Education (RME). These tools are continuously adjusted. Nowadays, according to the current Ministry order (RME, 2018), additional funds represent at least 30% of the national allocation to public universities as basic funding. 40% of additional funding is granted in relation to the performance of scientific research/ artistic creation/ sport performance. The evaluation of performances is based on a complex algorithm, taking into account several indicators: the Hirsch index and the publication of ISI, ERIH indexed articles/papers, patents and artistic creation projects; the sum of funds gained from research projects; events, festivals and competitions organized at national and international level specific to each artistic field.

The development of the financing mechanisms is in connection with the movement for quality in education, of which beginning in Romania can be considered the year 2005, when was developed the legislative framework of the systematic approach of the quality in education (the Law on the quality in education) and there were created national structures for co-ordination of quality assurance and evaluation in education (e.g. the Romanian Agency for Quality Assurance in Higher Education, ARACIS). ARACIS has developed the methodologies for quality assessment which defines the criteria, standards and performance indicators for the quality assurance and accreditation of HE institutions and program studies. Quality standards are formulated in terms of rules, criteria and outcomes, and define the minimum mandatory level of performance of the activity to which they refer. One of the criteria concerns the scientific research activity and it is evaluated by indicators that reflect not only the results, but also the research related processes and resources (ARACIS Methodology). The assessment of institutional quality in HE is done periodically (internal evaluation is done annually, and external evaluation at 5 years), and aims at verifying the fulfillment of minimum requirements and standards, but it does not serve to the measurement of performances and the ranking of universities.

A more rigorous evaluation of performance in academic research and innovation is foreseen in the ranking methodology of Romanian universities. The first official hierarchy of universities was conducted in 2011 under RME, but the results were not validated. Currently, a ranking methodology is being developed for a periodic evaluation of universities at each 5 years, according to the provisions of the National Education Law (World Bank Group of Romania, 2018). The proposed methodology is structured on three levels. The first level aims at grouping units on nine different "types": Humboldt universities; art and vocational colleges; complex universities; polytechnic universities; universities of medicine and pharmacy; universities of agronomy and veterinary medicine; military universities; economics and administration universities; universities of theology. The second level differentiates these types of universities into "classes" depending on their orientation towards education (A), education and research and/ or artistic creation (B), research (C). Within the third level, these different types of universities are classified according to six dimensions based on their respective indicators. The six dimensions are the following: education, research, internationalization, regional and social involvement, knowledge transfer, and student profile. Aspects related to the so-called "third university mission"- on information sharing and productive interactions with business, public sector organizations and the community in general - are presented here in three different dimensions for clearer identification of its components. For each of these dimensions specific indicators are defined. For instance, indicators corresponding to the KT dimension include: patents/ total number of teachers; new start-ups and spin-offs/total number of teachers; university revenue generated from patents, licenses, copyrights, new businesses and consulting work; expenditure on KT activities as a percentage of total university expenditure; the presence in the traditional media and social media of information on the knowledge generated by the institution and on the transfer process between university and society.

Finally, it can be note the Romania's enrollment in the HEInnovate exercise initiated by the OECD and the European Commission, under the coordination of RME. The program started in 2018 and is based on the Guiding Framework for Entrepreneurial Universities (EC&OECD, 2012), which involves the systematic evaluation of the potential and outcomes of university KT and entrepreneurship.

It is also to note that, at the university level, there is information related on participation in innovation on their own websites: analytical results from innovation are published on research-related page or distinct, respectively on the various mandatory synthesis reports (Rector Report, Research Report, and Reports of Institutional Quality).

The previous analysis of the way in which the university third mission assessment is carried out in Romania shows that the systematic assessment of university engagement in innovation is performed in order to provide information for the evaluation of institutional quality and for the allocation of funds from the budget, but the tools used do not provide relevant information for substantiating the strategic decisions on innovation at national and institutional level.

4. Conclusions

The previous presentation shows that nowadays there is no unique system for assessing the universities performance on engagement in innovation. Evaluation systems in various countries are different not only in terms of the model used, but also in the frequency of evaluation and the structures involved. This diversity makes it difficult to compare the third mission related performance of universities in different countries, being necessary to harmonize the models. But harmonization does not mean uniformity. Specialists underline the need to design flexible and multidimensional methodologies that will adapt to the diverse and complex nature of research, disciplines and other particularities of universities.

In Romania, the current evaluation methodologies do not end by synthesis situations at national level regarding the universities performances on third function. Universities are sharing information about their engagement in innovation on their own websites, but the published documents do not highlight the competitive position and the dynamics of innovation performance, and in many cases they are incomplete.

Given this situation, it is necessary to implement in Romania distinctive evaluation systems that will allow the assessment of the competitive position and performance dynamics of KT and entrepreneurship in universities. It is a commendable decision the implementation in Romanian HE of the Guiding Framework for Entrepreneurial Universities, but also the model proposed by the EUA for assessing university-business cooperation could be a benchmark. These models provide a framework for a holistic approach considering both the outcomes of university engagement in innovation and the factors that determine them.

Systematical assessing of university Third Mission in Romania based on specific models does not exclude the implementation of the MEN’s procedure for universities’ ranking. The ranking of universities allows the establishment of different innovation indicators adapted to the particularities of the types and classes of universities. The indicator system must be also continually adapted to the strategies and policies adopted by the governors and university management.

Elaboration of regular reports on the engagement in innovation, both at university and national level, and the open access to the data as a basis for permanent monitoring of the innovation performance are of major importance.

5. References

Aslan, Y. (2016). *A Novel Index for Knowledge Triangle: The Entrepreneurial and Innovative University Index of Turkey*, Paris: OECD.

Boston University (2017). *The Economic and Community Impact of Boston University, Fiscal Year 2015*. Retrieved from https://www.bu.edu/oir/files/2017/05/Final-BU-Economic-Impact-Report-5_15_17.pdf, date: 19.07.2018.

Carrion, A.; García-Gutiérrez, V.R.; Bas, M.C. & Carot, J.M. (2012). A New Methodology for Measuring Third Mission Activities of Universities. *Proceedings of 6th International Technology, Education and Development Conference INTED 2012*, pp. 1218-1223. Valencia, March. Spain: IATED. Retrieved from http://apps.webofknowledge.com, date: 20.07.2018.

Damian, L.B.; Morais, R. & Smith, H.J. (2014). *University-Business Collaborative Research: Goals, Outcomes and New Assessment Tools*, Belgium: EUA Publications.

DeVol, R.; Lee, J. & Ratnatunga, M. (2017). *Concept to Commercialization: The Best Universities for Technology Transfer*. USA: Milken Institute.

European Commission (2009). *Metrics for Knowledge Transfer from Public Research Organisations in Europe*. Report from the European Commission’s Experts Group on Knowledge Transfer Metrics. Brussels, pp.1-79.

European Commission (2010). *Assessing Europe’s University-Based Research*. Expert Group on Assessment of University-Based Research, Luxembourg: Publications Office of the European Union.

European Commission (2015). *U-Multirank, Implementation of a user-driven, multi-dimensional and international ranking of higher education institutions*. Luxembourg: Publications Office of the European Union.

European Commission and OECD (2012). *A Guiding Framework for Entrepreneurial Universities*. Retrieved from https://www.oecd.org/site/cfecpr/EC-OECD%20Entrepreneurial%20Universities%20Framework.pdf, date: 20.12.2018.

Fornasari, A. (2016), The Role of Universities' Third Mission in a Globalized Word: Continuing Education, Social Engagement, Technology Transfer to Relate Science and Society. An International Case Study: If4tm Project. *Proceedings Paper, 9th Annual International Conference of Education, Research and Innovation (ICERI)*, pp. 4373-4379. Seville, Spain, Retrieved from http://apps.webofknowledge.com, date: 19.03.2018.

Government of Romania (2018). Decision no. 915/2017 amending the annex to the Government Decision No. 1.418/2006 for the approval of the External Evaluation Methodology, the standards, the reference standards and the list of performance indicators of the Romanian Agency for Quality Assurance in Higher Education. Published in the *Official Monitor*, No. 25/11 January 2018.

Green Paper (2018). *Fostering and Measuring "Third Mission" in Higher Education Institutions,* Project nr: 2008-3599/001 – 001, LifeLong Learning Program. Retrieved from http://www.e3mproject.eu/Green%20paper-p.pdf, date: 25.07.2018.

Guthrie, J.; Evans, E. & Burritt, R. (2017). Improving Collaboration and Innovation between Industry and Business Schools in Australia. *Academic Leadership Series*, Volume 8, pp. 9-26.

Holi, M.; Wickramasinghe, R. & van Leeuwen, M. (2008). *Metrics for the Evaluation of Knowledge Transfer Activities at Universities*. Cambridge: Library House, a Report Commissioned by UNICO.

Jensen, H.P.; Palangkaraya, A. & Webster, E. (2009). *A Guide to Metrics on Knowledge Transfer from Universities to Businesses and Industry in Australia*. Australia: Intellectual Property Research Institute of Australia.

Jonkers, K. et al. (2018). *A Regional Innovation Impact Assessment Framework for Universities*. JRC Discussion Paper. Brussels: Joint Research Centre.

Langford, G. (2002). *Measuring the Impact of University Research on Innovation*. Retrieved from http://sites.utoronto.ca/isrn/publications/WorkingPapers/Working00/Langford00_Measuring.pdf, date: 20.07.2018.

Molas-Gallart et al. (2002). *Measuring Third Stream Activities*. Final Report to the Russell Group Universities. SPRU, United Kingdom: University of Sussex.

Parliament of Romania (2011). National Education Law No.1/2011. Published in Official Monitoring No.18/ 10.01.2011, with subsequent amendments.

Piirainen, A.K.; Andersen, P.D. & Andersen, A.D. (2016). Foresight and the Third Mission of Universities: The Case for Innovation System Foresight. *Foresight*, Volume 18, Issue 1, pp. 24-40, Emerald Group Ltd. England, Retrieved from http://apps.webofknowledge.com, date: 19.03.2018.

Pressman, L. et al. (2017). *The Economic Contribution of University/Nonprofit Inventions in the United States: 1996-2015*. Biotechnology Industry Organization. Retrieved from https://www.autm.net/AUTMMain/media/Partner-Events/Documents/Economic-_Contribution_University-Nonprofit_Inventions_US_1996-2015_BIO_AUTM.pdf, date: 18.07.2018.

Reuters (2018). *Methodology: Top 100 Innovative Universities|2017*, Retrieved from https://www.reuters.com/innovative-universities-2017/methodology, date: 05.09.2018.

Romanian Ministry of Education (2018). *Order No. 3047/2018 regarding the Methodology for the allocation of budgetary funds for the basic financing and additional financing of the Romanian higher education institutions for the year 2018.* Published in the Official Monitor No. 127/09.02.2018.

Rubens, A.; Spigarelli, F.; Cavicchi, A. & Rinaldi, C. (2017). Universities' Third Mission and the Entrepreneurial University and the Challenges they Bring to Higher Education Institutions**.** *Journal of Enterprising Communities-People and Places of Global Economy*, Volume 11, Issue 3, pp. 354-372, Special Issue: SI, Emerald Group Ltd, Yorkshire, England, DOI: 10.1108/JEC-01-2017-0006, Retrieved from http://apps.webofknowledge.com, date: 19.03.2019.

Russell Group (2012). *The Social Impact of Research Conducted in Russell Group Universities*. Russell Group Papers, Issue 3. Retrieved from https://www.russellgroup.ac.uk/media/5235/socialimpactofresearch.pdf, date: 21.09.2018.

Sánchez-Barrioluengo, M. (2014*).* Articulating the Three-Missions in Spanish Universities. *Research Policy*, Volume 43, Issue 10, pp. 1760-1773. doi:10.1016/j.respol.2014.06.001, Retrieved from http://apps.webofknowledge.com, date: 19.03.2019.

Seppo, M. & Lille, A. (2012). Indicators Measuring University-Industry Cooperation. *Discussions on Estonian Economic Policy*, Vol. 20, Issue 1, pp. 204-225.

Tabas, J.; Beranová, M. & Polák, J. (2012). Evaluation of Innovation Processes. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, Volume LX 69, no 2, pp. 523-532.

Trencher, G.; Yarime, M.; McCormick, K.; Doll, C.; Kraines, S. & Kharrazi, A. (2014). *Beyond the Third Mission: Exploring the Emerging University Function of Co-creation for Sustainability,* Science and Public Policy, Volume 41, Issue 2, pp. 151-179. Oxford University Press, England. Retrieved from http://apps.webofknowledge.com, date: 19.03.2019.

Tripp Umbach (2018). *The Economic and Community Impact of the University of Missouri System*. FY17, Retrieved from https://mospace.umsystem.edu/xmlui/handle/10355/63176, date: 22.07.2018.

University of Washington (2014). *2014 Economic and Community Impact Report of the University of Washington*, Retrieved from http://www.washington.edu/externalaffairs/files/2015/01/14-Economic-Impact-Report.pdf, date: 21.07.2018.

Vernon, M.M.; Balas, E.A. & Momani, S. (2018). Are University Rankings Useful to Improve Research? A Systematic Review. *PLoS ONE Journal*, Volume 13, Issue 3, pp. 1-15.

Veugelers, R. & Del Rey, E. (2014). *The Contribution of Universities to Innovation.* (Regional) Growth and Employment. European Expert Network on Economics of Education (EENEE), European Commission, Analytical Report No. 18.

Watson, D. & Hall, L. (2015) Addressing the Elephant in the Room: Are Universities Committed to the Third Stream Agenda. *International Journal of Academic Research in Management,* Volume 4, Issue 2, pp. 48-76.

World Bank Group of Romania (2018*). Methodology of University Classification - Project for the Classification of Universities in Romania – Proposal*. Retrieved from https://www.utcluj.ro/media/notices/2018/Output_2__Classification_2__May_2018__RO_1.pdf, date: 05.10.2018.

https://heinnovate.eu, date: 05.09.2018.

Military Expenditure and Institutional Quality on Brics Countries Inclusive Growth Based on World Bank Income Classification

Oladotun Larry Anifowose[1]

Abstract: Empirical studies on military expenditure-growth nexus in individual countries and cross-national countries abound, however, to the best knowledge of the authors; there are no studies on the impact of military expenditure and Institutional quality on Inclusive growth. The objective of this paper is to fill the gap by investigate the impact of military expenditure and institutional quality on BRICS inclusive growth from 1984 to 2017. This paper adopted BRICS countries because they account for about 26.11 % of total world military expenditure. Due to the heterogeneous nature of BRICS countries, the countries were grouped into Upper Middle-Income countries and Lower Middle-Income countries using the World Bank Income Classification. In addition, corruption was adopted as the reliable proxy for institutional quality, since corruption is often a symptom of bad institution. The result of the impact of military expenditure and corruption on inclusive growth in the lower middle-income group indicates that military expenditure and corruption have positive and statistically significant effects on inclusive growth while the interactive term has negative and statistically significant effect on inclusive growth. This implies military expenditure reduces inclusive growth in the face of corruption. However, for the upper middle income, military expenditure is negative and significant as against that of lower middle income. Corruption and interactive term have negative effects on inclusive growth but both are statistically insignificant.

Keywords: Military Expenditure; Institution Quality; Inclusive Growth; BRICS countries

JEL Classification: E6; H56; 043

1.1. Introduction

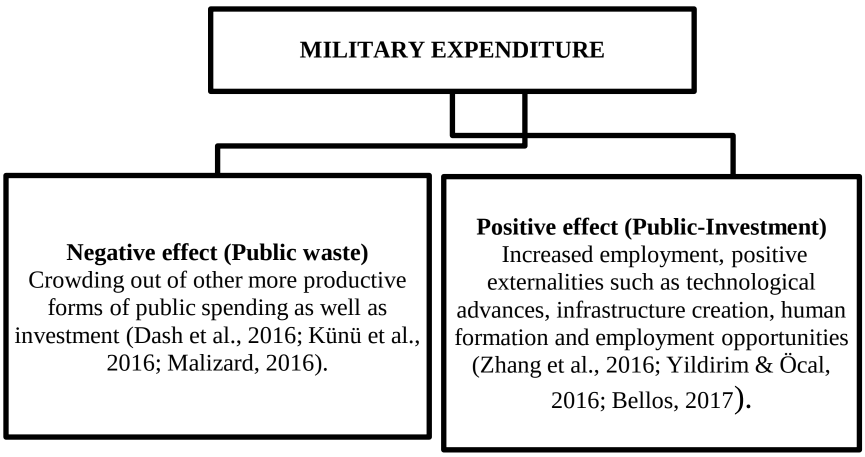
The effect of military expenditure on growth is a longstanding debate in defense economics and peace literatures, dating back to empirical studies by (Benoit, 1973; Benoit, 1978) which argued that military expenditure has a positive impact on economic growth via the provision of the enabling environment (Security) for local and international investment. Furthermore, it contributes to growth via utilization of resources, particularly in employment generation, Research and Development,

[1] School of Accounting, Economics and Finance, University of KwaZulu-Natal, South Africa, Address: 238 Mazisi Kunene Rd, Glenwood, Durban, 4041, South Africa, Corresponding author: anifowosedotun@yahoo.com.

provision of vocational training (Menla Ali & Dimitraki, 2014; Meng et al., 2015; Zhao et al., 2015).

However, recent studies have identified an adverse link between military expenditure and economic growth this happens as it crowd-outs public investment, from productive activities to unproductive ones (Ward & Davis, 1992; Mintz & Stevenson, 1995; Klein, 2004; Kentor & Kick, 2008; Shahbaz & Shabbir, 2012). Therefore, impact of military expenditure on growth is mixed and inconclusive with results depending on the country or sample of countries, the time period or methodology used (Smith, 2000; Dunne et al., 2005; d'Agostino et al., 2017) has presented in Table 1. This subject matter has secured a growing attention adopting a wide–range empirical studies which made use of various methodologies and theoretical frameworks, a consensus has not been reached (Dunne et al., 2005, Alexander, 2015).

Table 1. Different views on Military expenditure



A potential link for this mixture of conclusion is the environment that military expenditure is taking place. For instance, (Aizenman & Glick, 2006, Compton & Paterson, 2016) affirms that high military expenditure in the presence of high threat environment leads to economic growth via the provision of security while high military expenditure in the presence of low threats will retard economic growth via wide spread corruption and rent seeking. (d'Agostino et al., 2012) further examined military expenditure-growth in the presence of corruption using African sample from 2003 to 2007.They found that corruption does influence the impact of military expenditure on growth. In related paper, (d'Agostino et al., 2017) re-examined the military expenditure –growth using 1996-2007 period by employing a System GMM estimation confirms that military expenditure and corruption does retard economic growth.

Recently (Compton & Paterson, 2016) consider how institutions can impact military expenditure-growth nexus. Based on 100 countries of annual data from 1988 to 2010 by employing Panel Ordinary Least Square (OLS) and system-generalized methods of moments (GMM).The authors find that military expenditure on growth is negative or zero at best and this impact is lessened in the presence of good economic and political institutions.

This paper builds on this area of work, by adapting corruption as a reliable proxy for institutional quality, since corruption is a symptom of bad/weak institution. For instance, weak institution stimulate wasteful military expenditure via lack of checks and balances leads to an irrational expenditure decision, which might retard inclusive growth.

Furthermore, the author contribute to this area of research by incorporating a newly-developed BRICS inclusive growth index[1] as proxy for growth while examining the military expenditure–growth nexus under World Bank Income classification. The empirical analysis is based on (Aizenman & Glick, 2006; Compton & Paterson, 2016) works.

The BRICS (Brazil, Russia, India, China and South Africa) countries are referred to as next World economic powerhouse characterized with high-income growth and active military industries. The rationale for investigating the BRICS countries for this study are as follows. One, BRICS countries account for about 26.11% of total world's military expenditure and devotes a huge percentage of their total government expenditure to military expenditure. According to SIPRI (Institute) affirm that average military expenditure share of government expenditure was 4.1% for Brazil, 10.8% for Russia, 10.1% for India, 9.7% for China and 4.7% for South Africa for the period 2000-2014.

Two, the intra-conflict rivalry among BRICS countries also makes this empirical investigation an interesting one to explore. For example, the India conflicts with China has been affirmed; and as two of the world's fast growing powerhouse countries, their relationship synergy plays a significant influence in the political domain. Finally, on a general note, World's military expenditure has declined due to peace dividend however; BRICS countries still assign a high percentage of their Central government budgetary allocation to military sector and industries despite witnessing harsh socio-economic inclusive growth challenges. For instance, BRICS countries are experiencing a downturned GDP growth rates coupled with high unemployment rates, crime rates, high poverty rates, high-income disparity, climate

[1] Presented in the appendix section.

change and a host of others. In Conclusion, military policy can be said to be of great important for the BRICS countries.

1.2. Institutional Failure in BRICS Countries

"If we do not kill corruption, corruption will kill us"

(Anonymously, 2018)

"You thief cent you are in prison;

You thief 10 million this patriotism.

You are given chieftaincy and national honour

You steal even bigger, this is refer to as rumour

(Wole Soyinka, 1985 literature Nobel Prize winner, Unlimited Liability Company, 1983)

Over the past 40 years corruption has become the prism through which BRICS countries is seen the world over. The most recent report (2018) on the Corruption Perception Index (CPI) published by Transparency International (TI) ranks BRICS countries has presented below. The ranking score criteria is as follows 100-50 are referred to less corrupt countries while 49 - 0 are referred to as more corrupt countries.

Table 2. CPI 2018 Ranking score and World Bank Income Classification

S/N	Countries	CPI 2018 Ranking score	2018 World Bank income Classification
1	Brazil	40	Upper Middle income
2	Russia	29	Upper Middle income
3	India	40	Lower Middle income
4	China	40	Upper Middle income
5	South Africa	45	Upper Middle income

Source: Corruption Perception Index (CPI) ranking 2018, World Bank 2018

Therefore, based on the above CPI 2018 rankings score, all BRICS countries are regarded as corrupt countries. However, four out of BRICS club countries are ranked Upper Middle income countries except India according World Bank countries classification has presented above.

1.3. Types of Corruption in BRICS Countries

In the development literature, corruption is typically defined roughly as the abuse of public office or entrusted power for private gain (Bank, 1997; International, 2009). Public office is abused for private gain when an official accepts, solicits, or extorts a bribe, or when private agents actively offer bribes to circumvent public policies and process for competitive advantage and profit. Public office can be abused for personal benefit, even if no bribery occurs, through patronage and nepotism, the theft of state assets, or the diversion of state revenues(Bank, 1997).Corruption include bribery, extortion, influence peddling, nepotism, fraud, the use of “speed money” and embezzlement.

It should be noted that corruption is not limited to the official domain and there is no suggestion in this paper that official corruption is the only important aspect. The private sector is a prone as the public sector to abuse of power of position for private gain. It is also almost implicated in government corruption as a motivator of corrupt behaviour and a repository for its proceeds. The focus of this paper on official corruption is due merely to the need to keep the scope discussion manageable. Several approaches to classifying corruption have been proposed (Kpundeh & Hors, 1998; Karklins, 2016; Vargas-Hernández, 2013). The easiest approach analytically may be to distinguish between petty, grand and political corruption, depending on the amounts of money lost and the sector where it occurs.

Petty corruption consists of small-scale embezzlement and misappropriation; bribery demand by or offered to low-level official in order to bend rules; use of licensing and inspection powers for extortion, and perpetrating minor acts of favoritisms. The typical incident of petty corruption involves a private citizen dealing with a low-level government bureaucrat in a straightforward transaction such as goods clearance or issuance of driver’s license or passport. These acts of corruption can be subtle- a mere gesture or hint that a small consideration is expected. It can also be more direct, an explicit demand or a threat that the file could stop “moving” if a gift is not offered.

Grand corruption is misuse of public office at higher levels within the state (Rose-Ackerman & Palifka, 2016). It includes large scale embezzlement and misappropriation via public procurement; payment for non-existent goods or services; contrived losses in public procurement; large kickbacks in government payroll and extending economic privileges to special interests. The extreme example of grand corruption is “state capture”, which is when top politicians and bureaucrats collude with private actors to turn the state into a private moneymaking machine.

Political corruption includes gross abuse of the country’s mechanism of restraint: legislative and judicial processes, as well as auditing, investigatory, and oversight powers; subversion of electoral processes through vote-buying and bribery of accountable official; large-scale assignment of public property to privileged interests; politically motivated loans by banks and financial institutions; large contribution from public coffers to private causes and large political donations and bribes to parties and party official.

Without aiming to be comprehensive, some major expression of these types of corruption in BRICS are highlighted

Table 3. Types of corruption in BRICS

Type	Main Actors	Mode
Petty Corruption	Low and mid-level public official	Small scale embezzlement and misappropriation; bribes to bend rules or ignore misdemeanors; using licensing and inspection powers for extortion; minor favoritisms
Grand corruption	High level public officials; political; representatives of donor and recipient countries; bureaucratic elites; businessmen and middlemen	Large-scale embezzlement and misappropriation via public procurement; payment for non-existent goods or services; kickbacks; ”ghost workers” on government payroll; economic privileges given to special interest;
Political corruption	Top-level executive; legislative and judicial officials; bureaucratic elites; politicians; big business	Abuse of legislative powers; corruption of the judicial process; abuse of auditing, investigatory, and oversight powers; Undermining electoral processes through vote-buying and bribery of accountable officials, large-scale assignment of public property to privileged interests; large contributions from public coffers to private cause; large political donations and bribes

Another survey by TI shows a perception of widespread corruption among the country's major institutions of policy ,restraint and service delivery(International, 2009).Respondent were asked questions: "Percentage of respondent who felt the following institutions in BRICS countries were corrupt or extremely corrupt" .

Table 4. Percentage of respondent who felt the following institutions in BRICS countries were corrupt or extremely corrupt

Institutions	Brazil %	Russia %	India %	China %	South Africa%
Political parties	84	77	86	N/A	77
Police	70	89	75	N/A	83
Legislature	72	83	65	N/A	70
Public officials & civil servants	46	92	65	N/A	74
Judiciary	50	84	45	N/A	50
Education systems	33	72	61	N/A	32
Military	30	70	20	N/A	11
Medical and health service	55	75	56	N/A	55
Business	35	57	50	N/A	54
Media	30	59	41	N/A	40
NGOs	35	45	30	N/A	43
Religious Organization	31	40	44	N/A	24

Source: Transparency International Global Corruption Barometer 2013
https://www.transparency.org/gcb2013/country?country=south_africa

1.4. Theoretical Framework on Military Expenditure and Growth

(Aizenman & Glick, 2006) developed a theoretical framework to analyze military expenditure-growth nexus based on (Barro and Sala-I-Martin, 1992) work. They opined that military expenditure assert negative or insignificant effect on growth in the presence of corruption because of its non-linearity and omitted variable biases. (Aizenman & Glick, 2006) postulated that threat is a key factor to determine if military expenditure will assert positive impact on growth or not.

$$\uparrow threat + \uparrow military\ exp. = \uparrow economic\ growth\ (growth\ occur\ via\ provision\ of\ security)$$

$$\downarrow\ threat + \uparrow military\ exp. = \downarrow\ economic\ growth\ (via\ corruption\ and\ rent\ seeking)$$

This can be written mathematically as follows

$$\frac{\partial\ growth}{\partial\ m} = \propto_1 +\ a_1 threats\ ; a_1\ < 0, \qquad a_2\ > 0$$

$$\frac{\partial\ growth}{\partial\ threat} =\ b_1 +\ b_2 m\ ; b_1\ < 0, \qquad b_2\ > 0$$

G= growth rate of real GDP per capita; m= military expenditure; threat- level of country's effective military threat.

The basic growth equation for this research adopt (Aizenman & Glick, 2006) and (Compton & Paterson, 2016) empirical approaches written as

$$Y_{it} =\ \alpha + \beta_1 M_{it} + \beta_2 I_{it} + \beta_3\ M\ .\ I_{it} + \gamma' X_{it} + \eta_i + \varepsilon_{it}$$

Where Y- is the inclusive growth index, $M\ .\ (Institution)_{it}$- is the interaction of military expenditure with institution, X_{it} – is the set of control variables – education, population and Investment variables. ϵ_{it} is the error term.

(Aizenman & Glick, 2006) postulate that the direct impact of military expenditure and external threats on growth are assumed to inverse relationship while collaborative impact is positive. The Barro style model of military expenditure-growth relationship indicate that military expenditure influenced by external threat stimulate output by increasing security whereas, military expenditure influenced by rent seeking and corruption will retard growth, by disrupting productive economic activities.

Recently (Compton & Paterson, 2016) consider how institutions can impact military expenditure-growth nexus. Based on 100 countries of annual data from 1988 to 2010 by employing Panel OLS and generalized methods of moments (GMM), the authors find that military expenditure on growth is negative or zero at best and this impact is lessened in the presence of good economic and political institutions.

Theoretical Literature on Institution

Generally, there are three dominant schools on institutional thoughts (Thoenig, 2003) namely, incentive institutionalism, cultural institutionalism and historical institutional. (Thoenig, 2003) provided four separate streams of the institutional theory, viz historical institutionalism, sociological institutionalism, new institutionalism and local order or actor institutionalism. It is along these threads that this chapter relates the theoretical propositions on institutions. Basically, the social institution is enshrined in the seminal study of (Selznick, 1949), which presents public agencies as institutional actors who create a level playing ground , and produce participatory leadership and involvement.

Public management is not limited to the art of designing formalized structures but also considers the way participants are influenced, transformed and completed by informal structures. In this setting, the populace, the have-nots as well as the poor, are considered as more important than those as the highest hierarchy of the ladder. As such, public bureaucracy must cope with the constraints and pressures applied by the populace is cultivated and the stringencies and intricacies accorded the corridors of power are often relaxed to build confidence and ensure general acceptance from the people. With this, public institutions develop in a gradual process through the support, understanding and cooperation of the people.

In social institutions, even though the need for change is often illusory, as it tends to sap ideas and delimit innovations, pressures for change could occur in two ways. It could be internal and endogenously engineered or external and exogenously influenced which sometimes, could collapse the existing fabric of the institution (Oliver, 1992). The change operates through three identified mechanism: coercive isomorphism –change results from pressures exerted by political influence or by outside organizations considered legitimate; mimet isomorphism-uncertainty and ambiguity about goals or technology increase the adoption of imitation conducts; and normative isomorphism-the influence of individuals belonging to the same profession or having followed the same educational processes.

Historical institutionalism was initiated in the eighties and it suggests that public administration remains a sub set of political life such that the state machinery cannot exist in isolation por afford to be neutral (Hall et al., 2010). Public policies are seen as an inter-governmental instrument, which influences the choices made today based on the steps taken in the past.

Empirical Studies

Military expenditure and Growth

(Stroup & Heckelman, 2001) investigated the military expenditure–growth nexus using the augmented version of Barro styled model by incorporating military labour for the period of 1975-1989 by utilizing fixed panel estimation technique. Their result show that military expenditure, military labour and growth relationship are non-linear. Thus, low levels of military expenditure and military labour stimulate growth and vice versa.

(Aizenman & Glick, 2006) use Barro style growth model to explore the impact of military expenditure on economic growth taking cognizance of threat of 90 countries spanning 1989-1999. The empirical result revealed that military expenditure and antagonistic threat have negative effect on growth, whereas, military expenditure in the midst of threats stimulate growth. This innovative specification indicates that output is influenced by security or military expenditure depending on the presence of hostile threat.

(Yakovlev, 2007) use the Barro growth model for 28 countries over the period of 1965-2000 to examine the impact of military expenditure, arm trade on economic growth. Employing random and fixed effects and GMM techniques. The cross sectional results revealed that high military expenditure coupled with net arms exports separately retards growth whereas, net arms exporting countries coupled with high military expenditure does not retards economic growth.

In summary, Barro styled model postulates that military expenditure influence by external threats stimulate output via provision of security for lives and properties whereas military expenditure gear-up via corruption and rent seeking will retard growth, thus disrupting productive economic activities.

Institution and Economic growth

The question on the actual role of institutions in growth process is not yet entirely clear beyond the belief that good development and good institution go together. However, (Acemoglu et al., 2005) clearly affirm that good institution is a key determinant of growth in any economy. Government with good institution promotes favorable business environment, which recognize and rewards creativity.

Countries with good institutions often channel their public expenditure decision in stimulating and promoting growth inclusive. Process. This latter connection between institution and inclusive growth forms the crux of the investigation in this chapter using BRICS countries as a case study.

Institution, as defined by (North, 2006), is a set of formal and informal rules that govern the behaviour of individuals and organizations. Formal rules include constitutions, laws, regulations, and political system, while informal rules refer to social norms, values and beliefs. In this context, institutions structure the incentives that affect behaviors and provide a framework for economics exchanges .Good institutions and sound policies create an environment that fosters economic development through accumulation of factors of production and efficient use of resources. More often, the conceptualization of institutions allows the view that institutions are all rules or forms of conduct, which are intentionally devised to reduce uncertainty that result from imperfect information, control the environment and social interaction, as well as lower transaction cost (Ménard & Shirley, 2005).

(Ostrom, 2015) defined institutions as the sets of working rules that are used to determine who is eligible to make decisions in some arena, what actions are allowed or constrained, what aggregation rules will be used, what procedures must be followed, what information must or must not be provided and what pay-offs will be assigned to individuals dependent on their actions.

A considerable amount of country and cross-country studies has been done on the relationship between economic growth and institution. Among the prominent ones is that of (Acemoglu et al., 2005) which emphasized the fundamental importance of institutions in causing growth and differences in the levels of development across countries. Also, while examining discussions on institutions and economic development, (Chang, 2011) suggested that more attentive institutional economists were needed to focus on the real world institutional research, rather than retelling fairy-tales. According to the author, it is on the basis of reality and not fictions, that policy-relevant theories of institutions could be developed.

In a panel study, (Valeriani & Peluso, 2011) explore the effect of institutional quality on economic growth over sixty years among countries at different stages of development, using pooled regression fixed effects model to test three institutional indicators which included civil liberties, number of veto players and quality of government. The result revealed that institutional quality impacted positively on economic growth. However, further finding from the study showed that the size of the institutional impact on growth varies between developed and developing countries considered. Thus, in conclusion, the study claimed that institution mattered for growth.

Also, (Berggren et al., 2013) investigated the impact of institutions on economic growth in the EU-27, seven other similar European countries and Israel over the period from 1984 to 2009.The result of the panel data analysis submitted that then quality of policy which included stability of government, favourable socio economic condition, strong investment environment and democratic accountability, was growth-enhancing.

According to (Bhupatiraju & Verspagen, 2013) explained differences in the levels of development across countries using a multi-faceted database to measure institutions. Findings showed that institutions ranked above other factor when GDP per capita was the regressand. However, when factors such as investment and growth were included as independent variable, institutional factors was negatively associated with development variables.

In summary, the results presented above depicts mixed relations between institution and economic growth. As institution impact varies as it effect is positive on growth in a period, it affect negatively on economic performance in another period.

Military Expenditure, Institution and Growth

(Aizenman &Glick, 2006; Compton & Paterson, 2016) affirms that high military expenditure in the presence of high threat environment leads to economic growth via the provision of security while high military expenditure in the presence of low threats will retard economic growth via wide spread corruption and rent seeking.

(d'Agostino et al., 2012) further examined military expenditure-growth in the presence of corruption using African sample from 2003 to 2007.They found that corruption does influence the impact of military expenditure on growth. In related paper, (d'Agostino et al., 2017) re-examined the military expenditure –growth using 1996-2007 period by employing a System GMM estimation confirms that military expenditure and corruption does retard economic growth.

Recently (Compton & Paterson, 2016) consider how institutions can impact military expenditure-growth nexus. Based on 100 countries of annual data from 1988 to 2010 by employing Panel Ordinary Least Square (OLS) and system-generalized methods of moments (GMM).The authors find that military expenditure on growth is negative or zero at best and this impact is lessened in the presence of good economic and political institutions.

Data and Empirical Approach

Data

Considering the connection between military expenditure and institutions on inclusive growth in BRICS countries, (1984-2017). Inclusive growth index data that covers from 1984 to 2017 were presented in the appendix. Military expenditure data were obtained from Stockholm International Peace Research Institute extended database 1948 to 2017, which is relatively the standard in the literature.

Another variable of concern is institutional quality variables. Here, the proxy for institutional quality is corruption. The institutional quality proxy variable is source from IRIS/International Country Risk Guide (ICRG) database. Each of the ICRG measures range of 0 to 6, with higher values representing less corruption. In other words, higher scores indicate better institutions.

Other variables were obtained from World Bank Development Indicators (WDI).

Study period

The study period is 1984 to 2017. Due to the heterogeneous nature of BRICS countries, the countries were grouped according to World Bank income classification of Upper Middle Income countries (UMIC) and Lower Middle Income countries (LMIC).Data source for military expenditure at share of GDP were obtained from SIPRI database because it has more complete data series.

Description of Variables and data source

Variables	**Definition**	**Sources**
Key variables		
I.G	Inclusive growth Index	Author computation[1]
ME	Military expenditure (Share of GDP)	World Bank and Stockholm International Peace Research Institute new extended database 1984-2017
External Threat	External threats are classified as wars involving two independent countries	International Country Risk Guide (ICRG) database 1984 -2017
Internal threat	Internal threats includes Civil war, insurgency crisis and communal clashes	
Institutional quality	Corruption as proxy for institutional quality	
POP	BRICS Population growth rate	World Bank Development Database 2018 **(WDI)**
Security Web	BRICS Security Web measured by averaging of the ratio of military expenditure to GDP of BRICS neighboring countries	
INV.	Investment	
EDU	BRICS Education	

[1] The authors employed Z-sum score technique in this study. In this approach, equation for the normalized value according to KotharI, C.R. 2004. *Research methodology: Methods and techniques*, New Age International, Ullah, S. & KianI, A.K. 2017. Maqasid-al-Shariah-based socio-economic development index (SCECDI): The case of some selected Islamic economies. *Journal of Emerging Economies & Islamic Research,* 5..After finding the Z-sum score, the authors evaluate the average of the area under the curves already normalized. These values are considered as inclusive growth index by the following: Inclusive Growth Index (I.G.I.) = Average of Z score is divided by number of observation that is I.G.I.= 50% of Social Growth indicators + 50% of Economic Growth Indicators (IGI=$\frac{\sum x}{n}$) $0<IGI<1$.

The values of the IGI index vary between 0 and 1; if values close to 0 indicates that BRICS countries has very low level of inclusive Economic growth. On the other hand, values close to 1 indicates that the BRICS countries has a very high level of inclusive Economic growth.

Empirical Approach

For the empirical analysis, times series panel approach was adopted. The panel growth equation for this research adopt (Aizenman & Glick, 2006) and (Compton & Paterson, 2016) empirical approaches written as

$$Y_{it} = \alpha + \beta_1 M_{it} + \beta_2 I_{it} + \beta_3\, M\,.\, I_{it} + \gamma' X_{it} + \eta_i + \varepsilon_{it}$$

Where Y- is the inclusive growth index, $M\,.\,(Institution)_{it}$- is the interaction of military expenditure with institution, X_{it} – is the set of control variables – education, population and Investment variables. ϵ_{it} is the error term. The panel model is estimated using panel OLS rather than other estimation technique because their no presence of endogeneity while possibility of heterogeneity is taking care by using the World Bank Income classification.

Data Estimation and Interpretation

The study begins the analysis of the impact of military expenditure and institutional quality on inclusive growth in BRICS countries with descriptive analysis. Results of the descriptive statistics are reported in Table 5. Summary of the descriptive results shows that all the series show a high level of consistency as their means and medians fall within the maximum and minimum values of these series. Results of standard deviation, which measures the level of variation or degree of dispersion of the variables from their means, reveal that the actual deviation of the data from their means are very small as all the standard deviations are very low. Also, the most volatile is the variable of interaction between military expenditure and corruption (4.15%) while the least volatile is the GDP (0.18%) follow by population growth (0.41%).

Table 5. Summary of Descriptive Statistics

	Growth	**Military**	**Corrupt.**	**Mil*Corr**	**Education**	**Pop.**	**Invest.**
Mean	0.560548	1.675531	1.888973	3.961608	1.997633	8.234231	1.350123
Median	0.530000	1.512503	2.000000	3.344052	1.627790	8.160083	0.777008
Maximum	0.920000	5.503756	5.330000	20.78054	6.371640	9.097859	6.186882
Minimum	0.000000	0.000000	0.000000	0.000000	0.000000	7.546916	-0.178437
Std. Dev.	0.182348	1.390113	1.618897	4.151119	2.268775	0.412856	1.581964
Observation	146	146	146	146	146	146	146

Table 6 presents the correlation matrix of the exogenous variables used to achieve the second objectives. Correlation matrix shows the degree of association and direction of relationship among the variables. Results in Table 7 show that the degree of association that exists among the independent variables. It can be deduced that that all independent variables can be included in the same model without the fear of multicollinearity. Furthermore, result shows that while all other independent variables and the interactive variable have negative relationship with inclusive growth, population growth is the only variable that has positive relationship with inclusive growth.

Table 6. Correlation Matrix

	Corruption	**Education**	**Growth**	**Investment**	**Military**	**Mil*Cor.**	**Pop**
Corruption	1.000000						
Education	0.442204	1.000000					
Growth	-0.409220	-0.389133	1.000000				
Investment	0.310443	0.311967	-0.186814	1.000000			
Military	0.356456	0.006495	-0.539541	0.237188	1.000000		
Mil*cor	0.774648	0.203598	-0.497215	0.166961	0.700897	1.000000	
POP	-0.194754	-0.279060	0.283095	0.132430	-0.260201	-0.243763	1.000000

The next step is to examine whether long-run relationship exists among the variables. To achieve this, Pedroni Panel cointegration test was carried out. The major condition for using Pedroni approach to panel cointegration is that the number of variables must not be more than seven. The test conducted shows within group and between group coefficients. After satisfying this condition, cointegration test was carried out and result is presented in table 7. Results show that out of the four statistic in the within group section, two are significant while the other two are not significant. In addition, one out of the three statistic in the between group section is significant. This implies the null hypothesis of cointegration is rejected. Therefore, the study concludes that long run relationship exists among the variables.

Table 7. Pedroni Panel Cointegration Test Results

	t- Statistic	**Prob.**
Within Group		
Panel v-Statistic	-1.317433	0.9062
Panel rho-Statistic	2.330635	0.9901
Panel PP-Statistic	2.392952	0.0016**
Panel ADF-Statistic	0.090380	0.0060**
Between Group		
Group rho-Statistic	2.049197	0.9798
Group PP-Statistic	0.565818	0.7142
Group ADF-Statistic	-1.693105	0.0452**

Finally, theory suggests that corruption plays an important role in the military expenditure-growth nexus. The line of argument in the literature is that corruption raises the desired level of military spending and that military expenditure, in the presence of corruption, reduces growth. In order to confirm the validity or otherwise of this hypotheses, this study presents empirical evidence concerning the relationship among military spending, institutional quality, and growth in BRICS countries.

Table 8. Impact of Military Expenditure and Corruption on Inclusive Growth in the Lower Middle Income and Upper Middle Income Countries

Dependent Variable: Inclusive Growth		
Variable	LMI	UMI
Military Exp	0.412 (0.01)*	-0.067 (0.00)*
Corruption	0.380 (0.03)*	-0.007 (0.58)
Mil*Cor	-0.129 (0.02)*	-0.0007 (0.91)
Ledu	-0.013 (0.34)	-0.029 (0.00)
Gpop	0.325 (0.57)	0.008 (0.78)
Inv/gdp	-0.009 (0.79)	0.008 (0.35)
Constant	-3.77 (0.48)	0.666 (0.01)
R^2	0.37	0.44
Adjusted R^2	0.26	0.42
F-statistic	3.63(0.00)	18.86 (0.00)
Breusch-Pagan LM Test	3.42(0.00)	14.31(0.02)

Results of the impact of military expenditure and corruption on inclusive growth in the lower middle income and upper middle income are presented in table 8. For the lower middle income, military expenditure and corruption have positive and statistically significant effects on inclusive growth while the interactive term has negative and statistically significant effect on inclusive growth. This implies military expenditure reduces inclusive growth in the face of corruption. Investment in the lower middle income during the period under study is negative and not significant. For the upper middle income, military expenditure is negative and significant as against that of lower middle income. Corruption and interactive term have negative effects on inclusive growth but both are statistically insignificant. Investment in the upper middle income has positive effect but insignificant.

Dependent Variable Inclusive Growth

Variable	Coefficient	Prob.
Military Exp	-0.012	0.8201
Constant	0.529	0.0000
R^2	0.000218	
Adjusted R^2	-0.003983	
F-statistic	0.05(0.82)	
Breusch-Pagan LM Test	79.08(0.00)	

Conclusion

Corruption during this period has negative impact on inclusive growth and the result is statistically significant. Investment during this period has positive effect on inclusive growth and is statistically significant. This follows economic theory, as government will invest more in order to mitigate the negative effect of war on the economy. This implies military expenditure reduces inclusive growth in the face of corruption. Investment in the lower middle income during the period under study is negative and not significant.

In conclusion, for the upper middle income, military expenditure is negative and significant as against that of lower middle income.

Recommendation

This section also highlight some recommendations for BRICS countries on how to achieve optimum inclusive growth:

I. To achieve a positive optimum budgetary allocation to defence there is need for a more transparent and accountability processes in all military contracts and related agencies;

II. Military manufacturing industries must be established with the mandated to produce all their nation hardware needs and thereafter export to other members of the BRICS club;

III. There is need for the government to strengthen constitutional anticorruption institutions and civil societies to ensure that corrupt tendencies within military sector are reduced to the barest minimum.

IV. Aggressive public education to change the mind set of BRICS citizens to make them see corruption as evil and a common enemy.

V. Establishment of special courts to deal with corruption cases separately and strengthen the weak legal system

VI. The punishment meted out to corruption convicts, so far, is not enough to deter anyone from indulging in the evil practice. Therefore, it is recommended that death penalty for convicts. Such stringent punishment can root out corruption in the BRICS countries.

VII. Anti-graft bodies agencies should ignore primordial sentiment and go ahead to jail whosoever is involved in corruption.

Appendix

BRICS inclusive growth index from 1970 to 2017

Year	Brazil IGI	Russia IGI	India IGI	China IGI	South Africa IGI
1970	0	0.92	0.98	0.75	0.58
1971	0.58	0.91	0.43	0.72	0.46
1972	0.62	0.91	0.44	0.45	0.52
1973	0.63	0.9	0.4	0.48	0.51
1974	0.58	0.9	0.37	0.49	0.52
1975	0.65	0.88	0.37	0.48	0.53
1976	0.52	0.89	0.27	0.5	0.45
1977	0.59	0.86	0.31	0.51	0.43
1978	0.65	0.86	0.4	0.56	0.38
1979	0.56	0.79	0.37	0.55	0.38
1980	0.38	0.83	0.46	0.72	0.43
1981	0.55	0.83	0.56	0.82	0.39
1982	0.43	0.84	0.57	0.85	0.43
1983	0.38	0.82	0.66	0.65	0.32
1984	0.52	0.8	0.65	0.88	0.26
1985	0.53	0.83	0.32	0.87	0.23
1986	0.36	0.85	0.37	0.87	0.24
1987	0.47	0.84	0.35	0.51	0.28
1988	0.58	0.84	0.3	0.27	0.36
1989	0.61	0.78	0.25	0.75	0.19
1990	0.38	0.7	0.36	0.68	0.35
1991	0.5	0.71	0.38	0.75	0.27
1992	0.61	0.41	0.33	0.74	0.24
1993	0.68	0.48	0.34	0.61	0.39
1994	0.7	0.5	0.36	0.4	0.33
1995	0.61	0.48	0.38	0.56	0.41
1996	0.65	0.4	0.32	0.49	0.45
1997	0.67	0.4	0.33	0.49	0.35
1998	0.64	0.4	0.31	0.4	0.32
1999	0.61	0.4	0.24	0.52	0.4
2000	0.57	0.41	0.37	0.45	0.53
2001	0.61	0.43	0.36	0.37	0.39
2002	0.59	0.41	0.36	0.52	0.37
2003	0.55	0.42	0.37	0.39	0.3
2004	0.58	0.43	0.41	0.41	0.43
2005	0.51	0.47	0.35	0.44	0.38
2006	0.53	0.47	0.35	0.41	0.52
2007	0.53	0.43	0.37	0.4	0.39
2008	0.53	0.46	0.35	0.47	0.53
2009	0.59	0.51	0.3	0.4	0.38
2010	0.54	0.51	0.21	0.52	0.38
2011	0.56	0.44	0.32	0.42	0.52
2012	0.56	0.47	0.23	0.47	0.4
2013	0.56	0.47	0.25	0.42	0.39

2014	0.61	0.44	0.23	0.46	0.41
2015	0.6	0.57	0.25	0.54	0.26
2016	0.66	0.72	0.35	0.87	0.24
2017	0.91	0	0.2	0.87	0.09

Source: Author Computation

Reference

Acemoglu, D.; Johnson, S. & Robinson, J.A. (2005). Institutions as a fundamental cause of long-run growth. *Handbook of economic growth,* 1**,** pp. 385-472.

Aizenman, J. & Glick, R. (2006). Military expenditure, threats, and growth. *Journal of International Trade & Economic Development,* 15**,** pp. 129-155.

Alexander, W.R.J. (2015). The Keynesian IS-MR model and military spending. *Defence and Peace Economics,* 26**,** pp. 213-221.

Bank, W. (1997). *World Development Report 1997: The state in a changing world*. Oxford University Press.

Barro, R.J. & Sala-I-Martin, X. (1992). Public Finance in Models of Economic Growth. *The Review of Economic Studies,* 59**,** pp. 645-661.

Benoit, E. (1973). *Defense and economic growth in developing countries.*

Benoit, E. (1978). Growth and defense in developing countries. *Economic Development and Cultural Change,* 26**,** pp. 271-280.

Berggren, N.; Bergh, A. & Bjørnskov, C. (2013). *Institutions, Policies and Growth in Europe: Quality versus Stability*. Swedish Institute for European Policy Studies (SIEPS).

Bhupatiraju, S. & Verspagen, B. (2013). *Economic development, growth, institutions and geography*.

Chang, H.-J. (2011). Institutions and economic development: theory, policy and history. *Journal of Institutional Economics,* 7**,** pp. 473-498.

Compton, R.A. & Paterson, B. (2016). Military spending and growth: the role of institutions. *Defence and Peace Economics,* 27**,** pp. 301-322.

D'agostino, G.; Dunne, J.P. & Pieroni, L. (2012). Corruption, military spending and growth. *Defence and Peace Economics,* 23**,** pp. 591-604.

D'agostino, G.; Dunne, J.P. & Pieroni, L. (2017). Does military spending matter for long-run growth? *Defence and Peace Economics***,** pp. 1-8.

Dunne, J.P.; Smith, R.P. & Willenbockel, D. (2005). Models of military expenditure and growth: A critical review. *Defence and Peace Economics,* 16**,** pp. 449-461.

Hall, J.C.; Sobel, R.S. & Crowley, G.R. (2010). Institutions, capital, and growth. *Southern Economic Journal,* 77**,** pp. 385-405.

Institute, S.I.P.R. (2018). *Armaments, disarmament and international security*. SIPRI Yearbook.

International, T. (2009). *Global corruption barometer*. Transparency International Berlin.

Karklins, R. (2016). *The System Made Me Do it: Corruption in Post-communist Societies: Corruption in Post-communist Societies*. Routledge.

Kentor, J. & Kick, E. (2008). Bringing the military back in: Military expenditures and economic growth 1990 to 2003. *Journal of World-Systems Research,* 14**,** pp. 142-172.

Klein*, T. (2004). Military expenditure and economic growth: Peru 1970–1996. *Defence and Peace Economics,* 15**,** pp. 275-288.

Kothari, C.R. (2004). *Research methodology: Methods and techniques*. New Age International.

Kpundeh, S.J. & Hors, I. (1998). *Corruption & Integrity Improvement Initiatives in Developing Countries*. United Nations Publications.

Ménard, C. & Shirley, M.M. (2005). *Handbook of new institutional economics*. Springer.

Meng, B.; Lucyshyn, W. & Li, X. (2015). Defense expenditure and income inequality: evidence on co-integration and causality for China. *Defence and Peace Economics,* 26**,** pp. 327-339.

Menla Ali, F. & Dimitraki, O. (2014). Military spending and economic growth in China: a regime-switching analysis. *Applied Economics,* 46**,** pp. 3408-3420.

Mintz, A. & Stevenson, R.T. (1995). Defense expenditures, economic growth, and the "peace dividend" A Longitudinal Analysis of 103 Countries. *Journal of Conflict Resolution,* 39**,** pp. 283-305.

North, D.C. (2006). *Understanding the process of economic change*. Academic foundation.

Oliver, C. (1992). The antecedents of deinstitutionalization. *Organization studies,* 13**,** pp. 563-588.

Ostrom, E. (2015). *Governing the commons*. Cambridge university press.

Rose-Ackerman, S. & Palifka, B.J. (2016). *Corruption and government: Causes, consequences, and reform*. Cambridge University Press.

Security, C.O.H. (2003). *Human security now*. United Nations Publications.

Selznick, P. (1949). TVA and the Grass Roots.

Shahbaz, M. & Shabbir, M.S. (2012). Military spending and economic growth in Pakistan: New evidence from rolling window approach. *Economic Research-Ekonomska Istraživanja,* 25**,** pp. 119-131.

Smith, P.J. (2000). Transnational Security Threats and State Survival: A Role for the Military? *Parameters,* 30**,** p. 77.

Stroup, M.D. & Heckelman, J.C. (2001). Size of the Military Sector and Economic Growth: A Panel Data Analysis of Africa and Latin America. *Journal of Applied Economics,* 4.

THOENIG, J.-C. (2003). Institutional theories and public institutions: Traditions and appropriateness. *Handbook of public administration***,** pp. 127-37.

Ullah, S. & Kiani, A.K. (2017). Maqasid-al-Shariah-based socio-economic development index (SCECDI). The case of some selected Islamic economies. *Journal of Emerging Economies & Islamic Research,* 5.

Valeriani, E. & Peluso, S. (2011). The impact of institutional quality on economic growth and development: An empirical study. *Journal of Knowledge Management, Economics and Information Technology,* 1**,** pp. 1-25.

Vargas-Hernández, J.G. (2013). The multiple faces of corruption: Typology, forms and levels. *Organizational immunity to corruption: Building theoretical and research foundations***,** pp. 111-117.

Ward, M.D. & Davis, D.R. (1992). Sizing up the peace dividend: economic growth and military spending in the United States, 1948–1996. *American Political Science Review,* 86**,** pp. 748-755.

Yakovlev, P. (2007). Arms trade, military spending, and economic growth. *Defence and peace economics,* 18**,** pp. 317-338.

Zhao, L.; Zhao, L. & Chen, B.-F. (2015). The interrelationship between defence spending, public expenditures and economic growth: evidence from China. *Defence and peace economics***,** pp. 1-16.

Entrepreneurial Support and Entrepreneurial Intention of the Youth in Gauteng

Chante van Tonder[1]

Abstract: Unemployment is a crisis that the South-African youth cannot avoid. This requires the youth to consider alternative career options such as entrepreneurship. The public and private sector needs to facilitate and support the entrepreneurial intention of the youth in Gauteng. The study aims at determining if a significant relationship exists between the support provided by the public and private sector and the entrepreneurial intention of the youth in Gauteng. The sample consisted of 357 youth in Gauteng, aged between 18-34 years, currently working full-time, part-time, self-employed, unemployed or enrolled as a student. The data was collected using a self-administered questionnaire, which was analysed using a regression analysis. The findings indicated that a significant relationship exists between the public and private sector and the entrepreneurial intention of the youth. Furthermore, the respondents do have the intention to start a business, however the act of becoming an entrepreneur was not evident. The public and private sector needs to develop alternative tools to promote entrepreneurship as a career option and create awareness with regards to these support initiatives. This study adds to the insights of policymakers, the government, private sector, academics and the youth itself to identify the support needed for the development of youth entrepreneurship and promoting the support to the youth.

Keywords: private sector; public sector; youth unemployment

JEL Classification: L26

Introduction

Entrepreneurship has become an everyday buzzword discussed amongst researchers, academics, policymakers, economists and even students (Keat, Selvarajah & Meyer, 2011, p. 206). Researchers such as Maseko and Manyani (2011, p. 171); Mudavanhu, Bindu, Chingusiwa and Muchabaiwa (2011, p. 87), stated that the solution to unemployment and other socio-economic issues such as poverty can be addressed through entrepreneurship. Youth entrepreneurship is the driving force for innovative thinking, economic growth and job creation and for addressing other social and economic issues at hand (Steenkamp, Van der Merwe & Athayde, 2011, p. 316).

[1] University of Johannesburg, South Africa, Address: Johannesburg, South Africa, Corresponding author: chantevt@uj.ac.za.

Youth entrepreneurship also improves the general standard of a nation, which is the driving force for political stability and national security. It can also reduce crime, poverty and income imbalances (Boateng, Boateng & Bampoe, 2014, p. 110; Fatoki, 2011, p. 162).

Solutions for youth employment (SYE) identified four interventions to promote youth employment. These interventions considered both the formal and informal sectors. The four interventions include- entrepreneurship promotion, skills training, employment services, and wage and employment subsidies (Include, 2016, p. 1).

To ensure effective implementation of these interventions, support is needed from various role players such as the public and private sector (Include, 2016, p. 2). Research studies conducted in developed countries will differ compared to emerging and developing economies, due to the differing economic states of these countries. South-Africa's poverty rate is much higher compared to developed economies (Fatoki, 2010, p. 88), thus individuals in South Africa may not have access to higher education compared to individuals in a developed economy (Herrington & Kew, 2015/16, p. 54). This should be considered when finding possible solutions for low entrepreneurial intentions amongst the youth.

Despite the key role that the youth plays in the development of a country, limited research has been done to view entrepreneurship from the eyes of the youth, especially the obstacles that the youth face to start and maintain a business in a developing country (Dzisi, 2014, p. 1). Fatoki and Chindoga (2011, p. 162), noticed that there is a lack of accurate and coherent data on youth, especially youth entrepreneurship. Statistics South Africa (2017, p. 11) indicated that the unemployment rate of the youth remains very high (50.9%). A possible solution to address the high youth unemployment is the development of entrepreneurship amongst the youth. Three main reasons are prevalent to why youth entrepreneurship development is needed within the South-African economy. Firstly, entrepreneurship appears to provide both pathways out of poverty and mitigation against severe poverty for some young people (Chingunta, 2016, p. 1). Secondly, it offers a viable solution to economic growth and job creation. Lastly, it acts as personal fulfilment through increased self-esteem and boosting the confidence of young individuals (Geldhof, Weiner, Bronk, Damon, Porter, Malin, Agans, Muelle & Lerner, 2013, p. 431).

The general household survey of South-Africa in 2015 indicated that, 710 139 youth individuals were enrolled at a higher education institution in 2015 (Statistics South-Africa, 2015, p. 15), leaving approximately two million young people neither employed, nor enrolled at a higher education institution (Young People Fact Sheet, 2013, p. 1). Taking these statistics into account, the research studies of Mbuya and Schachtebeck (2016, p. 233); Malebana (2013, p. 137); Musengi-Ajulu (2010, p. 5); and Muofhe and Du Toit, (2011, p. 345) only focus on students and graduate students, which only makes up 14% of the South-African youth population, leaving 86% of the youth unattended. Since only 14% of the youth are enrolled at a higher educational institution, entrepreneurship programs and courses will only be available to these individuals. Gauteng is regarded as the hub of South-Africa, providing countless employment opportunities, however the formal employment opportunities in South-Africa will not reduce the high youth unemployment rate, due to it being insufficient to create new jobs, therefore entrepreneurship needs to be recognised as an employment option for the youth (Sharma & Madan, 2013, p. 5).

Youth participation needs to be encouraged across different market segments has become a necessary step globally, to grow and sustain the business operations of a country and its macro environment (United Nations Programme & Restless Development, 2011, p. 7). To be able to this, the public and private sector needs to support and facilitate youth entrepreneurship. The research intended to determine the level of support provided by the public and private sector and to determine the level of influence on the entrepreneurial intention of the youth in Gauteng. Previous research has only studied the entrepreneurial intention of students or graduate students and did not include the youth in general, which this research study aimed at closing this gap.

1. Problem Statement

Promoting economic development in South-Africa is complex among all targeted groups, especially due to poor economic participation of the youth, which hinders the country's economic growth and development (Van Tonder, 2017, p. 12). One of the reasons for the high unemployment rate and low entrepreneurial activities is due to poor participation of the youth in entrepreneurial activities (Department of Trade and Industry, 2013, p. 10). Numerous government and private sector initiatives have been in place to address the issue of the low entrepreneurial activity in South-Africa. Despite these initiatives there are still a low number of youth individuals that become or intend to become an entrepreneur, which could be due to the lack of awareness with regards to these existing initiatives (Herrington et al., 2014, p. 40).

The Gauteng economy is mainly made up of tertiary sectors that require workers with the necessary skills and capabilities to perform a task. However, most of the youth population is unskilled or semi-skilled and therefore the formal sector will not create jobs for these individuals (Gauteng employment Strategy, 2012, p. 11). To address the issue of the high unemployment rate of the youth, one needs to examine the role that the public and private sector plays in facilitating and promoting youth entrepreneurship.

2. Literature Review

The literature review will include a comprehensive overview of current literature on the topic youth entrepreneurship. The literature will start with a clarification of key terms, a discussion on the support structures for youth entrepreneurship, public and private sector support and lastly the entrepreneurial intentions of the youth in South-Africa.

Clarification of Key Terms

- **Entrepreneurial intention**

Thompson (2009, p. 676) defines entrepreneurial intention (EI) as "self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plan to do so at some point in the future".

- **Youth Entrepreneurship**

Chigunta (2002, p. v) defines youth entrepreneurship as "the practical application of enterprising qualities, such as initiative, innovation, creativity, and risk-taking into the work environment (either in self-employment or employment in small start-up enterprises), using the appropriate skills necessary for success in that environment and culture."

Support Structures for Youth Entrepreneurship in South Africa

Mahadea, Ramroop and Zewotir (2011, p. 76) highlighted that the current state of the labour market in South Africa will leave many young people without jobs when entering the working world. Therefore, it is important for the youth to realise that alternative working options need to be considered, such as self-employment which is becoming an entrepreneur, rather than seeking full-time employment. Entrepreneurs face many challenges on the path to achieving success (Legas, 2015, p. 23). Therefore, it is important to understand and explore the challenges that young entrepreneurs face.

The public and private sectors are responsible for addressing these challenges and the youth unemployment crisis (Glick, Huang & Mejia 2015, p. 1). The Department of Trade and Industry (2013, p. 39) has identified the role of the private sector and state-owned enterprises to support youth entrepreneurship in South Africa as follows:

- Promote and support economic youth participation through new venture creation in the private sector;

- Provide at least 30% procurement opportunities and enterprise development support and corporate social investment to youth enterprises that can be claimed from the BBBEE Codes of Good Practice and sector codes;

- Report on the progress of economic youth participation in terms of new venture creation in annual reports and information technology data that can be available to the public;
- Motivate mainstream businesses and state-owned enterprises to support and partner with youth business formation;
- Enter purchasing power parity initiatives aimed at supporting economic youth participation through new venture creation for young people;
- Provide programmes that include business mentorship, training and technical skills.

Support structures such as mentors, support networks, business clubs and incubators can be the key for transforming a single youth start-up business into a successful small or medium size business (Fatoki & Chindoga, 2011, p. 10). The current support structures and programmes offered by the public and private sectors will be discussed in the following section.

Public Sector Support

Government programmes have been initiated to support start-up businesses and existing businesses that need support to grow further. However, authors such as Herrington and Kew (2014, p. 40) and Fatoki and Chindoga (2011, p. 163) have found that there is a lack of awareness among the youth concerning the existence of these programmes.

Since 1996 the South African government has established various institutions to create a supporting environment for the youth to start their own businesses. These institutions include the Small Enterprise Development Agency (SEDA), the National Youth Development Agency (NYDA), the Small Enterprise Finance Agency (SEFA), sector education and training authorities (SETAs), the National Empowerment Fund (NEF), the South African Institute for Entrepreneurship (SAIE) and many other incentives, grants and fiscal advantages (Antonites & Truter, 2010, p. 448). Regardless of all these initiatives, youth entrepreneurial activity remains low (Mahadea & Pillay, 2008, p. 442).

Private Sector Support

All over the world, public sectors in both developing and even developed countries face many financial challenges, and therefore the public sector cannot be the only key to economic development (De Gobbi, 2014, p. 305). The role of the private sector is to provide different forms of economic opportunities to society and is an essential part in alleviating poverty (Cain, 2014, p. 2).

The private sector has established various institutions to support the youth to start and grow a business. Some of these institutions include The Sasol Business

Incubator, SAB Kickstart programme, Sasol Siyazenzela Youth in Business, The Standard Bank Ignitor programme and The Shell LiveWIRE programme. The private sector has been a vital role player to develop and implement training programs and assisting national strategies aimed at skills development (Van Tonder, 2017, p. 48). This can however only be successful if there is active engagement of employers within the private sector and the public sector.

Youth Entrepreneurial Intentions in South-Africa

The current state of youth entrepreneurial intentions in South Africa is a worrying factor. The youth intention towards entrepreneurship is the lowest amongst all sub-Saharan African countries, with a Total Entrepreneurial Activity (TEA) rate of only 15%, compared to the average of the sub-Saharan African countries with 56% (Turton & Herrington, 2012, p. 68). Additionally, in 2012, only 1% of the youth has established a business (Turton & Herrington, 2012, p. 74). Promoting entrepreneurship amongst the youth will emphasise that the youth do have alternative employment options by starting a new business, rather than waiting for an established business to provide a job (Sharma & Madam, 2013, p. 2). These findings agree with Fatoki (2014, p. 187) and Steenkamp, Van der Merwe and Athayde (2011, p. 67), stating that if the youth will engage in entrepreneurial activities, these youth individuals will be less reliant on the government and achieve their own economic goals, higher income and more job satisfaction. Scrutinizing the South African environment, the youth do not have the necessary abilities, skills and inspiration to establish entrepreneurial activities, which has led to the poor economic state of South-Africa (Benderman, Bezuidenhout, Hewett, Rensburg, Naidoo, Arrdt, Bank & Visser; 2011, p. 4)

The study of Mbuya and Schachtebeck (2014, p. 233) found that both entrepreneurship and non-entrepreneurship students in the urban environment had high intentions of pursuing an entrepreneurial career. Many studies (Gerba, 2012, p. 258; Muofhe et al., 2011, p. 345), have indicated that entrepreneurship students were more attracted to an entrepreneurial career than non-entrepreneurship students. However, the focus cannot only be placed on the youth that are studying towards a career. The study of Olufunso (2010, p. 87) found a low entrepreneurial intention amongst graduate students in South Africa, suggesting that students prefer the steadiness of a job opposed to starting a business. These findings are in contrast with the study of Malebana (2014, p. 137), reporting a high entrepreneurial intention amongst rural university students. Musengi-Ajulu (2010, p. 5), found that fifty-two percent (52%) of youth graduates in South Africa have an attraction to becoming an entrepreneur. It can be concluded that most of the South-African graduates do have the intention to become an entrepreneur, but based on the TEA rate of the South-African youth, the intention to become an entrepreneur never turns into the reality of being an actual entrepreneur and this is the worrying factor.

These findings only reflect the entrepreneurial intention of students or graduate students and do not include the youth in general, thus there was a gap in the literature which this research study aimed at address.

3. Research Objective

The primary objective of the research study was to determine if a significant relationship exist between the public and private sector support and the entrepreneurial intention of the youth in Gauteng.

Research Hypotheses

The following hypothesis was tested:

H_1+ Youth entrepreneurial support provided by the private and public sectors for the youth positively influences the youth's entrepreneurial intention.

4. Methodology

The study utilized a positivistic paradigm through a quantitative research approach using a questionnaire to obtain the relevant data from the youth respondents within the Gauteng area. The target population for this study was youth individuals between the ages of 18-35 years within the Gauteng region. A non-probability purposive sampling technique was used by the means of purposive sampling.

The self-administered questionnaire was distributed to youth individuals listed on the database of two individual organisations: (1) Johannesburg Digital Ambassadors (JDA) and (2) Reunert College within the Gauteng region.

Reliability and Validity

The instrument was pilot tested on five respondents to determine the reliability of the study. The results were compared to see if the instrument was reliable or not and thus the reliability of the project could have been improved (Fox & Bayat, 2013:103). The internal consistency of the questionnaire was measured, using Cronbach alpha coefficient (α). The alpha values are illustrated in table 1.

Table 1. Cronbach Alpha (α) Values of Entrepreneurial support and Entrepreneurial Intention

Topic	Number of questions	Cronbach Alpha's Coefficient
Youth entrepreneurial support provided by public sector	3	0.812
Youth entrepreneurial support provided by private sector	2	0.691
Entrepreneurial intention	10	0.941

Table 1 indicate that all the Cronbach alpha values for the three individual factors ranged from 0.6 to 0.9 surpassing the minimum threshold of 0.6. Goforth (2015:1) argue that Cronbach values between 0.65 and 0.8 can be seen as reliable. Content validity was ensured through consulting subject matter experts of entrepreneurship, to determine if the research instrument measures all the facets of the given construct. Construct validity was determined through tapping into the theory of entrepreneurship and aspects relevant to an entrepreneur. Criterion validity was determined by measuring the instrument against the Entrepreneurial Intention Model (EIQ), developed by Liñán and Chen (2009, p. 612).

5. Results

During the data collection process, 400 questionnaires were distributed, of which 364 questionnaires were collected and 357 questionnaires were usable. This equalled an 89,25% response rate.

Demographic Description

The sample of the study comprised of 42.6% males and 57.4% females. A large portion of the study were aged between 18-24 years, (62,9%) with 1,9% aged between 14-17 years, 33,2% were aged between 25-34 years and lastly 1,9% were aged 35 years and older. Being regarded as a youth individual, one can only be aged between 14-34 years, thus, the age group 35 and older (1,9%) were removed from the study, leaving a useable 357 responses. The ethnicity distribution indicated that 50,4% were Black, 43,1% were White, 3,4% were Indian or Asian and lastly, 3,1% were Coloured. Based on the level of education, only 1,1% have grade 11 or lower, 51,5% have grade 12 (matric), 13,7% have a post matric Diploma or Certificate, 16,5% have Baccalaureate Degree(s) and 16,5% have a Post-Graduate Degree(s). The distribution of the employment status contributed in determining the percentage of youth that are currently pursuing entrepreneurial activities or would prefer the security of a permanent job. Therefore, 29,4% are working full-time, 7% are working part-time, 9,2% are self-employed, 13,4% are unemployed and 40,9% are students.

Inferential Statistics

The respondents were asked whether they have the intention to start a business or not. This question was only relevant to the respondents that were working full-time, part-time, unemployed or a student. 198 respondents (77,6%) said “yes” they do have an intention to start a business in the future and 56 respondents (22,0%) said “no” they don’t have an intention to start a business in the future. The respondents were then asked if they have owned a business in the past and if yes, why did they not continue with self-employment. The findings indicate that 49 respondents (15,1%) have owned a business in the past and 255 respondents (78,7%) have not owned a business in the past.

Based on the 49 respondents that owned a business in the past, several reasons were provided by the respondents for not continuing with the business. Table 4 indicates that the most common three reasons were (1) business was a liability (2) financial challenges and (3) furthering education. Some of the other reasons provided by the respondents included that the location of the business was not suitable, materials were stolen and the profits were to inconsistent causing slow growth, selling on credit led to the business not being profitable.

It can therefore be concluded that the intention to start a business is evident, however only few have started a business in the past and did not continue with self-employment, based on the reasons provided before. These challenges can be one of the reasons for only having the intention to start a business, but never actually pursuing it.

Frequency Distributions

To determine the entrepreneurial intention amongst the youth, the respondents were asked to answer ten questions based on the intention to become an entrepreneur. The results indicated that most of the respondents strongly agreed on the questions, with a mean higher than 5. The following question had the highest mean of 5.43 (1) “I have the intention to start a business in the foreseeable future”, with 37,8% strongly agreeing with this statement. Followed by “I have seriously thought of starting a business”, with a mean of 5.29 and 37,0% strongly agreeing with this statement. However, there was one statement with a mean of 3.67 “I have the intention to start a business in the next year”, 20,1% strongly disagreeing with this statement.

These findings indicate that there is an intention to start a business amongst the youth in Gauteng, however the intention to start a business is only in the foreseeable future and not within the next year, thus most of the respondents are not currently pursuing entrepreneurial activities or imminent in starting a business.

Public and Private Sector Support

The questions were intended to measure the perception of the support provided by both the private and public sector for the youth. All the questions had a mean lower than 5. The statement with the highest mean of 4.02, "the private sector supports young individuals to start a business", had 36,8% unsure with the statement and 28 10,0% disagreeing with the statement. The second question with the highest mean of 4.02, "entrepreneurial training is easily available for the youth", with 29,7% unsure with the statement and 14,0% disagreeing with the statement. Taken the statement with the lowest mean of 3.51 into account, "business information is made easily available by the government", 15,4% strongly disagreed with this statement.

These findings can be interpreted that most of the respondents do not believe that there is sufficient support from both the public and private sector. Secondly, the public sector does not provide the necessary business information. The youth also do not know who to approach when planning to start a business.

Regression Analysis

Regression analysis was employed to test the hypothesis. Table 2 indicates the correlation analysis.

Table 2. Correlations of dependent and independent variables

		Entrepreneurial Intention	**Youth Entrepreneurial Support**
Pearson Correlation	Entrepreneurial Intention	1.000	0.288
	Youth Entrepreneurial Support	0.288	1.000
Sig. (1-tailed)	Entrepreneurial Intention		0.000
	Youth Entrepreneurial Support	0.000	
N	Entrepreneurial Intention	276	276
	Youth Entrepreneurial Support	276	276

Source: Author's compilation

Table 2 indicated that the dependent variable, *entrepreneurial intention* is positively correlated to the independent variable- *youth entrepreneurial support.* The level of significance indicated that the p-value $\leq$ 0,05, thus, the null hypothesis (H0) will be rejected and the alternative hypothesis will be accepted (H1).

Coefficients

The strength of the relationship can range from -1 to +1, if a value is zero, then there is no relationship and if a value is 1, then there is a relationship (Pallant, 2013:139). Table 3 shows the coefficients values for the independent variables.

Table 3. Coefficients of independent variables

Coefficients[a]									
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-0.039	0.320		-0.123	0.902	-0.670	0.591
	Youth Entrepre-neurial Support	-0.011	0.045	-0.008	-0.239	0.811	-0.099	0.078
a. Dependent Variable: Entrepreneurial Intention								

Table 3 indicates that the level of significance for the *constant* value is (p = 0.902), indicating that the p-value ≥ 0.05, and therefore the null hypothesis was not rejected. The independent variable *youth entrepreneurial support* (p = 0.811) indicate that the p-value ≥ 0.05. Therefore, the null hypothesis was not rejected, meaning that the independent variable, *youth entrepreneurial support* makes a very small contribution to the model.

6. Recommendations

Public Sector

Introducing entrepreneurship as a subject in the secondary schooling system and career advice services should be presented to secondary schools, to encourage entrepreneurship as career option. Furthermore, providing scholarships to study entrepreneurship courses, offer short courses to write a business plan. The government has the responsibility to broaden policies and negotiate an agreement with financial institutions to provide cheaper finance for potential and existing entrepreneurs to start and grow a business. Wage subsidies can be provided to encourage the youth to start a business, these subsidies can be used as an injection capital to kick start a business.

Private Sector

These training programs offered by the private sector institutions could benefit the institution by gaining BBBEE points. Creating internship opportunities for the youth, to acquire the necessary business management skills and financial skills. Job interventions are another approach to address the issue of high unemployment. Job interventions can assist the youth with information on who to approach when having an idea to start a business. Labor centers should be introduced where enterprises can advertise and provide on the job training opportunities and create internship opportunities for the youth, to obtain the necessary business management skills and financial skills. Universities, colleges and other business institutions can establish partnerships with the private sector to include entrepreneurship programs and courses that is both theoretical and practically.

Conclusion and Future Direction for Research and Policy

The findings indicated that the variable**-** *youth entrepreneurial support* does affect the entrepreneurial intention of the youth in Gauteng. The study revealed that the youth in Gauteng do have the intention to start a business, but only in the foreseeable future and this will leave South-Africa in the same position with a below average total entrepreneurial activity (TEA) rate of 15% amongst the youth. Therefore, there is a need to promote entrepreneurship amongst the youth and alternative tools will be needed to transform the entrepreneurial intention into entrepreneurial action. The youth also has the perception that there is not sufficient support provided by the public and private sector and this could be a reason for a high entrepreneurial intention, but a low actual entrepreneurial activity amongst the youth.

Future research is apposite to measure the current impact of private and public sector initiatives on the success of current youth entrepreneurial start-ups in order to see areas that are working and not working that would allow to make suggestions for change and improvement.

Bibliography

Antonites, A.J. & Truter, M. (2010). SMME procurement issues in local government: A Gauteng metropolitan. *Journal of Public Administration*, 45(3), pp. 447-466.

Boateng, G.O.; Boateng, A.A. & Bampoe, H.S. (2014). Barriers to youthful entrepreneurship in rural areas of Ghana. *Global Journal of Business Research*, 8(3), pp. 109-119.

Cain, T. (2014). The role of the private sector in promoting economic growth and reducing poverty in the Indo-Pacific region. *Lowy Institute for International policy*, pp. 1-8.

Chigunta, F. (2002). *Youth entrepreneurship: Meeting the key policy challenges.* Education Development Center.

De Gobbi, M.S. (2014). Making youth entrepreneurship work in sub-Saharan Africa: Some factors of success. *Open Journal of Business and Management,* 2(04), p. 305.

Department of Trade and Industry. (2013). Briefing on the NEF strategy and annual performance plan 2017/18. Available from: https://www.thedti.gov.za/parliament/2017/NEF2017.pdf.

Dzisi, S. (2014). *Youth entrepreneurship: Investigating obstacles to youth enterprise creation and development.*

Fatoki, O. & Chindoga, L. (2011). An investigation into the obstacles to youth entrepreneurship in South Africa. *International business research,* 4(2), p. 161.

Fatoki, O.O. (2010). Graduate entrepreneurial intention in South Africa: Motivations and obstacles. *International journal of business and management,* 5(9), pp. 87-98.

Fox, W. & Bayat, M.S. (2008). *A guide to managing research.* Juta and Company Ltd.

Gauteng Employment Strategy (2012). Gauteng Province. Economic development. Available from: http://www.ecodev.gpg.gov.za/policies/Documents/Gauteng%20Youth%20Employment%20Strategy.pdf.

Geldhof, G.J.; Porter, T.; Weiner, M.B.; Malin, H.; Bronk, K.C.; Agans, J.P.; Mueller, M.; Damon, W. & Lerner, R.M. (2014). Fostering youth entrepreneurship: Preliminary findings from the young entrepreneur's study. *Journal of research on adolescence,* 24(3), pp. 431-446.

Glick, P.; Huang, C. & Mejia, N. (2015). *The private sector and youth skills and employment programs in low and middle-income countries.* Report No. 1603414. Solutions for youth unemployment: Rand Corporation.

Herrington, M. & Kew, P. (2015/16). *Global entrepreneurship monitor: South African Report.* Is South Africa heading for an economic meltdown? Available from: http://www.gemconsortium.org/report.

Herrington, M.; Kew, J. & Kew, P. (2014). *Global entrepreneurship monitor: South African Report.* Available from: http://www.gemconsortium.org/docs/3336/gem-south-africa-2014-report.

Ignitor. (2018). *Our Mission.* Available from: http://www.ignitor.co.za/mission.

Keat, O.Y.; Selvarajah, C. & Meyer, D. (2011). Inclination towards entrepreneurship among university students: An empirical study of Malaysian university students. *International journal of business and social science,* 2(4).

Legas, H. (2015). Challenges to entrepreneurial success in sub-Saharan Africa: A comparative perspective. *European Journal of Business and Management,* 7(11), pp. 23-36.

Liñán, F. & Chen, Y. (2009). Development and Cross-Cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship theory and practice,* 33(3), pp. 593-617.

Mahadea, D. & Pillay, M. (2008). Environmental conditions for SMME development in a South African province: Management. *South African Journal of Economic and Management Sciences,* 11(4), pp. 431-448.

Mahadea, D.; Ramroop, S. & Zewotir, T. (2011). Assessing entrepreneurship perceptions of high school learners in Pietermaritzburg, KwaZulu-Natal. *South African Journal of Economic and Management Sciences,* 14(1), pp. 66-79.

Malebana, M.J. (2013). Entrepreneurial intent of final-year Commerce students in the rural provinces of South Africa. *Pretoria: UNISA.*

Mbuya, J. & Schachtebeck, C. (2016). *Future entrepreneurs: Does the field of study matter?* A comparison of students in a South African urban environment.

Mudavanhu, V. (2011). *Determinants of small and medium enterprises failure in Zimbabwe: A case study of Bindura.*

Muofhe, N.J. & Du Toit, W.F. (2011). Entrepreneurial education's and entrepreneurial role models' influence on career choice. *SA journal of human resource management*, 9(1), pp. 300-350.

Musengi-Ajulu, S. (2010). *What do we know about the entrepreneurial intentions of the youth in South Africa? Preliminary results of a pilot study*.

Pallant, J. (2013). *SPSS survival manual.* McGraw-Hill Education (UK).

Sharma, L. & Madan, P. (2013). Affect of perceived barriers to entrepreneurship on the career choice decision of students: A study of Uttarakhand state, India. *BEH - Business and Economic Horizons*, 9(2), pp. 23-33.

Statistics South Africa (2015). *Poverty and inequality*. Available from: http://www.statssa.gov.za/?cat=22.

Statistics South Africa (2017). *Quarterly Labour Force Survey.*

Steenkamp, A.G.; Van der Merwe, S.P. & Athayde, R. (2011). An investigation into youth entrepreneurship in selected South African secondary schools: An exploratory study. *Southern African Business Review*, 15(3), pp. 46-75.

Turton, N. & Herrington, M. (2013). Global entrepreneurship monitor 2012-South Africa. Available online at: http://www.gemconsortium.org/docs/2801/gem-south-africa-2012-report.

United Nations (2011). *Private sector toolkit for working with youth.* Available from: https://social.un.org/youthyear/docs/PrivateSectorKit.pdf.

An Explorative Study on Cooperation among Municipal Corporations

Avraham Ketko[2], Simona Shechter Gilboa[3], Ana-Maria Bercu[4], Maria-Viorica Bedrule-Grigoruta[5]

Abstract: The literature on local government management seldom relates to the issue of collaboration between municipal corporations. This article seeks to contribute to this subject, while projecting the existing knowledge of management of organizations in general to the local municipal sphere in particular. The main aim of the article is to evaluate the preparatory activities required as a preliminary stage for the initiation and promotion of collaboration between municipal corporations. The methodology used is based on quantitative analyze and qualitative ones (Likert scale). We focused on the perceptions of the senior managers of these municipal corporations and found out that defining the managers' resources (time, authority, money, personnel, equipment, ego, and information, skills), ensuring the support of municipality's top management, undergoing early activities of openness to change have positive influence on the managers' perceptions of the importance of collaboration and their willingness to promote it.

Keywords: collaboration; management commitment; innovation; and municipality companies/corporations; public administration

JEL Classification: G32

1. Introduction

Collaborations within organizations in general and across sectors in particular, like any process, require planning and advance attention (Fink et al., 2013; OECD, 2006). There is a built-in gap between theoretical thinking and the basic concept of

[2] Alexandru Ioan Cuza University of Iasi, Romania, Bureau of Municipality Corporations, Tel Aviv, Israel, Address: 11 Carol I Blvd., Iasi 700506, Romania, Tel.: +4 0232 20 1000, Fax: 0232. 20 1201, E-mail:

[3] Research Center of Tel-Aviv-Yafo Municipality, Tel-Aviv, Israel, Address: Municipality of Tel-Aviv-Yafo, 69 Ibn Gvirol Street. 64162, Tel-Aviv, Israel, E-mail:

[4] Associate Professor, PhD, Alexandru Ioan Cuza University of Iasi, Romania, Address: 11 Carol I Blvd., Iasi 700506, Romania, Tel.: +40232201102, int. 2377, Fax: +40232217000, Corresponding author: bercu@uaic.ro.

[5] Alexandru Ioan Cuza University of Iasi, Romania, Address: 11 Carol I Blvd., Iasi 700506, Romania, Tel.: +4 0232 20 1000, Fax: 0232. 20 1201, E-mail:

collaboration that sees the importance, the positive, the benefits and the advantages of partnership and sharing, and the actual implementation and difficulties of realization. Collaborations require breaking conventions, changing patterns of thinking, work habits, and traditions, overcoming personal and/or group interests and the ego of employees and managers (Sullivan & Skelcher, 2017). The implementation of collaboration is even more difficult since the concession, change and replacement of the conceptual paradigm are required in the immediate stage, while the results are presented only in words and declarations, in thought and perception, and will be achieved, if at all, only in the future (Ansell & Gash, 2008; Feiock, 2013). Therefore, it is necessary to identify the factors that influence the willingness of senior managers to collaborate with potential partner organizations.

This article contributes in several ways. First, there are articles dealing with collaboration between organizations and within the organization itself, however, there are few articles dealing with collaboration between subsidiaries in general and in the municipal arena in particular. Second, the managers' attitudes towards collaboration are less emphasized and so are the relationships between variables such as the managers' willingness to forgo resources in order to collaborate, quantity of resources, support from top management, and the importance of collaboration. Moreover, an understanding of these relationships can lead to practical implications. In this article, we focus on the relevant actions in the planning stages of the collaborations and the needed preparation of the managers and the organizations in order to enable the success of the collaborations.

2. Literature Review

There are several definitions in the literature for collaborations that cross departments, organizational units, line of business and organizations in general. Most of the definitions focus on cooperation between involved parties sharing common goals and objectives. The collaborations are aimed to achieve goals that are not possible and/or too complex to achieve alone. Achieve better and more appropriate results (business, social, public), act more efficiently and efficiency, pooling resources, achieve economies of scale, reduce risk and improve performance. The characteristics of the collaboration include, inter alia, the types of partners' entities, the agreement on a shared vision, goals and objectives, transparency, open communication and the dispensation of powers and resources (Emerson & Nabatchi, 2015; Gardner, 2016; Gray & Stites, 2013; Kolk & Lenfant, 2015; Liedtka, 1998; Moseley, Cherrett & Cawley, 2001; OECD, 2006; OECD, 2015; Wanna, 2008; Wyrwa, 2018).

Wyrwa (2018) reviews the words and terms used by the literature to describe partnership as: "cooperation, coordination, collaboration, working together, working groups, integrated jointly operating organizations or networks, (…) interagency, inter professional collaborative, joint-up working, joined-up thinking, whole systems or holistic approach".

Liedtka (1998) claims that the collaborative process includes three necessary steps: identifying opportunities for collaboration, achieving partners' commitment and implementing the partnership. The sharing process begins by identifying opportunities and building business cases for collaboration. For this purpose, an information network and cross-organizational connections should be created in order to recognize and reach all the centers of expertise and capabilities that constitute the basis for sharing. In the second stage, the interests of the partners must be committed and engaged to the process. This stage requires the ability of management to motivate those involved in the various levels of the organization and its various parts. This motivation can be achieved through a system of compensation, rewards and recognition of short-term achievements despite the long-term investments that required. Therefore, allocating appropriate resources is essential in addition to clearly articulating policy statement.

In the third stage, the implementation stage, the participants must learn to work together, since the sharing goes from vision and perception to practical steps. The parties involved in cooperation should maintain the attention and energy required for the strenuous and sometimes exhausting work involved in putting the cooperation into practice.

From the above, and from the broad literature on collaboration and partnership, it emerges that for the success of the sharing processes and achieving desired results and outcomes, a number of necessary elements are required. Without the presence of these elements and components in the various stages of collaboration, the possibility of successful collaborations is not guaranteed, to say the least.

The components of collaboration include: shared vision of goals and objectives agreed upon in advance, management commitment, trust, knowledge sharing, open communication channels, transparency, mutual respect, openness to changes, change management, shared decision making, innovation, resources allocation and risk sharing (Beer, 1988; Campbell, 2018; Ito & Souissi, 2012; Lambert, Emmelhainz & Gardner, 1996; Murphy & Coughlan, 2018; Piltan & Sowlati, 2016; Tanner & Otto, 2016; Van Ortmerssen, van Woerkum & Aarts, 2014; Wyrwa, 2018).

The same concepts and ideas of collaboration are relevant when examining collaboration and partnership between government bodies in the central government and local government. Although municipalities do not always tend to cooperate as a first option (LeSage, McMillan & Hepburn, 2008), but according to literature and as it in practice, government and municipal authorities promote collaboration. These collaborations are carried out in order to realize economies of scale, cost savings, economic efficiency in services delivery, pooling resources, sharing costs of shared service and so on (Feiock, 2013; Spicer, 2017).

Cooperation between local authorities allows them to overcome some of the challenges arising from problems of municipal fragmentation and external influences. In addition, another advantage of these partnerships is that there is no need for intervention and involvement by the central government. Such collaborations are vital because the decisions and actions of a single local authority can directly affect residents of nearby authorities (for example, dealing with air pollution, natural disasters, various hazards etc.). Cooperation, in general, and in such cases, in particular, can overcome and/or deal optimally with such issues and provide efficient and appropriate services (Agranoff & McGuire, 2004; Bel & Warner, 2015).

The literature focuses more on the need for sharing and less on the methodology and ways to implement mechanisms of action to achieve such cooperation in the municipal sphere in general and with municipal corporations in particular (Giguère, 2007; Mattessich, Murray-Close & Monsey, 2008).

For proper planning as a preliminary stage in the process of collaboration between municipal corporations, several variables were chosen, since they exist in the management and collaboration literature. By learning the relationships between these variables, we can shed light on their place in the municipal sphere and on municipal corporations. In this paper, we have chosen to examine the importance of collaboration in the managers' eyes and their willingness to forgo resources to promote these collaborations (the dependent variables). The other variables, which affect the importance of collaboration and the willingness to forgo resources, are the amount of resources the manager has to carry out the work, encouragement of innovation in the organization by the management of the municipality, openness to changes among employees and their desire to improve work processes (the independent variables).

2.1. The Importance of Collaboration

Collaboration is a visionary, strategic, managerial and leadership process. Without the commitment of the senior management that derives from the importance of the subject in their eyes - it is not possible to promote the processes of collaboration, cooperation and partnership. The importance of managers at the various levels of municipal corporations is a crucial factor in the success of collaboration. The managers' perceptions of the importance of collaboration have a direct impact on the priority that this topic will occupy in their agenda. The importance of collaboration is "projected" from the senior managers to the middle-level managers and to all employees of the municipal corporations. There, the managers' perceptions, statements and actions will mobilize the entire organization for collaboration or will remove the organization from it.

The complexity of collaboration requires the mobilization of senior management, allocation of appropriate resources, and resolution of conflicts, joint decisions, and relinquishment of resources, authority and independence to a certain extent. Without the commitment of management, accountability and genuine recognition of the need arising from the understanding of the importance of the subject, cooperation and work will not be possible (Almog-Bar & Schmid 2018; Bryson, Crosby & Stone 2006; Crosby & Bryson 2010; Brinkerhoff 2002; Jones & Hooper 2017).

2.2. Willingness to Forgo Resources

Collaboration represents a cross-border idea both pragmatically and conceptually. As mentioned above, it is necessary to enlist all the stakeholders for implementation joint work at the immediate stage and to see results, if any, in the future. For these two reasons (support for the concept and the need for current investment in return for future benefits), the parties involved in the partnership are ready to make an effort at this stage without immediate compensation. In this effort, people are willing to give up resources for the construction of something new even if it is future. People in the framework of sharing are willing to take into account the interests of others and give up personal gain, to change priorities, to give up personal and organizational reputations and to reduce the level of control to a satisfactory degree in order to find solutions that are considered better for the whole group.

In the framework of the joint work, the individual is willing to make concessions, at times, to make sure that everyone is cooperating. The parties that join the strategic cooperation are prepared to maintain cooperation even if a response is required against those who act not in favor of the common goal even at the price of giving up and without expecting personal gain. The parties involved in the process of cooperation understand the benefits and the advantages inherent in the common product (which could not be achieved individually) and to this end are willing to forgo resources to obtain more benefits than the price of the current concessions (Almog-Bar & Schmid, 2018; Dessalegn, Kiktenko, Zhumagazina, Zhakenova & Nangia, 2018; Falk & Fehr, 2003; Gintis, 2000; Jacobson, Hughey, Allen, Rixecker & Carter, 2009; Linden, 2003; Snavely & Tracy, 2002; Thomson & Perry, 2006; Vatn, 2007).

2.3. Resources Involved in Partnerships among Municipalities Corporations

Roussos and Fawcett (2000) relate to the resources available to those involved in the partnership within others factors that contribute to successful collaborations. These resources include tangible resources (money, manpower etc.) and intangible resources (information, authority, ego, time etc. Arya & Lin, 2007). These resources are important in their very presence and have an impact on the allocation of risks and responsibilities between the partners. Guo and Acar (2005) point out that organization (especially non-profit organizations) tend to develop formal cooperation activities when they are more mature, with large budgets and large government funds. Foster-Fishman, Berkowitz, Lounsbury, Jacobson and Allen (2001) argue that the coalition should have or acquire financial and human resources to implement and operate the sharing activity. Collaborative efforts need significant resources including financial capabilities to implement new programs and successfully run the partnership.

2.4. Top Management Municipalities for Innovation and Entrepreneurship

Another important factor mentioned in the management literature is top management's support for change (Armenakis & Harris, 2002). Hence, an ongoing commitment expressed by top leaders is required for changes (Tanner & Otto, 2016). Likewise, top management that supports innovation and entrepreneurship among its municipal corporations will show consistency between its values, words and deeds.

Innovation is defined as the adoption of a new idea or behavior for the organization or implementation of a new or significantly improved product, service or process, or a new organizational method. It is a process that generates development and implementation of new ideas or behavior. Innovation is a result of response to changes in the external environment or as a response to the influence of the environment on the organization (Damanpour, 1996; Diamond & Vangen, 2017; OECD, 2005). Chesbrough (2006) displays an "open innovation" term, which is an antithesis to traditional vertical integration (vertical model is a model of closed innovation). An open innovation model involves using knowledge flow (in and out) to accelerate internal innovation and expand markets for external use of innovation. Innovation of this type is a collaborative innovation involving more participants with a wider diversity. Lee, Olson and Trimi (2012), define co-innovation as a new innovation paradigm that new ideas and approaches from different internal and external sources are united on the platform to create new-shared organizational values. The core of co-innovation involves commitment, joint creation, and attention to value creation.

Top management's support for innovation and entrepreneurship is related to the importance of collaboration and willingness to forgo resources in order to promote cooperation. Thus, as other components and enablers of collaboration, top management's support for innovation has an important role.

2.5. Openness to Change

A process of collaboration, regardless of the reason for it, constitutes a change in the organization. The very process towards collaboration (interacting with others, revealing information, sharing information, changing and adapting goals) and the activity itself (teamwork rather than individualism, different work environment, new tools and support, culture and language etc.) is a significant change. Every change includes resistance to the idea of change and a desire to continue with what is known, familiar and comfortable Instead of dealing with the implications of change in general and the change that results from cooperation in particular.

Augustsson, Richter, Hasson, and von Thiele Schwarz (2017) define openness to change as the extent to which employees are willing to support the change and their positive effect on the potential implications of change. In order to facilitate the implementation of cooperation processes, among other collaboration enablers, an organizational environment that supports change and is open to change is required. Kirsch, Chelliah and Parry (2012) indicate that cultures and organizations with a greater tendency toward individualism are less suitable for teamwork. Teamwork and collaboration will be easier to implement in organizations with a collaborative culture. In organizations where employees at various levels have access to information, goals and objectives are clear and intelligible to all, communication channels are open - there is a greater chance of success in the change involved in the implementation of cooperation. In addition, a combination of available resources and appropriate organizational climate (including openness to change) is a key factor in the success of change and collaboration (Harper, Kuperminc, Weaver, Emshoff & Erickson, 2014; Lehman, Greener & Simpson, 2002).

2.6. Improving Work Processes

In order to achieve cooperation, both individuals and organizations need to change the way they perceive their environment and respond to the situation in which they are. In order to move from individual action to dependent work and from bureaucratic activity to joint actions, a process of conceptual and social change is required (Augustsson, Richter, Hasson & von Thiele Schwarz, 2017; Benzer, Charns, Hamdan, & Afable, 2017; Celep, Brenner, & Mosher-Williams, 2016).

Processes and methods of change management must be part of the collaboration steps from the very beginning. According to the theories of change management, readiness for change depends on the satisfaction level of the current situation, clarity of vision and goals. Hence, preparedness for change is also one of the important components of the sharing process and part of the organizational infrastructure for it. This factor is the responsibility of senior management and is part of the commitment to lead the process of cooperation (Beer, 1988; Tanner & Otto, 2016; Van Tulder & Keen, 2018).

The motivation of employees to work together and to create cooperation includes many factors: financial reward, recognition of contribution to work, advancement and progress, improvement of status at work, greater responsibility, risk sharing, increased interest in work, exposure to other and new areas, creation of working relationships with new and other employees at various levels of the organization, satisfaction resulting from the creation of additional value and more. The more managers at all levels of management are able to express, encourage and empower these motivation factors, the greater the willingness and readiness of employees to promote cooperation on their own initiative or to lead management initiatives.

Employees expect to work more collaboratively than before. This expectation can also come on a background of recognition that current work processes are inefficient and/or effective enough. Employees usually have the most knowledge about the failures in their work and that of those around them. They have the ability to point out the points needed to improve work processes. Since most of the work processes in organizations are cross-organizational, cross-sector and cross-border processes, the improvement can clearly result from cooperation between all these factors (Bergman & Baker, 2000; Détienne, 2006; Lacerenza, Marlow, Tannenbaum & Salas, 2018; Patel, Pettitt & Wilson, 2012; Salas, Sims & Burke, 2005).

We argue that there is amplifying effect of existing resources and openness to change on the importance of collaboration, since both are vital to the success of collaboration. Each one is considered as a necessary condition, especially in the public sector; therefore, we assume that they may have amplifying effect together.

3. Methodological Approach

The main aim of the research is to analyze what the antecedents that will affect the planning and implementation of collaboration between the municipal corporations in the Tel- Aviv-Yafo City. The correlated objectives follow to examine what are the antecedents that will affect the managers' importance of collaboration between municipal corporations and to reveal what are the antecedents that will affect the willingness of the managers to forgo resources in order to promote cooperation and partnership in municipal corporations. The Tel-Aviv-Yafo municipality owns thirty municipal corporations. These municipal subsidiaries engage in a diverse and wide variety of areas, including: urban development, commerce and economic initiatives, infrastructure, transportation and parking, tourism, sport, recreation and leisure, urban renewal, conferences, construction of public buildings, projects execution, welfare and education.

In order to test the research question and the hypotheses (presented above), a quantitative research was conducted among the municipal corporation managers and employees. The study was conducted among the senior managements of the municipal corporations. The participants were 94 senior managers, 87 responded to the survey with a response rate of 93%. The questionnaires were sent by organizational e-mail to all the participants via a survey program that guarantees anonymity of the participants. 44.8% of the managers are senior managers (Directors General, Deputy Directors General), 55.2% hold other senior positions (e.g. Finance Department Directors, Legal Advisors, Operation Directors, etc.), and 50.7% of the respondents are women and 49.3% men. The average years in the corporation of all respondents is 9.0 years (SD = 7.8). 46.9% of the managers are active in the area of infrastructure, 16.8% of the managers' work in the corporations dealing with leisure time and sport, 20.5% in corporations dealing with culture, 10.8% in tourism and conferences and the others in education and welfare, 86.0% of the managers' work in the corporations fully owned by the municipality and the others in corporations partly owned by the municipality. Regarding the level of education: 6.4% of the managers finished high school with or without matriculation, 34.2% managers have a first degree diploma and 59.5% have a second degree diploma.

The measures that are based on subjective responses of the participants are of *Likert scale* of five levels. The scale is from 1-5 and the possibilities of the answers are from 1 – "to a very slight extent" to 5 – "to a very great extent".

Whenever possible, we used questionnaires that had already appeared in the literature with established reliability (Hobfoll, 1989). The reliability of the multiple item indexes was estimated using *Cronbach's alpha coefficient*.

According with the main aim of the research, the tested hypotheses and sub-hypotheses were:

H1. The perceived managers' resources at work are related to the managers' importance of collaboration among municipal corporations.

H1.1. The perceived managers' resources at work are positively related to the managers' importance of collaboration among municipal corporations.

H1.2. The resources that the manager has at work are in a positive relationship to the manager's willingness to forgo resources to promote collaboration.

H2. The encouragement of the municipality's senior management for innovation and entrepreneurship has a relationship with the importance of collaboration between municipal corporations.

H2.1. The encouragement of the municipality's senior management for innovation and entrepreneurship has a positive relationship with the importance of collaboration between municipal corporations.

H2.2. The encouragement of the municipality's senior management for innovation and entrepreneurship has a positive correlation with the extent to which the manager is willing to forgo resources in order to promote cooperation.

H3. The openness to changes among the employees in the corporation is in a relationship with the importance of collaboration between municipal corporations.

H3.1. The openness to changes among the employees in the corporation is in a positive relationship with the importance of collaboration between municipal corporations.

H3.2. The openness to changes among employees in the corporation is in a positive relationship to the manager's willingness to forgo resources to promote collaboration.

H4. The desire to improve work processes has a relationship with the importance of collaboration between municipal corporations.

H.4.1. The desire to improve work processes has a positive relationship with the importance of collaboration between municipal corporations.

H4.2. The desire to improve work processes has a positive relationship on the willingness of the manager to forgo resources in order to promote cooperation.

H5. Openness to changes among the employees will moderate relationship between resources that the manager has at work and the importance of collaboration between municipal corporations.

H5.1. Openness to changes among the employees will moderate the positive relationship between resources that the manager has at work and the importance of collaboration between municipal corporations.

H.5.2. Openness to changes among the employees will moderate the positive relationship between resources that the manager has at work and the manager's willingness to forgo resources in order to promote collaboration.

The analyze is based on variables that describe the collaboration process among municipalities bodies. One of the dependent variables analyzed is *collaboration importance* that can be reflected in questions as *to what extent do you agree with the following …*; or *In my opinion, it is important to cooperate with other corporations, even at the cost of additional work*; or *In my opinion, it is important to cooperate with other corporations*; or *Collaboration with other corporations may increase the degree of success of my corporation*. Other variable take into analyze is *willingness to forgo resources in order to promote collaboration*. Collaboration consists of elements including the ability to cooperate, to grant, to make possible, and to give the need and desire for collaboration priority to your own wishes. Therefore, the variable *willingness to forgo resources in order to promote collaboration* is a very important variable and was selected to be one of the dependent variables in this research. In order to measure the willingness to forgo resources, the questionnaire included specific questions such as: willing to forgo time, equipment, ego, information etc. (Bryman & Bell, 2015).

One of the independent used variables is *resources that the manager has at his job.* This measure has been constructed in accordance with Hobfoll’s (1989) model. The questionnaire contains 7 resources, which fall into four categories: objects (e.g., tools for work), conditions (e.g., people I can learn from), personal characteristics (e.g., control over the situation) and energies (e.g., feeling of success). Respondents were asked to indicate how much of each resource they had in their work. The independent variable *the extent to which the municipality's senior management encourages innovation and initiative* in the corporations was also taken from the organizational climate questionnaire of Brown & Leigh (1996) and was adjusted to this research. Among the questions were: *the senior management of the municipality encourages initiative and innovation* and *the senior management of the municipality encourages us to "dream" about all kind of issues related to our corporation*. The independent variable *openness to change among employees in the company* was evaluated by 2 items. Questions asked included: *my employees tend to consider the benefits rather than the disadvantages of changes taking place in our corporation* and *my employees tend to accept change in work processes relatively easily*. The independent variable *the desire to improve work processes* is tested in the questionnaire through questions such as: *my corporation holds regular meetings on processes of improvement* and *in my corporation, regular meetings are held with internal or external customers in order to coordinate expectations*.

The control variables_were included in the model to control characteristics of the firm and of the mangers: The ownership of the organization by the municipality (full or partly), the domain of activity (Transportation, leisure, sports, urban development, culture, housing, education, conferences, water, welfare tourism, urban infrastructure) the income of the organization for 2016 and gender of the manager.

4. Results and Interpretation of Data

The results of regressions predicting willingness to forgo resources and importance of collaboration are presented in table 3 and 4. In the first step, the control variables were entered. In the second step all the independent variables were entered. The interaction term of resources that the manager has at work and openness to changes among the employees were entered in the third step.

Overall 28% of the variance in willingness to forgo resources and 29% of the variance in the importance of collaboration was explained by the regression equations.

Consistent with hypotheses 1 (and sub-hypotheses 1.1. and 1.2), the manager's resources at work show positive statistically significant coefficients in the full model. The manager's resources at work positively related to the willingness and importance of collaboration (β=.28) and it is positive related to the manager's willingness to forgo resources in order to promote collaboration (β=.27). Hypotheses 2 (and sub-hypotheses 2.1. and 2.2) are also supported. The encouragement of the municipality's senior management for innovation and entrepreneurship has a positive relationship with the importance of collaboration (β=.25) and with the extent to which the manager is willing to forgo resources in order to promote cooperation (β=.31).

However, hypotheses III (and III.1. and III.2.) were refuted. The openness to changes among the employees in the corporation is not positively correlated with the importance of the collaboration (β=.00) and to the manager’s willingness to forgo resources in order to promote collaboration (β=-.09). In the same way, hypotheses 4 and 5 (with sub-hypotheses 4.1. and 4.2.) were refuted. The desire to improve work processes has not had a positive effect on the importance of collaboration (β=-.09) and on the willingness of the manager to forgo resources in order to promote cooperation (β=-.05).

The following tables present descriptive data of the research variables, their reliability, the mean and standard deviations.

Table 1. Statistical Characteristics of the Research Variables

The variable	Number of items	Mean	Standard deviation	Answers range	Reliability coefficient	subjects number
Importance of collaboration	4	4.24	0.68	5-1	0.86	87
Willingness to give up resources to promote cooperation	8	3.41	0.83	5-1	0.85	82
Encouragement of the municipality's senior management for innovation and entrepreneurship	2	3.70	0.98	5-1	0.86	78
Openness to changes among employees	2	3.10	0.80	5-1	0.84	81
Desire to improve work processes	2	3.32	1.00	5-1	0.77	82
Perception of the resources the manager has at work	7	3.90	0.56	5-1	0.84	82

Table 2. Relationships between the Research Variables

#		1	2	3	4	5	6	7	8	9	10
1.	Income	-									
2.	Owner	.15	-								
3.	Area of activity	-.12	.09	-							
4.	Gender	.06	-.15	.05	-						
5.	Willingness to forgo resources	-.11	-.03	-.02	-.17	-					

6.	Importance of collaboration	-.39**	-.06	.07	-.05	.41**	-				
7.	Openness to changes among employees	-.00	-.13	.01	-.06	.19	.21	-			
8.	Desire to improve work processes	.20	-.05	.06	.04	.14	.08	.50**	-		
9.	Current resource quantity	.11	-.09	.05	-.01	.16	.26*	.42**	.46**	-	
10	Encouragement of the municipality's senior management for innovation and entrepreneurship	-.07	-.03	-.04	.04	.30*	.26*	.21	.20	.24*	-

P< .05 * P< .001 **

Table 3. Regression Analysis on willingness to forgo resources

variable	**Model 1**	**Model 2**	**Model 3**
Control variables			
Income	-.08	-.10	-.03
Owner	-.03	-.02	-.00
area	-.02	-.03	-.01
gender	-.17	-.18	-.26*
Independent variables			
Employees openness to change		-.06	-.09
Desire to improve work processes		.05	-.05
Current resource quantity		.17	.27*
Encouragement of the municipality's senior management for innovation and entrepreneurship		.32*	.31*
Current resource quantity X Employees openness to change			.32*
N	70	70	70
ΔR^2	.04	.16*	.08*
Adjusted R^2	-.02	.09*	.17*

p< 0.05*

Table 4. Regression Analysis on importance of collaboration

variable	**Model 1**	**Model 2**	**Model 3**
Control variables			
Income	-.36*	-.36*	-.36*
Owner	.00	.02	.02
area	.04	.03	.03
gender	-.03	-.03	-.03
Independent variables			
Employees openness to change		.00	.00
Desire to improve work processes		-.08	-.09

Current resource quantity		.27*	.28*
Encouragement of the municipality's senior management for innovation and entrepreneurship		.25*	.25*
Current resource quantity X Employees openness to change			.03
N	71	71	71
ΔR^2	.14*	.15*	.00
Adjusted R^2	.09*	.20*	.19

$p < 0.05$*

Hypothesis 5 with sub-hypotheses 5.1., suggested that openness to changes among the employees will moderate the positive relationship between resources that the manager has at work and the willingness and importance of collaboration in the eyes of the manager, but it was refuted (β=.03 n.s).

Whereas Hypothesis 5, with sub-hypotheses 5.2., which proposed that openness to changes among the employees will moderate the positive relationship between resources that the manager has at work and the manager's willingness to forgo resources in order to promote collaboration, was supported (β=.32*).

5. Discussions

This study extends the local government management literature in relation to the issue of collaboration between municipal corporations. Thus, contributing to this subject, while integrating the existing knowledge of management of organizations in general to the municipal sphere in particular. We examined the antecedents related to collaboration in order to emphasize what are the preparatory activities required as a preliminary stage for the initiation and promotion of collaboration between municipal corporations. In this study, we focused on the perceptions of the senior managers of these municipal corporations.

We found that the resources (tangible and intangible) of mangers at work have a significant positive relationship with the importance of mangers to collaborate and with the extent to which the manager is willing to forgo resources in order to promote cooperation. The literature also refers to the available resources as one of the facilitators for sharing ideas among managers. Without resources available for day-to-day activities, managers will turn their attention to obtaining additional resources for achieving business objectives first and foremost and will not be able to direct resources (which are not abundant) to the subject of collaborations (Arya & Lin, 2007; Guo & Acar, 2005; Roussos & Fawcett, 2000). One of the key strategic explanations for cross-organizational collaboration lies in the organization's need to seek access to complementary resources. Complementary resources among partners represent a theoretical and practical puzzle for firms seeking collaboration. Research shows that when such resources exist, the formation of collaborative ventures becomes more likely and the potential for success increases. Also, in a business environment, companies that regularly evaluate assets and those who are highly aware of their resources, are open to sharing with other organizations (Deken, Berends, Gemser & Lauche, 2018; Vasudeva, Spencer & Teegen, 2013; Wang & Zajac, 2007).

Moreover, the encouragement of the municipality's senior management for innovation and entrepreneurship has a positive relationship with the importance of collaboration and with the extent to which the manager is willing to forgo resources in order to promote cooperation. Innovation and the fostering of initiatives are considered as one of the factors that enable collaboration. In organizations where innovations and initiatives are on the organizational agenda, there are ongoing activities of brainstorming, exchange of views, team meetings, and working and thinking relationships from different disciplines and different organizational sectors. This activity supports and promotes cooperation and raises ideas for implementation by virtue of cross-sectorial acquaintance and joint teamwork. In cooperative organizations, there is willingness and readiness to give up personal interests in order to achieve and promote common interests. Such willingness is the result of a personal example (in declarations and actions combined) from senior management to other managers at all levels of management and the organization as a whole. (Reddy, Desai, Sifunda, Chalkidou, Hongoro, Macharia & Roberts, 2018; Sergienko, 2001; Willis, 2012).

In this study, we have not found a relationship between openness to changes among the employees and importance of the collaboration and the manager's willingness to forgo resources in order to promote collaboration. There are articles that claim that organizations involved in cooperation are required to preserve their knowledge and therefore have less openness. The sharing process takes a long time and has a high level of risk - issues that reduce openness in the organization (Jones & Hooper, 2017; Laursen & Salter, 2014; Qin & Fan, 2016).

Although, in the literature we can find studies that connect process of improvement with collaboration importance (Cheruvelil, Soranno, Weathers, Hanson, Goring, Filstrup & Read, 2014; Daniels & Walker, 1996), in this study there is not a relationship between these two variables. A possible explanation for this may be that corporate managers are constantly operating in a challenging environment on a regular basis and in the ecosystem of constant improvement. Therefore, they do not place a particular emphasis on the desire to improve work processes.

We have not found the amplifying effect of openness to change and amount of resources a manager has on the importance collaboration. In the literature, there is a connection between the quantity of existing resources and the perception of the importance of collaborating (Arya & Lin, 2007; Guo & Acar, 2005; Roussos & Fawcett, 2000). In addition, there is a connection between openness to changes and the importance of sharing (Celep, Brenner & Mosher-Williams, 2016; Ehls, Korreck, Jahn, Zeng, Heuschneider, Herstatt, Koller & Spaeth, 2016; Wiener, Gattringer & Strehl, 2018). However, this amplifying effect was refuted in this study.

On the other hand, the amplifying effect of openness to change and amount of resources a manager has on willingness to forgo resources to promote collaboration was confirmed. Thus, openness to changes among employees empowers and strengthens the positive correlation between the amount of resources the manager has and his willingness to forgo resources to promote collaboration. This finding emphasizes the need of companies to simultaneously engage in openness to changes among its employees and redefining and elaborating the perceptions of the managers' resources in order to achieve successful collaborations among local government corporations.

6. Conclusions and Implications to Management

The amount of resources the manager has to carry out his work (time, money, responsibility, authority etc.) affects the importance he attributes to the collaboration and his willingness to forgo resources to promote it. The importance of collaboration in the eyes of the manager is one of the main factors in promoting the issue. Therefore, it is important to ensure that from the initial stages of preparing the sharing action plan; these resources will be considered and allocated in accordance with the different stages of the collaboration. The municipality's senior management must ensure that these resources are indeed well defined and are available for use as an integral part of the entire sharing process.

The municipality's top management plays an important role in promoting collaboration between the corporations. The support and commitment of the municipality's senior management in general and on encouraging initiatives and innovation in particular is preliminary step in a collaboration process. Therefore, the recruitment of the municipality's senior management is a vital and necessary condition in order to implement collaboration between the municipal corporations. As the municipality's management in general and top senior management in particular will carry out activities such as resource allocation and promoting a supportive organizational environment - corporate executives will appreciate the need for collaboration in a positive manner and will be willing to promote partnership in their corporations.

In order to achieve the commitment of senior management, it is necessary to prepare an initial outline that shows the directions of action, the potential benefits and resources required and to receive the consent of the senior management based on this presentation as a first step in the process.

In light of the importance of resources that the manager has to perform his work (time, authority, money, personnel, equipment, ego, information, skills) and their effect on promoting cooperation - specific attention is required in advance. In the framework of the early stages and planning for the initiation of collaboration, it will be appropriate to establish an activity for the managers that will include: defining these resources, mapping the resources, whether they can be increased and/or redesigned, their awareness and their proper use.

As part of the preparation of the organizational infrastructure for the purpose of collaboration, appropriate activity is required for the change management among managers and employees alike. After increasing awareness of the issue, a detailed plan for change managing will be presented (by a professional). This program will include, inter alia, communicating and explaining to the various levels in the organization, identifying stakeholders who can be positive change agents within the organization, identifying points of resistance and preparing a coping plan, and so on.

Within the framework of the detailed plan (which will be prepared after receiving a principle approval and appropriate resources), preparatory activities should be included in those issues. Our future research will include these steps to determine the effects on collaboration process among municipalities' corporations.

7. Reference

Agranoff, R. & McGuire, M. (2004). *Collaborative public management: New strategies for local governments*. Washington, D.C.: Georgetown University Press.

Almog-Bar, M. & Schmid, H. (2018). Cross-Sector Partnerships in Human Services: Insights and Organizational Dilemmas. *Nonprofit and Voluntary Sector Quarterly*, 0899764018771218.

Ansell, C. & Gash, A. (2008). Collaborative governance in theory and practice. *Journal of public administration research and theory*, 18(4), pp. 543-571.

Armenakis, A.A. & Harris, S.G. (2002). Crafting a change message to create transformational readiness. *Journal of organizational change management*, 15(2), pp. 169-183.

Arya, B. & Lin, Z. (2007). Understanding collaboration outcomes from an extended resource-based view perspective: The roles of organizational characteristics, partner attributes, and network structures. *Journal of management*, 33(5), pp. 697-723

Augustsson, H.; Richter, A.; Hasson, H. & von Thiele Schwarz, U. (2017). The need for dual openness to change: A longitudinal study evaluating the impact of employees' openness to organizational change content and process on intervention outcomes. *The Journal of Applied Behavioral Science*, 53(3), pp. 349-368.

Beer, M. (1988). Leading Change. *Harvard Business School Background Note 488-037*.

Bel, G. & Warner, M.E. (2015). Inter-municipal cooperation and costs: Expectations and evidence. *Public Administration*, 93(1), pp. 52-67.

Benzer, J.K.; Charns, M.P.; Hamdan, S. & Afable, M. (2017). The role of organizational structure in readiness for change: A conceptual integration. *Health services management research*, 30(1), pp. 34-46.

Bergman, R. & Baker, J.D. (2000). Enabling collaborative engineering and science at JPL. *Advances in Engineering Software*, 31(8-9), pp. 661-668.

Brinkerhoff, J.M. (2002a). Assessing and improving partnership relationships and outcomes: a proposed framework. *Evaluation and program planning*, 25(3), pp. 215-231.

Brinkerhoff, J.M. (2002b). Government–nonprofit partnership: a defining framework. Public Administration and Development: *The International Journal of Management Research and Practice*, 22(1), pp. 19-30.

Brown, S.P. & Leigh, T.W. (1996). A new look at psychological climate and its relationship to job involvement, effort, and performance. *Journal of applied psychology*, 81(4), p. 358.

Bryman, A. & Bell, E. (2015). *Business research methods*. 4th Ed. U.S.A: Oxford University Press.

Bryson, J.M.; Crosby, B.C. & Stone, M.M. (2006). The design and implementation of Cross-Sector collaborations: Propositions from the literature. *Public administration review*, 66, pp. 44-55.

Campbell, J.W. (2018). Efficiency, Incentives, and Transformational Leadership: Understanding Collaboration Preferences in the Public Sector. *Public Performance & Management Review*, 41(2), pp. 277-299.

Celep, A.; Brenner, S. & Mosher-Williams, R. (2016). Internal culture, external impact: how a change-making culture positions foundations to achieve transformational change. *The Foundation Review*, 8(1), p. 12.

Cheruvelil, K.S.; Soranno, P.A.; Weathers, K.C.; Hanson, P.C.; Goring, S.J.; Filstrup, C.T. & Read, E. K. (2014). Creating and maintaining high-performing collaborative research teams: the importance of diversity and interpersonal skills. *Frontiers in Ecology and the Environment*, 12(1), pp. 31-38.

Chesbrough, H.W. (2006). *Open innovation: The new imperative for creating and profiting from technology*. Boston: Harvard Business Press.

Crosby, B.C. & Bryson, J.M. (2010). Integrative leadership and the creation and maintenance of cross-sector collaborations. *The Leadership Quarterly*, 21(2), pp. 211-230.

Damanpour, F. (1996). Organizational complexity and innovation: developing and testing multiple contingency models. *Management science*, 42(5), pp. 693-716.

Daniels, S.E. & Walker, G.B. (1996). Collaborative learning: improving public deliberation in ecosystem-based management. *Environmental impact assessment review*, 16(2), pp. 71-102.

Deken, F.; Berends, H.; Gemser, G. & Lauche, K. (2018). Strategizing and the initiation of interorganizational collaboration through prospective resourcing. *Academy of Management Journal*, Vol. 61, no. 5, pp. 1920–1950, https://doi.org/10.5465/amj.2016.0687.

Dessalegn, B.; Kiktenko, L.; Zhumagazina, B.; Zhakenova, S. & Nangia, V. (2018). Explaining farmers' reluctance to adopt recommendations for sustainable ecosystem management. *Ecological Processes*, 7(1), p. 24.

Détienne, F. (2006). Collaborative design: Managing task interdependencies and multiple perspectives. *Interacting with computers*, 18(1), pp. 1-20.

Diamond, J. & Vangen, S. (2017). Coping with austerity: innovation via collaboration or retreat to the known? *Public Money & Management*, 37(1), pp. 47-54.

Ehls, D.; Korreck, S.; Jahn, R.; Zeng, M.A.; Heuschneider, S.; Herstatt, C.; Koller, H. & Spaeth, S. (2016). Open Foresight: Exploiting Information from External Sources. *SSRN*. https://ssrn.com/abstract = 2764208.

Emerson, K. & Nabatchi, T. (2015). *Collaborative governance regimes*. Georgetown University Press.

Falk, A. & Fehr, E. (2003). Reciprocal Fairness, Cooperation and Limits to Competition. In E. Fullbrook (Ed.). *Intersubjectivity in economics: Agents and structures,* pp. 42-56. London: Routledge.

Feiock, R.C. (2013). The institutional collective action framework. *Policy Studies Journal*, 41(3), pp. 397-425.

Fink, M.; Raz-Shechter, A.; Eshrl-Rabinovitz, A.; Simhon, O.; Morag-Faktor, Y.; Elroy, I.; Goldenshtain, M. & Rotstein, R. (2013). *A model for Cooperation between Government ministries. Written by participants of the 21st cycle of the Civil Service Commission's and the JDC Institute for Leadership and Israeli* governance's program for Senior Civil Servants.

Foster-Fishman, P.G.; Berkowitz, S.L.; Lounsbury, D.W.; Jacobson, S. & Allen, N.A. (2001). Building collaborative capacity in community coalitions: A review and integrative framework. *American journal of community psychology*, 29(2), pp. 241-261.

Gardner, H.K. (2016). *Smart collaboration: How professionals and their firms succeed by breaking down silos*. Harvard Business Review Press.

Giguère, S. (Ed) (2007). Publishing, OECD & Giguère, Sylvain & Local Economic and Employment Development (Program) & Organisation for Economic Co-operation and Development & Source OECD (Online service) (2007). Baltic partnerships: integration, growth and local governance in the Baltic Sea Region. Organisation for Economic Co-operation and Development, Paris: OECD Publishing.

Gintis, H. (2000). Beyond Homo economicus: evidence from experimental economics. *Ecological economics*, 35(3), pp. 311-322.

Gray, B. & Stites, J.P. (2013). Sustainability through partnerships*. Capitalizing on collaboration. Network for business sustainability, case study*.

Guo, C. & Acar, M. (2005). Understanding collaboration among nonprofit organizations: Combining resource dependency, institutional, and network perspectives. *Nonprofit and voluntary sector quarterly*, 34(3), pp. 340-361.

Harper, C.R.; Kuperminc, G.P.; Weaver, S.R.; Emshoff, J. & Erickson, S. (2014). Leveraged resources and systems changes in community collaboration. *American journal of community psychology*, 54(3-4), pp. 348-357.

Hobfoll, S.E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American psychologist*, 44(3), p. 513.

Ito, K. & Souissi, M. (2012). Managerial Accounting as a Tool for Corporate Strategy: Synergy Creation and Anergy Inhibition. *Journal of International Business Research*, 11(1), p. 63.

Jacobson, C.; Hughey, K.F.; Allen, W. J., Rixecker, S., & Carter, R. W. (2009). Toward more reflexive use of adaptive management. *Society and Natural Resources*, 22(5), pp. 484-495.

Jones, S. & Hooper, T. (2017). New Zealand's ICT Strategy: The Respective Roles of Senior and Middle Management in Promoting Collaboration and Innovation. *Asia & the Pacific Policy Studies*, 4(3), pp. 484-495.

Kirsch, C.; Chelliah, J. & Parry, W. (2012). The impact of cross-cultural dynamics on change management. *Cross Cultural Management: An International Journal*, 19(2), pp. 166-195.

Kolk, A. & Lenfant, F. (2015). Cross-sector collaboration, institutional gaps, and fragility: the role of social innovation partnerships in a conflict-affected region. *Journal of Public Policy & Marketing*, 34(2), pp. 287-303.

Lacerenza, C.N.; Marlow, S.L.; Tannenbaum, S.I. & Salas, E. (2018). Team development interventions: Evidence-based approaches for improving teamwork. *American Psychologist*, 73(4), p. 517.

Lambert, D.M.; Emmelhainz, M.A. & Gardner, J.T. (1996). Developing and implementing supply chain partnerships. *The international Journal of Logistics management*, 7(2), pp. 1-18.

Laursen, K. & Salter, A.J. (2014). The paradox of openness: Appropriability, external search and collaboration. *Research Policy*, 43(5), pp. 867-878.

Lee, S.M.; Olson, D.L. & Trimi, S. (2012). Co-innovation: convergenomics, collaboration, and co-creation for organizational values. *Management Decision*, 50(5), pp. 817-831.

Lehman, W.E.; Greener, J.M. & Simpson, D.D. (2002). Assessing organizational readiness for change. *Journal of substance abuse treatment*, 22(4), pp. 197-209.

LeSage Jr, E.C.; McMillan, M.L. & Hepburn, N. (2008). Municipal shared service collaboration in the Alberta Capital Region: The case of recreation. *Canadian Public Administration*, 51(3), pp. 455-473.

Liedtka, J.M. (1998). Collaboration: Synergy Revisited: How a "Screwball Buzzword" can be Good for the Bottom Line. *Business Strategy Review*, 9(2), pp. 45-55.

Linden, R. (2003). The discipline of collaboration. *Leader to Leader*, 2003(29), pp. 41-47.

Mattessich, P.W.; Murray-Close, M. & Monsey, B.R. (2008). Collaboration: what makes it work? A review of research literature on factors influencing successful collaboration. Amherst H. 2th Ed. St. Paul: Fieldstone Alliance.

Moseley, M.J.; Cherrett, T. & Cawley, M. (2001). Local partnerships for rural development: Ireland's experience in context. *Irish Geography*, 34(2), pp. 176-193.

Murphy, L.E. & Coughlan, J.P. (2018). Does it pay to be proactive? Testing proactiveness and the joint effect of internal and external collaboration on key account manager performance. *Journal of Personal Selling & Sales Management*, 38(2), pp. 205-219.

OECD (2006). *OECD Leed forum on partnerships and local governance. Successful Partnerships - a guide*. Retrieved from https://www.oecd.org/cfe/leed/36279186.pdf.

OECD (2015) Development Co-operation Report 2015: Making Partnerships Effective Coalitions for Action, *OECD Publishing*, Paris. http://dx.doi.org/10.1787/dcr-2015-en.

OECD (2005*). Oslo Manual: Guidelines for collecting and interpreting innovation data: Proposed Guidelines for Collecting and Interpreting Innovation Data*. 3rd Ed. Paris: OECD Publishing, 10.1787/9789264013100-en.

Olson, J.G. (2004). *Co-development: Collaborating across boundaries on joint strike fighter*. In M. Beyerlein, D. Johnson, & S. Beyerlein (Ed.). *Advances in Interdisciplinary Studies of Work Teams*, vol.

10, Complex collaboration: Building the capabilities for working across boundaries, pp. 27-58. UK: Elsevier Ltd.

Patel, H.; Pettitt, M. & Wilson, J.R. (2012). Factors of collaborative working: A framework for a collaboration model. *Applied ergonomics*, 43(1), pp. 1-26.

Piltan, M. & Sowlati, T. (2016). Multi-criteria assessment of partnership components. *Expert Systems with Applications*, 64, pp. 605-617.

Qin, C. & Fan, B. (2016). Factors that influence information sharing, collaboration, and coordination across administrative agencies at a Chinese university. *Information Systems and e-Business Management*, 14(3), pp. 637-664.

Reddy, P.; Desai, R.; Sifunda, S.; Chalkidou, K.; Hongoro, C.; Macharia, W. & Roberts, H. (2018). You Travel Faster Alone, but Further Together: Learning From a Cross Country Research Collaboration from a British Council Newton Fund Grant. *Short Communication*, 1-5. Available at: https://ecommons.aku.edu/eastafrica_fhs_fhs/15.

Roussos, S.T. & Fawcett, S.B. (2000). A review of collaborative partnerships as a strategy for improving community health. *Annual review of public health*, 21(1), pp. 369-402.

Salas, E.; Sims, D.E. & Burke, C.S. (2005). Is there a “big five” in teamwork? *Small group research*, 36(5), pp. 555-599.

Sergienko, I. (2001). A Cooperative Model of Business Management. *Problems of economic transition*, 43(10), pp. 53-64.

Snavely, K. & Tracy, M.B. (2002). Development of trust in rural nonprofit collaborations. *Nonprofit and Voluntary Sector Quarterly*, 31(1), pp. 62-83.

Spicer, Z. (2017). Bridging the accountability and transparency gap in inter-municipal collaboration. *Local Government Studies*, 43(3), pp. 388-407.

Sullivan, H. & Skelcher, C. (2017). *Working across boundaries: collaboration in public services*. London: Palgrave Macmillan.

Tanner, G. & Otto, K. (2016). Superior–subordinate communication during organizational change: under which conditions does high-quality communication become important? *The International Journal of Human Resource Management*, 27(19), pp. 2183-2201.

Thomson, A.M. & Perry, J.L. (2006). Collaboration processes: Inside the black box. *Public administration review*, 66, pp. pp. 20-32.

Van Tulder, R. & Keen, N. (2018). Capturing collaborative challenges: Designing complexity-sensitive theories of change for cross-sector partnerships. *Journal of Business Ethics*, pp. 1-18.

Vasudeva, G.; Spencer, J.W. & Teegen, H.J. (2013). Bringing the institutional context back in: A cross-national comparison of alliance partner selection and knowledge acquisition. *Organization Science*, 24(2), pp. 319-338.

Vatn, A. (2007). Resource regimes and cooperation. *Land Use Policy*, 24(4), pp. 624-632.

Wang, L. & Zajac, E.J. (2007). Alliance or acquisition? A dyadic perspective on interfirm resource combinations. *Strategic management journal*, 28(13), pp. 1291-1317.

Wanna, J. (2008). Collaborative government: meanings, dimensions, drivers and outcomes. In J. O’Flynn, and J. Wanna (Eds.), *Collaborative Governance A new era of public policy in Australia?* Canberra: Australian and New Zealand School of Government and ANU E-Press, pp. 3-12.

Wiener, M.; Gattringer, R. & Strehl, F. (2018). Participation in inter-organizational collaborative open foresight a matter of culture. *Technology Analysis & Strategic Management*, 30(6), pp. 684-700.

Willis, P. (2012). Engaging communities: Ostrom's economic commons, social capital and public relations. *Public Relations Review*, 38(1), pp. 116-122.

Wyrwa, J. (2018). Cross-sector partnership as a determinant of development - the perspective of public management. *Management*, 22(1), pp. 119-137.

A Comparative Study of Artisanal Food Producers' Motivations in Western Australia and Thailand

Mark Azavedo[6], **John Christopher Walsh**[7]

Abstract: The research objective in this study was to discover motivations of artisanal food producers in Australia and Thailand. This was mainly to inform farmers' market managers of the motivations of artisanal food producers, their clients, to better provide retail space to food producers. However, the same principle also applies to many other service providers, for instance banks, insurance companies and other financial services in developing products for this very specific group of small-scale business enterprises. Governmental advice and support services for these businesses will also benefit. Finally, out of a Royal Commission Report, chain supermarkets in Australia must source more from small-scale suppliers, yet they appear uninformed about who they are dealing with, their motivations and limitations, for instance not being able to supply large volumes. There has been virtually no research on artisanal food producers. Retailers have no research to inform them. Here was another gap to fill. Methodology for this study was interview-based qualitative, with data analysed through thematic content analysis. The paper's originality lies in two ways, meaning that it fills research gaps but also because its results are perhaps surprising. Artisanal food makers are primarily self-concerned, not community-concerned as the previous study would indicate.

Keywords: artisanal food; artisanal food production; Australia; producer motivations; Thailand

JEL Classification: L66

1. Introduction

1.1. Background to the Study

Strict definition of artisanal food is difficult, especially as "artisanal" makers on the one hand scale up their production (particularly through greater mechanisation) to keep up with demand, but also scale up hyperbole in their marketing to keep alive, even develop, the lifestyle elements of their purchase proposition. La Brea Bakery

[6] Phd Candidate, School of Management, Shinawatra International University, Thailand, Address: Bangkok, 10400, Thailand, Corresponding author: markazavedo@yahoo.co.uk.
[7] Assistant Professor, PhD, School of Management, Shinawatra International University, Thailand, Address: Bangkok, 10400, Thailand, E-mail: jcwalsh@hotmail.com.

proclaim “Passion and Love are baked in to each loaf of La Brea Bakery bread” (“Passion and Love”).

Attempts at academic definition of “artisanal” are frustrated by lack of research around artisanal production, never mind specifically artisanal food production. Artisanal cheese production fares a little better than average. Blundel (2016) looking at cheese production articulates a reasonable definition of artisanal. He regards artisanal as “a term used to describe production systems that are relatively small-scale and where hand-working and the skilled, intuitive judgement of the maker takes precedence over mechanized and automated methods” (Blundel, 2016).

McCracken (2006) adds to that when reviewing the artisanal movement, which would imply definitional content beyond just production processes. He sees the artisanal movement as having ten defining characteristics, to include, for instance, preference for a human scale, for hand-making, for things that are relatively raw and untransformed and unbranded. He continues that consumers have a preference for things that are personalised, but, in fact, talks more about heavy personal service propositions from small retailers, including at farmers’ markets.

Simplification of the product is seen as another defining characteristic of the artisanal approach, though McCracken (2006), through introducing the idea of connoisseurship as an element in the artisanal movement, creates a paradox. He puts forward a notion of the discerning palate. Complexity is exactly what the discerning palate discerns, and is often precisely what is sought out in a purchase. The world of highly processed food is often accused of blandness and uniformity. James Beard Foundation (“bringing back the flavors”) refer to “an artisanal movement that’s bringing back flavors of a world untainted by Wonder-bread and Kraft singles”. In McCracken’s (2006) listing this represents a characteristic concern of the artisanal movement with authenticity, very hard to define, but seen in terms of foodstuffs and cooking methods, though the current writers see this more in terms of lack of uniformity in flavour, shape, size, colour, the past realities. The last point ties back into the artisanal food movement’s dual concerns with locality and transparency. Provenance matters because terroir matters to the final product and exactly how it tastes, what inflections of flavour it has, what inflections of texture, shape, size and colour. Transparency enables the purchaser to know provenance clearly, but also such clarity around, say, transportation is important.

A further area of debate beyond what artisanal products and production are is what exactly are people purchasing? Is something bought beyond the goods, a simple transactional exchange, the singular focus of classical economics? Pine and Gilmore (1998) offer that customers are willing to pay for an experience, an experience that might be an inherent part of the transaction. Interacting with an artisanal producer, perhaps having a good chat, may be an example. Granovetter (1985) particularly challenges classical economics over its view of the rational consumer. Social factors outside of the transaction, through their embeddedness, can modify or totally override traditional economic assumptions. Customers may pay a premium where the social environment is appealing. The question may be rather more whether they are asked to pay that premium. McCracken (2016) tends to see what he labels as dark value as remaining dark, producers blissfully unaware, and remaining unaware, of value not forming part of the original value proposition in their business plan. The potential for revenue wastage is substantial.

As early as their 1995 survey, long before farmers' markets were as embedded as they are today or as aligned with new and growing food trends, Kezis *et al.* (1998), researching farmers' market attendees in Maine, USA found that around 75% of their respondents stated a willingness to pay more for conventionally grown produce at the farmers' market than the supermarket. The willingness was to pay a 17% premium. Subsequently, farmers' markets have become embedded, Mortimer (Stephens, 2015) regarding them as something that is part of entrenched Sunday morning behaviour in Australia. Logically, that entrenched behaviour, essentially regarded by Mortimer (Stephens, 2015) as relating with social amenity has been underpinned, for instance by the rise of vegetarianism. Roy Morgan Research (2016) report that in 2016 9.7% of Australia's adults followed a totally or near-total vegetarian diet. In Tasmania, Australia's most adoptive vegetarian state, the figure was as high as 12.7% (Roy Morgan Research, 2016). In New South Wales vegetarianism grew at the rate of 30% between 2012 and 2016 (Roy Morgan Research, 2016).

Moving on from locating value, never mind factoring it fully into the price proposition, to consider simply costs, quality, profit and pricing , Scott Morton and Podolny (2002) found in their study of the California wine industry winery owners who would forego profit maximisation in the aim of maximising the utility of the wine produced. They took this as a suggestion that there is a hobbyist element among producers, with those people perfectly willing to accept lower financial returns in favour of producing a higher quality wine. In UK, Christy and Norris (1999) found that speciality cheese-makers may well accept higher costs as the price for adopting their chosen processes and ingredients. They were not concerned to pursue best practice by its usual profit-maximising definition. Tregear (2003) sees that in sectors like crafts, to include cheese-making, lifestyle motivations are as important to producers as the usual commercial aims. De Roost and Menghi (2000) looking at Parmigiano Reggiano cheese-makers found privately-owned firms making out of passion, to satisfy which they were willing to receive lower returns, whereas the industrial producers were passionless, less concerned for their product and more concerned to maximise profits. This last point was a critical element in the reporting of DTZ (1999), who saw the speciality food arena as product focused as against company focused

The upshot is that the motivations of artisanal food producers, notably in the area of product versus financial returns, are unlikely to be similar to those of corporations. Perhaps more so, though, is the case that the artisanal producer may have a range of both personal and social motivations simply unheard of in the corporate environment. In this personalising motivations of artisanal producers may be quite different from one another, from one country or region, with its particular socio-cultural backdrop, to another.

1.2. Statement of the Problem

The broadest statement of the problem is the near-total lack of researched information about artisanal food producers, including their motivations, processes and limitations. This inhibits those dealing with artisanal food producers and the producers themselves. This study can only make a start in gleaning the much-needed information, which it has done at the base point of motivations. Accordingly, for the purposes of this study the statement of problem is “to discover the motivations of artisanal food producers”.

1.3. Purpose of the Study

It is hoped that this research will contribute to improved decision-making in a variety of agencies working with artisanal food producers. Those might include, but are not limited to farmers’ market managers in particular, but also other providers of commercial services to artisanal food producers. The financial services industry, for instance, comes to mind. Equally Government, Local Government and Non-Government advice and support services will better understand this body of small business clients and their often quite specific needs, for instance resulting from seasonality.

2. Literature Review

Available literature on artisanal production in general, let alone artisanal food production, is very limited. There is a substantial research gap in this field. The practical relevance of this lies in the area of planning by financial and other commercial institutions, including those who provide sales space and opportunities to artisanal food producers, along with government, local government and other public authorities in product development and advisory services and generally dealing with the demands of these very specific small businesses. The approaches required by all these institutions are likely to differ for the culturally different countries of Thailand and Australia.

An exception to the lack of previous research is Caricofe’s (2011) work. It is a general view of Ohio artisanal food producers and also covers their motivations. It is worth quoting Caricofe’s (2011) findings at length for later contrast with those of the researchers on this occasion. The knub of her argument is that “Data revealed food artisans to be values-based individuals emphasizing product quality through their careful sourcing of ingredients (mostly local) and the use of traditional, time-consuming production methods” (Caricofe, 2011).

Additionally, Caricofe argued that “The food artisans studied expressed a strong desire to operate as locally embedded businesses, consistent with the ideas of Civic Agriculture. Their production practices and product quality goals reveal an alignment with the quality turn occurring in the food system, and a broadening of what the quality turn can encompass. While these artisans were not actively involved in an alternative food system movement as identified by other food system scholars, there were many similarities in terms of personal motivations and business practices among these artisans” (Caricofe, 2011).

Caricofe’s work is from USA. At least in English language, nothing has been written on artisanal food producers in Thailand, including on their motivations or their marketing, for instance through farmers’ markets and farm gate sales, though both occur. For Australia, the picture is somewhat different in that there is material on producers’ motivations in their sales and marketing, again, for instance, through farmers’ markets. Coster and Kennon (2005) noted highly significant increases in farmer income through three surveyed farmers’ market sites (86-94%), but also such elements as improved market intelligence through attending were noted, along with, for instance, promoting business and products and networking and enabling new local business arrangements.

Azavedo and Walsh (2017) in their quantitative study of vendors attending Victoria Park Farmers’ Market, Perth, Western Australia discovered the importance of five specific motivators to attend, to inform the public about one’s product, to learn about customers, to inform the public about artisanal products in general, to earn incremental income and to network with other businesses. When the motivations at Victoria Park were rank-ordered, the first time a singularly economic motivation can be seen is at position four out of five, and then only relating to incremental, not significant income. The hypothesis relating to significant income had been rejected by respondents as a motivator. This seems to cross-tabulate well with their findings in a parallel qualitative study. Literally, the only economic mention in that around reasons for attending was one participant’s “profitable sales (hopefully)”. Vendors kept using the word community and supporting the community was often offered up as a reason for attendance.

3. Methods

The research questions for this study were what were the motivations of artisanal food producers in setting up their business, then what were their motivations in continuing the business. The research was based from individual interviews of artisanal food producers representing established businesses in both Australia and Thailand. The interviewees were located through personal contact at farmers' markets, through third parties, and through online search to include farmers' markets, events and trade-fairs, food and beverage related articles and databases.

This research proceeded in the phenomenological tradition of seeking to interview or observe those closest to the phenomenon, in this case actual artisanal food producers, the classic beginning with the individual and his stream of experiences (Farver, 1966). The research followed an inductive approach. There was no predetermined theory. The qualitative data itself became the basis for the analytical structure. The particular inductive approach used was thematic content analysis. This involves analysing interview transcripts to identify themes within the data, ultimately to list a number of categories that inform the writing up of the material and the further categorisation of interviews. Interviews were semi-structured. The aim, following Burnard et al (2008), was a maximum of twelve categories to emerge as significant for consideration.

4. Results

4.1. Research Findings – Western Australia

The themes and categories that emerged in Western Australia included two over-arching themes, self-orientation and other–orientation/community-concern. Of those, for the majority of participants, self-orientation was the stronger theme. Categories within the themes included freedom, control and self-determination; pursuing a passion; self-discovery; self-realisation and engaging creativity; community health; community education; broad community support:

Self-orientated.

Sample statements contributing to the theme and categories

- Freedom, Control, Self-Determination – "I'm my own boss", "Master of my own destiny", "sick of working for other people", "waking up in the morning at a time I want to wake up", "It's totally up to me and that is just – it's worth gold", "setting my own hours", "suddenly I feel like the world is my oyster";

- Pursuing a Passion – "my passion project", "I used to work in the Government and I was totally bored shitless there";

- Self-Discovery, Self-Realisation, Engaging Creativity – “I’ve discovered things about myself I just didn’t know”, “I didn’t realise I was such an extrovert”.

Other–orientated/community-concerned.

Sample statements contributing to the theme and categories

- Community Health – “I wanted to eat healthy food and provide that to the general public”, “just to produce clean food”, “More for health and wellbeing of individuals”;

- Community Education – “we’ve educated people about mushrooms since we started”, “We actually run the classes to teach people about the bees”;

- Part of the Community and Supporting it in the Broadest Sense – “wanted to do something useful”, “We also wanted the community to have a product that was raw, so we sell unfiltered honey”, “I’ve been coming to this market for probably five to six years and you do develop a relationship with the people that you sell to every week”. “So, it’s been good for me because growing mushrooms, you don’t tend to mix with too many humans.”

All interviewees spoke, often with passion, of what can clearly be described as artisanal production, involving low volume/small batch production, using quality, often organic, ingredients, products handmade or at least with a low level of mechanisation and an understanding how further mechanisation would alter the quality, indeed nature, of the product. Environmental concern, for instance in waste minimisation was also mentioned.

This research revealed that personal or family health problems can quite often be a route into artisanal food production: “I used to play around with bread… because I’m celiac, and I really missed bread… My daughter came back from America – she’s gluten intolerant too – and she went crazy for them. So, every time she came back from America, she’d live on gluten free bread on toast with avocado and lemon”. Another baker became involved with gluten-free and sour dough because his first daughter is on the autistic spectrum. Gluten is unhelpful for autism and a range of behavioural issues. A final respondent revealed he established his whole business simply as a basis to return to Australia because of his mother’s ill-health.

No participant discussed income as a motivator, though one agreed that there has to be a survivable threshold level of income.

There are indications of gender difference in responses, women contextualising the business in terms of family, men not. The business as legacy for the children, time flexibility to be with the children, ability to involve the children in the business have all been mentioned by women. Women also mention self-discovery and learning whereas men do not.

4.2. Research Findings – Thailand

The same over-arching themes of self-orientation and other–orientation/community-concern revealed themselves for Thailand as Australia. Beyond that, though, not many similar underlying categories evolved out of the Thai study.

The list of categories for Thailand was both longer than Australia and more varied. Part of this came out of the researchers' insistence on involving both Thai and overseas ex-patriate artisanal food-producers in the study. Categories that emerged in Thailand were pursuing a passion; self-discovery, self-realisation and engaging creativity; pursuit of product perfection; a hobby; death/disablement of a partner; relocation; could not find a product; the position of expatriate women in the labour market; community health; community education; broad community support. Below are sample comments out of which both categories and themes developed:

Self-orientated

Sample statements contributing to the theme and categories

- Pursuing a Passion – "My passion is all about cooking", "My high", "Yes, we have a love affair with bread", "I'm doing something I'm doing with passion and dedication", "I'm very passionate on the back of it – you know without any passion or enthusiasm I think people would soon realise even just tasting your food that there's no passion, no enthusiasm";

- Self-Discovery, Self-Realisation, Engaging Creativity – "I like creating and being a creative person enables me to kind of tick really"," "I love just anything that's creative";

- Pursuit of Product Perfection* – "This is making better, making new cheeses", "He want better, so, he roast his own coffee beans", "Something better. Special coffee";

- Hobby – "I didn't know I was going to end up really making a business of it, I thought it was more of a hobby", "For fun. For learning, just then", "It was like a hobby", "And then from that hobby, it became my main business, my main occupation as I said";

- Death/Disablement of a Partner – "Unfortunately, a few months ago, my partner died, and then it's suddenly motivating to make a lot more money", "Yeah, because my husband he was ill. He cannot work";

- Relocation – "relocating to Thailand/Chiang Mai I needed to utilise some of my experience in trying to make a bit of money and have a nice life," "coming from a war environment, a non-peaceful environment, and having suddenly to take care of a spouse and two new-born babies in a peaceful environment, which finally end up to be Thailand, I had to find an economical survival";

- Could Not Find a Product – “My motivation at the beginning was because I cannot find this kind of product in Pattaya”, “when I arrived in Thailand I couldn’t find any jams that I liked or chutneys, and so I started making some for myself”;

- Position of Expatriate Women – “because it’s difficult for a farang woman to do something here”.

*Note that Pursuit of Product Perfection has been included under self-orientated characteristics as it aligned with Passion. In no interview did the participant align this characteristic with customer care concerns or community concerns. Pursuit, often obsessive, of product perfection was seen as an end in itself, not even a marketing end, perhaps also significant of an involved hobbyist.

Other–orientated/community-concerned.

Sample statements contributing to the theme and categories

- Community Health – “So on the side of my business I start to became a little nutritionist let's say. But I was not certified, but I just help people as much as I can”;

- Community Education – “there are many numbers of people who really don't understand French cuisine, so I let them understand by keep doing day by day, even though not many people, but I hope some day they will understand”, “And we offering services for free, because I believe you have to spend time with people to educate people”;

- Part of The Community and Supporting it in the Broadest Sense – “we are facilitating the regroupment [sic] of people, which have the same meaning of life than us”, “how I can use my knowledge about tea or my knowledge about selling tea to actually contribute to save forest areas that are in danger, and I slowly started to realise that this a tool to make the forest more valuable so that the people in the mountains take more care of this forest that is so valuable for all of us on the planet”.

It is to be noted that the categories concerning relocation concerned overseas expatriates every bit as much as that concerning the position of expatriate women. Relocation could be driven by many factors, though the most usual was pursuit of a personal relationship, accompanied by the thought of “what do I do in Thailand?” One interviewee was escaping a war zone with his family. The reference to expatriate women refers to highly qualified women, who have had significant careers of their own but chose to support a marriage partner’s career move overseas. Their chances of getting work in Thailand are close to zero, which may matter little in terms of income but matters a lot in personal developmental terms of using and developing their skill-sets, using and raising their creativity, raising self-esteem, and simply being occupied. The category concerning the inability to find products in Thailand, so doing it oneself, then for others, is mainly a reference to expatriates, but also referred to some returnee Thais. For instance, there seems a pattern of Thais in the coffee industry having spent time living in Australia, picking up Australian tastes and presentation of coffee, then missing those on their return to Thailand.

Self-concern seemed the greater concern, as against community concern, if only at the level of having a hobby. One hobbyist's path into business was not simply accidental, but positively unwanted. He simply did not know what to do with the produce his hobby created. He began to give it away. Members of the wider local community heard of this and asked if they could buy. He agreed, but wondered if he was losing control. Next, though, other members of the local community started coming to his door and asking why he was not selling to them? He could see no solution but to scale-up production and sell to any and everybody.

This producer's path to community service was, of course, accidental, but, turning to other-orientated participants, it was noticeable that one participant, although always in business, was pushed in a new business direction by near-evangelical concerns about promoting healthy living, but likewise a major prompt for him setting up his business was people simply asking how he had lost so much weight?

5. Discussion

The two over-arching themes, Self-Orientated and Other-Orientated/Community Concerned showed in both Australia and Thailand. Underlying categories were dissimilar for the two countries. Two important exceptions were pursuing a passion and self-discovery, self-realisation, engaging creativity. Self-expression particularly came through. Worthy of substantial note is that the category covering freedom, control, self-determination, the most obvious for Western Australia, had no relevance in Thailand. These issues were literally mentioned by no interviewees in Thailand. Not being an employee, indeed active avoidance of being an employee, so important in Western Australia, was, for instance, simply not mentioned in Thailand. Perhaps deep cultural difference was being expressed, notably in terms of Thai the personality embracing compliance to institutional rules (eg Ounjit, 2012), with that maybe out of Thai Buddhism. Mabry (1979) speaks of Thai employee relationships and attitudes towards authority that are rooted in tradition and religion.

It should be remembered that several of the categories out of the Thailand data referred particularly to overseas expatriates and limitedly to returnee Thais. To the writers' knowledge none of the interviewees in Australia were recent migrants or returnees. The relevant categories were Relocation, Could Not Find a Product and Position of Expatriate Women.

The interviewees who mentioned being a hobbyist in Thailand were both Thais and overseas expatriate, with Thais often returnees. Perhaps the hobbyist element came over more strongly from Thais. Business was, perhaps, more often accidental in origin. One participant talked over and over about dreams, not aspirations, and certainly not business aspirations. His greatest dream was to have a Probat coffee roasting machine, arguably the finest and with a price to match, installed in the family home. The dream referred singularly to ownership of the machine, not referencing what it could do for the business. Often hobbyists seemed to align most strongly with the pursuit of Product Perfection, including at all costs, meaning that the finest ingredients may be purchased to the point of happily imperilling margins.

Death or Disablement of a Partner were mentioned both by overseas expatriates and Thais in the Thailand study. Such motivations were not mentioned by any Australian interviewees. The category Self-Discovery, Self-Realisation, Engaging Creativity was important in both Thailand and Australia. However, it was more often mentioned in Thailand than Australia. Also, Australia seemed to look more to self-discovery, Thailand more often to creativity, particularly true of overseas expatriates among participants in Thailand.

Comparing the results for both Thailand and Western Australia with those of Caricofe (2011) for Ohio, USA shows a broadly similar concern among interviewees with values and similar values held. Emphasis on a high-quality product showed as strongly as in Ohio and there were similar concerns within production processes, together with similar processes. The notion of a locally embedded business may have shown through less in the current research than Caricofe's, notably in that a number of interviewees in both Western Australia and Thailand were looking to distribute out-region or out-country. This is a matter of production scaling requirements and can be typified by Chiang Mai producers looking to or already distributing to Bangkok. Some Australian producers were in the early stages of supplying overseas, such as to Singapore.

Turning to the Azavedo and Walsh (2017) study of Victoria Park Farmers' Market vendors, perhaps its major finding was on lack of vendor concern over maximising income. The current study seems to have had similar results and for both Western Australia and Thailand. No indications were given of income-maximising behaviour and, in fact, there was no desire to discuss income at all, arguably though something of a Thai character trait, especially with strangers. The broad alignment with the Azavedo and Walsh (2017) findings implies a similar broad alignment of the current study's findings with those of Coster and Kennon (2005).

In terms of community motivations put forward by Azavedo and Walsh (2017), Caricofe (2011) and Coster and Kennon (2005) the present study finds similarly strong community-orientated motivations, but it must be remembered that these were secondary to self-concerned motivations.

6. Conclusions and Recommendations

The conclusion of this study must be that motivations across the geographic locations Western Australia and Thailand were something of a mixed bag. Noticeable is that that percentage overlap of motivations in each area rises substantially if overseas expatriates among participants in Thailand were factored out. This is worthy of further research in itself.

Even, though, with the overseas expatriates in Thailand factored in, there were numerous commonalities between Western Australia and Thailand, most notable of which was self-orientation being primary as a motivation, as against other-concern/community-concerned. These relativities need further study.

To particularise, the researchers sensed from a number of narratives that community concern, if only in the sense of customers of the business, but often substantially more, grew as the business grew. The current research in great measure missed the possibility of change narratives, accidental or purposeful. The idea of the business and the owners' motivations changing over time must be much more clearly addressed in future research than simply asking around motivations at the outset of the business and motivations to continue so as to allow greater, particularly more precise, articulation of change narratives. The latter may have key turning points, reactive as per the lady mentioned who faced her partner's death, but also pro-active. For instance, one participant in Western Australia recently e-mailed to say that she is in the process of arranging a move to Australia's East Coast, near Sydney, for the much larger local market. Coincidentally, exporting from Sydney would be cheaper and easier to arrange.

The position of each small artisanal food business in its life-cycle appears critical to understand for all the businesses providing services to artisanal food producers or seeking to trade with them. For instance, banks need to think carefully about interest charge on loans at different points in the business' life-cycle, can business assets begin to be used to back loans, as against the personal guarantees and assets of the business owner, and, more broadly, can there be more equitable sharing of risk and its costs between artisanal producer and bank? Can the banks, in effect, if not at law, become over time "shareholders" or if not that, more effective stakeholders in a successful artisanal food business? This may well be done by not pushing too hard and fast, being willing to accept gradual but sustained and sustainable growth and as a supplier ultimately profit from that. Worth remembering is that the relative bargaining power over loan costs (Ang, 1991) should change over time, perhaps to the small producers' favour. The artisanal food producers also need to do some thinking, and hopefully other businesses will be willing to negotiate with them over credit terms on invoice. For instance, invoice payment periods given could be too generous for healthy cashflow in the early days, as contracts, for instance to supply local hotels, are chased.

Future research on artisanal food producer motivations might also benefit from greater geographic spread, especially in that that might avoid specific local circumstance. This argument does not apply in Thailand. The two major artisanal food production centres are those where interviews were undertaken, Bangkok and Chiang Mai. Interviews were also undertaken in Pattaya, a minor centre. Beyond those there is a little production in Chiang Rai, and between Chiang Mai and Chiang Rai. Even thinking of individual producers and farms would only easily bring Chumphon as an addition to the picture, and even more limitedly Hua Hin, which has a fairly sizeable artisanal dairy. Australia, though, is an entirely different picture, many Australian cities having large agricultural hinterlands. Perth and Western Australia are not alone in very active agricultural hinterlands and substantial numbers of artisanal food and beverage producers. Adelaide and South Australia, for instance, come readily to mind. Local circumstance may be quite particular, for instance Western Australia also being one of Australia's two resource states where jobs and incomes have been badly affected by the decline of the minerals industry. Some interviewees in this study had left the minerals industry.

7. References

Ang, J.S. (1991). Small Business Uniqueness and the Theory of Financial Management. *Journal of Small Business Finance*. 1(1), pp. 1-13.

Azavedo, M. & Walsh, J. (2017). *Factors determining vendor attendance at Vic Park Farmers' market, Perth, Western Australia.* Food and Society 2017 International Conference, Kuala Lumpur, Malaysia, November 17-19.

Blundel, R. (2016). *Artisanal*. In Donnelly, C. (Ed.). *The Oxford Companion to Cheese*. New York, NY: Oxford University Press.

Bringing back the flavors. Retrieved from http://jamesbeard.starchefs.com/old/events/1999/05/011.html.

Burnard, P.; Gill P.; Stewart, K.; Treasure, E. & Chadwick, B. (2008). Analysing and presenting qualitative data. *British Dental Journal*, 204(8), pp 429-432, doi. 10.1038/sj.bdj.2.

Caricofe, E.E. (2011). Handcrafting the change they want to eat in the world? An inquiry into the who, what and why of artisanal food production in Central Ohio. *Master's Thesis*. Columbus, OH: Ohio State University.

Christy, R. & Norris, G. (1999). Discovery markets: Communicating product identities in specialised sectors. *British Food Journa*l, 101(10), pp. 797-808.

Coster, M. & Kennon, N. (2005). *New generation farmers' markets in rural communities*. Barton, Australia: Rural Industries Research and Development Corporation.

De Roost, K. & Menghi, A. (2000). Reconsidering "Traditional" Food: the Case of Parmigiano Reggiano Cheese, Sociologia. *Ruralis*, 40(4), pp. 439-451.

DTZ (1999). *UK Speciality Food and Drink Sector, 1999*. Edinburgh, UK: DTZ Pieda Consulting, on behalf of Food from Britain and MAFF.

Farver, M. (1966). *The aims of phenomenology: The motives, methods, and impact of Husserl's thought.* New York, NY: Harper Row.

Granovetter, M. (1985). Economic action and social structure: The problem of embeddness. *American Journal of Sociology*, 91(3), pp. 481-510.

Kezis, A.; Gwebu, T.; Peavey, S. & Cheng, H. (1998). A Study of Consumers at a Small Farmers' Market in Maine: Results from A 1995 Survey. *Journal of Food Distribution Research*, 29, pp. 91-99.

Mabry, B.D. (1979) Work behaviour in a Buddhist culture: The Thai experience. *Journal of Cultural Economics,* 3(2), pp. 57-73.

McCracken, G. (2006). *The artisanal movement and 10 things that define it*. Retrieved from: https://cultureby.com/2006/11/the_artisanal_m.html.

McCracken, G. (2016). *Dark Value: how to find hidden value in the digital economy* [Kindle version]. Retrieved from Amazon.com.

Ounjit, W. (2012). *Understanding Culture through Personality: from the World of a Thai University*. Paper presented at *International Congress on Interdisciplinary Business and Social Science, Social and Behavioral Sciences*, 65, pp. 212 – 217.

Passion and Love. Retrieved from https://www.labreabakery.com/history.

Pine, B.J. & Gilmore, J.H. (1998). Welcome to the experience economy. *Harvard Business Review*, July-August Issue, pp. 97-105.

Roy Morgan Research (2016). *The slow but steady rise of vegetarianism in Australia*. Retrieved from http://www.roymorgan.com/findings/vegetarianisms-slow-but-steady-rise-in-australia-201608151105.

Scott Morton, F.M. & Podolny, J.M. (2002). Love of money? The effects of owner motivation in the California wine industry.*Journal of Industrial Economics*, 50(4), pp. 431-456.

Stephens, K. (2015). *Farmers markets boom as city dwellers go back to the future*. Retrieved from https://www.brisbanetimes.com.au/national/queensland/farmers-markets-boom-as-city-dwellers-go-back-to-the-future-20150606-ghi5by.html.

Tregear, A. (2003). Market orientation and the craftsperson, *European Journal of Marketing*, 43(2), pp. 1621-1635.

Vicissitudes in Financial Reporting in Nigeria: What Role Does Corporate Governance and Ethics Play?

Adeyemi Adekunle Akeem[8], Mieseigha Ebipanipre Gabriel[9]

Abstract: This paper examined if corporate governance and ethics play a fundamental role in the vagaries in financial reporting in Nigeria. Expo-facto design and secondary data from annual reports and accounts and Nigerian Stock Exchange Factbook of selected quoted manufacturing firms during 2002-2017 were obtained. Governance measures of board gender diversity (BGD) and board chairman shares ownership (BCSO), as well as ethics was measured by dummy variables. Fixed and random effects regression models were employed to validate the nexus between the dependent (financial reporting) and independent (corporate governance and ethics) variables. Based on the analysis, of data, it was revealed that corporate governance and ethics have a major role in the vicissitudes in financial reporting, especially in the aspect of performance measures of corporate entities. Also, it was found that corporate governance measures of board gender diversity and board chairman shares ownership and ethics jointly and significantly influence financial reporting among quoted manufacturing companies in Nigeria. Hence, it was recommended among others that regulatory bodies of quoted companies in Nigeria should established more governance codes that help in including more women on the board as well as emphasizing board chairman shares ownership so as to promote financial reporting of quoted companies in Nigeria. In addition, SEC should ensure that codes of governance provisions be strictly adhered to by quoted companies as it will promote transparency and accountability in financial reporting.

Keywords: Financial Reporting; Corporate Governance; Ethics; Fixed and Random Effects

JEL Classification: B26

1. Introduction

In recent times, there are quite a number of vicissitudes that have rocked financial reporting in both developed and developing nations. Fundamental among these vicissitudes as opined by Azim (2012), Derry (2012), Gardberg, Zyglidopoulos, Symeou and Schepers (2017), encompassed harmonization of accounting standards, initiation of new corporate governance codes, and ethical issues. These vicissitudes

[8]Department of Accounting, Faculty of Administration and Management Science, Olabisi Onabanjo University, Nigeria, Address: Ago-Iwoye, Ogun State, Nigeria, E-mail: kunleadeyemi01@gmail.com.
[9] Department of Accounting, Faculty of Administration and Management Science, Olabisi Onabanjo University, Nigeria, Address: Ago-Iwoye, Ogun State, Nigeria, Corresponding author: ebigabriel2007@yahoo.com.

no doubt, have transformed the manner in which financial reports are prepared and presented to stakeholders. Regardless of the role played by these vicissitudes *inter-alia* in financial reporting, there are questions as to whether or not if they positively or negatively affect financial reporting (Adams & Ferreira, 2009; Hadani & Coombes, 2015; Liket & Maas, 2016).

In Nigeria, there is the outcry that followed the initiation of recent governance codes, harmonization of accounting standards, given the enormous collapse of corporate entities, unresolved ethical dilemmas, if they can mitigate the hullabaloo rocking financial reporting. Consequent upon the above, this paper attempts to dissect whether corporate governance and ethics play a fundamental role in the vagaries in financial reporting. The remaining part of this paper is sectioned as follows: review of related literature, methods, results, discussion, conclusion and recommendations.

2. Review of Related Literature

Overview of Financial Reporting

Financial reporting or reports are statements usually prepared and presented to users of financial statements. Such reports consist of statements of comprehensive income, financial position, cash flows, changes in equity and notes to account. Profoundly, financial reporting is premised on certain accounting concepts/conventions which are geared towards guiding how year-to-year accounting reports are disclosed (Derry, 2012). Notwithstanding the underpinnings in the preparation of financial reports, some stakeholders perceived lack of transparency in financial reporting given the weaknesses in corporate governance and ethical dilemmas facing most entities in Nigeria, the world over.

In a bid to reinforce transparency in financial reporting, international accounting was initiated; new local and global governance codes were developed (Okolie, 2014). International accounting provides guidance on the type and nature of information that is material, which are meant to be included in the financial statements of corporate entities while governance codes dictate how corporate entities are run. This is because knowledge of the information reported in the financial statements will give users of financial reports a better understanding of the state of affairs of the entity and facilitate informed decision; hence the need to revitalize issues relating to governance and ethics in financial reporting (Uddin, 2013). These needs were peculiar to both developed and developing nations like Nigeria. More importantly is the fact that the international accounting led to the transition from local GAAP (SAS) to international GAAP (IFRS), which is being practiced among countries that have adopted and implemented it and establishment of the recent governance codes for quoted companies in Nigeria.

Corporate Governance

Corporate governance according to Cadbury (1992) is a system via which firms are guided and controlled. Corporate governance is seen as actual delineation of rights and responsibilities of each group of stakeholders. Oluyemi (2005) sees corporate governance to be of special importance in ensuring transparency in financial reporting and successful realization of firms' strategies. In the view of Uddin (2013), corporate governance is a set of processes, policies, laws and institutions affecting the way a corporation is controlled. The consequences of ineffective governance systems have perhaps, led to corporate failure. Thus, governance characteristics that promotefinancial reporting are desirable by corporate entities. The corporate governance characteristics among others include board size, board independence, board gender diversity, CEO shares ownership, board chairman shares ownership, audit size and audit committee independence.

Corporate governance also includes the nexus among the numerous stakeholders involved and the goals for which the corporation is governed. Corporate governance is believed to have one form of impact or the other on financial reporting, depending on the financial and legal structure in place, which in turn, exerts a differential influence on entities' results (Agrawal & Knoeber, 1996; Azim, 2012; Man & Wong, 2013). In Nigeria, the emphasis on the need for corporate governance sprung up with the incidence of fraudulent reporting. This was caused by poor governance, management, high gearing ratios, overtrading, creative accounting, and fraud.

No doubt, corporate failures in Nigeria and the world over, have kept corporate governance on the lens; thus making shareholders and all other stakeholders to place high demand for effective corporate governance in financial reporting.In order to meet with the soaring demands by shareholders for effective corporate governance, numerous codes of governance were initiated in Nigeria such as the Central Bank of Nigeria (CBN) reviewed code 2014, Bank and Other Financial Institution Act (BOFIA) code, Securities and Exchange Commission (SEC) reviewed code 2011, National Insurance Commission (NAICOM) code 2009, and Pension Commission (PENCOM) code 2008. Hence, the need for corporate governance is to enhance transparency and accountability in financial reporting of corporate entities.

In this paper, two governance characteristics were employed: board gender diversity and board chairman shares ownership. First, board gender diversity depicts the varied personal characteristics that make the workforce heterogeneous (De Cenzo & Robbins, 2005). Board gender diversity can be said to be those varied personal characteristics and physical differences in people who are members of the board that make the board heterogeneous, and more effective in proffering wider range of solutions. It is worthy to note that women play an important role in compliance with legal aspects and corporate performance (Kastlunger, Dressler, Kirchler, Mittone, & Voracek, 2010).

Second, board chairman shares ownershipis a major issue in corporate governance. Corporate governance literature has documented that corporate shares ownership is concentrated on the hands of controlling shareholders around the world (Claessens et al., 2002). La Porta et al. (2000) argued that the prevalence of board chairman shares ownership concentration can be attributed to weak investor protection. Concentrated ownership is a way to solve the agency problem between managers and shareholders; however, it creates another type of conflict of interests: the controlling shareholders and minority shareholders (Desai & Dharmapala, 2008). From the management entrenchment perspective, board chairman shares ownership provides incentives and opportunities for controlling shareholders to extract firm resources at the expense of outside minority shareholders (Fan & Wong, 2002).

Ethics in Accounting

Ethics has its root in Greek word “Ethos” which translates as customs, conduct or character. Ethics is concerned with the kinds of values and morals individual find desirable and appropriate. According to Northouse (2013), ethics is concerned with the virtuousness of individuals and their motives. Many people and organisations claim to be “ethical”; they often attempt to codify their ethics in order to prove their ethical character. For instance, the International Federation of Accountants (IFAC) establishes code of ethics for professional accountants to include integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

The code of ethics for professional accountants according to Rodin (2005), play a major role in financial reporting and no doubt dictates how preparers of financial reports should perform their responsibility to stakeholders. Thus, ethics is considered a fundamental issue and cannot be undermined in financial reporting. Consequent upon this, we believe that ethical dilemmas may have contributed to the vicissitudes in financial reporting in Nigeria, the world over.

Theoretical Framework

The theoretical framework of this paper is anchored on the utilitarianism theory. The utilitarianism theory was propounded by Kant (1965). The theory focused on the notion of maximizing the ultimate value of good (utility) for the ultimate number of individuals. The basis of utilitarianism as noted by Masten (2012) can be attained in consequentialist settings, where the ends finally justify the means. There are two diverse forms of utilitarianism: first is the rule-utilitarianism (emphasis is on the maximization of happiness with respect to the actions to a particular rule and the second is act-utilitarianism, which evaluates the probable rule and considers the greatest happiness that results from this action (Audi, 2007).

The relevance of this theory to this study is that accountants are expected to utilize a specific rule (i.e. accounting method choice) so as to maximize the delight of shareholders such that their actions to a specific rule is in conformity with the Generally Accepted Accounting Standards (IFRS). The rule-utilitarianism lays the foundation for accountants to follow these accounting method choices in their execution of their accounting tasks (i.e. in the preparation of financial reports). The rule-utilitarianism thus implies that when these accounting method choices are duly followed, accountants will not engage themselves in actions that may be detrimental to the shareholders.

3. Methods

This study adopts the expo-facto design and data were obtained from annual reports and accounts and Nigerian Stock Exchange Factbook of selected quoted manufacturing firms during 2002-2017. A sample of forty-four (44) manufacturing firms was obtained based on availability of the required data for investigation. Thus, firms with financial statements covering 2002 to 2017 were obtained. Corporate governance measures of board gender diversity (BGD) and board chairman shares ownership (BCSO), as well as ethicswas measured by dummy variables. This study employed panel data and fixed and random regression models between the hypothesized nexus between the dependent (financial reporting) and independent (corporate governance and ethics) variables. The general form of the model is specified as:

$$Y_{it} = \beta_0 + \beta BC_{it} + \mu_{it} \qquad \textit{(eq. 1)}$$

On the basis of equation 1 above, the model of the study is specified as follows:

$$FRP = f(BGD_, BCSO, ETH_)) \qquad \textit{(eq.2)}$$

$$FRP_{it} = \alpha_0 + \alpha_1 BGD_{it} + \alpha_2 BCSO_{it} + \alpha_3 ETH_{it} + \mu_{it} \qquad \textit{(eq.3)}$$

A-priori expectation is that α_1, α_2, α_3,> 0. In other words, the study expects that the parameter (α) of the explanatory variables (BGD, BCSO and ETH) will have a significant impact on financial reporting.

Description of Variables

FRP= Financial reporting (dependent variable: measured by value of profit after tax)

BGD= Board gender diversity is measured in terms of percentages of women in the board for company *i* in time *t*,

BCSO = Board chairman shares ownership for company *i* in time *t*

ETH = Ethics of firms *i* in time *t* (dummy variables: 0 and 1) *it*: = Represent all the 40 firms in the sample and 16years time period

μ_t: = Error term

4. Results and Discussions

Table 1. Descriptive Statistics of Dependent and Independent Variables

Statistics	FRP	BGD	BCSO	ETH
Mean	5.6785	3.2145	2.6784	1.0230
Median	0.1576	1.1205	1.0345	0.2310
Maximum	272.939	5.00	3.00	1
Minimum	-176.321	0	0	0
Std. Dev.	0.5212	0.7105	0.3565	0.5565
Skewness	10.2685	2.8140	2.3481	2.7455
Kurtosis	226.29	2.4223	2.9561	23.9065
Probability	0	0	0	0
Observation	704	704	704	704

Source: Researcher Computation via STATA 13.0

Table 1 above reports the descriptive statistics of the dependent variable (financial reporting: FRP) and independent variables (corporate governance and ethics). From the table above, the mean value of FRP, BGD, BCSO and ETH were 5.6785, 3.2145, 2.6784 and 1.0230 respectively while the median values are 0.1576, 1.1205, 1.0345 and 0.230 respectively. It is obvious from the descriptive statistics that FRP recorded the maximum (272.939) and minimum (-176.321) values while BGD, BCSO and ETH recorded the lowest value (0). Also, the enormous variation of the variables was captured by the maximum and minimum values of the variables. The implication is that there are significant variations in all the variables over the period. The standard deviations of the variables were 0.5212, 0.7105, 0.3565 and 0.5565 respectively for FRP, BGD, BCSO and ETH. This suggests that the variables are not constant over time. Since all the variables are not constant over time, this enabled the researchers in examining the nexus between financial reporting, corporate governance and ethics. The skewness of the variables ranged between 10.2685 and 2.3481 and all positively skewed.

Table 2. Correlation Matrix Result

VARIABLES	FRP	BGD	BCSO	ETH
FRP	1.0000			
BGD	0.0789	1.0000		
BCSO	-0.0820	0.0895	1.0000	
ETH	0.0149	0.1890	-0.0745	1.0000

Source: Researcher Computation via STATA 13.0

The result showed that there is association between each pair of the variables of study. The correlation matrix showed that all the variables were positively correlated with FRP except BCSO which was negatively correlated to FRP. More importantly, none of the correlation coefficients exceed 0.8, suggesting that there is the absence of multicolinearity among the pairs of independent variables.

Table 3. Fitness and Joint Significance Test of the Regression Model

Model Test	Goodness of Fit	Joint Significance	
	R-squared ($R^{2)}$	Test Statistics	P-value
Fixed Effect Regression	0.8170	18.41	.0000
Random Effect Regression	0.8910	29.56	.0000

Source: Researcher Computation via STATA 13.0

The R^2 of the fixed and random effect models are 0.8170 and 0.910 respectively. This implies that the fitness of all the models is good. It suggests that the fixed and random effect regression models respectively showed that 81.7% and 89.1% changes in FRP is explained by changes in the independent (corporate governance and ethics). That is, significant part of the variation in FRP is due to changes in the independent variables. Thus, all the models have a good fit and their estimates are valid for empirical inferences. The result of the joint significance tests showed that f-statistics of fixed effect model is 18.41 with p-value .0000. Correspondingly, the Wald test statistics of the random effect model is 29.56 with p-value .0000. This is a clear indication of the acceptance of joint significance of the independent variables in the regression model. Consequently, the independent variables considered jointly have significant effect on the dependent variable. This implies that the models passed the joint significant test showing that the independent variables are not only individually significant but also relevant jointly, hence play a role in the vicissitudes in financial reporting.

5. Conclusion and Recommendations

This paper attempts to explore if corporate governance and ethics play a fundamental role in the vagaries in financial reporting. Based on the analysis of data, it was found that corporate governance and ethics have a major role in the vicissitudes in financial reporting, especially in the aspect of performance measures of corporate entities in Nigeria. More importantly, it was concluded that corporate governance measures of board gender diversity and board chairman shares ownership and ethics jointly and significantly influence financial reporting among quoted manufacturing companies in Nigeria. On the basis of the findings of the study, it was recommended among others that regulatory bodies of quoted companies in Nigeria such as Securities and

Exchange Commission (SEC), should established more governance codes that help in including more women on the board as well as emphasizing board chairman shares ownership so as to promote financial reporting of quoted companies in Nigeria. In addition, SEC should ensure that codes of governance provisions be strictly adhered to by quoted companies as it will promote transparency and accountability in financial reporting.

References

Adams, R.B. & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 94(2), pp. 291-309.

Agrawal, A. & Knoeber, C. (1996). Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of Financial and Quantitative Analysis*, 31(3), pp. 377-397.

Audi, R. (2007). Can utilitarianism be distributive? Maximization and distribution as criteria in managerial decisions. *Business Ethics Quarterly,* 17(4), pp. 593-611.

Azim, M.I. (2012). Corporate governance mechanisms and their impact on company performance: A structural equation model analysis. *Australian Journal of Management*, August, pp. 1-25.

Cadbury (1992). *The Cadbury committee reports: Financial aspects of corporate governance.* London: Burgess Science Press.

Claessens, S.; Djankov, S.; Fan, J. & Lang, L. (2002). Disentangling the incentive and entrenchment effects of large shareholdings. *Journal of Finance,* 57(12), pp. 2741–2771.

Decenzo, D.A. & Robbins, S.P. (2005).Fundamentals of human resource management. *Journal of Law, Economics and Organisation,* 42(5), pp. 325-339.

Derry, C. (2012). *Advanced financial reporting: A complete guide*. England: Pearson Education Limited

Desai, M.A. & Dharmapala, D. (2008). Taxation and corporate governance: An economic approach. In: Schon, W. (Ed.). *Tax and Corporate Governance*. Springer-Verlag, Berlin, pp. 13-30.

Fan, J. & Wong, T.J. (2002).Corporate ownership structure and the informativeness of accounting earnings in East Asia. *Journal of Accounting and Economics,* 33(12), pp. 401-425.

Gardberg, N.A.; Zyglidopoulos, S.C.; Symeou, P.C. & Schepers, D.H. (2017). The impact of corporate philanthropy on reputation for corporate social performance. *Business and Society*, doi:10.1177/0007650317694856.

Hadani, M. & Coombes, S. (2015). Complementary relationships between corporate philanthropy and corporate political activity: An exploratory study of political marketplace contingencies. *Business & Society*, 54(6), pp. 859-881.

Kastlunger, B.; Dressler, S.; Kirchler, E.; Mittone, L. & Voracek, M. (2010). Sex differences in tax compliance: Differentiating between demographic sex, gender-role orientation, and prenatal masculinization. *Journal of Economic Psychology,* 31(4), pp. 122-139.

La Porta, R.; Lopez-de-Silanes, F.; Shleifer, A. & Vishny, R. (2000). Investor protection and corporate governance. *Journal of Financial Economics,* 58(5), pp. 3-27.

Liket, K. & Maas, K. (2016). Strategic philanthropy: Corporate measurement of philanthropic impacts as a requirement for a “happy marriage” of business and society. *Business & Society*, 55(6), pp. 889-921.

Man, C. & Wong, B. (2013). Corporate governance and earnings management: A survey of literature. *The Journal of Applied Business Research*, 29(2), pp. 391-418.

Masten, K.Y. (2012). *Organizational ethics in accounting: A comparison of utilitarianism and Christian deontological principles.* A thesis submitted in partial fulfillment of the requirements for graduation in Honors Program, Liberty University, Spring, pp. 1-20.

Northouse, P.G. (2015). *Leadership: Theory and Practice*. 7th Ed. London. Sage Publications Ltd.

Okolie, J.U. (2014). Corporate governance and audit committee in Nigeria. *Journal of Policy and Development Studies,* 9(1), pp. 226-233.

Oluyemi, S.A. (2005). *Banking sector reforms and the imperatives of good corporate governance in the Nigerian banking system*. Retrieved from www.ndic-ng.com/ pdf/cgovbk, pp. 1– 33. Retrieved 19/9/2018.

Rodin, D. (2005). *What’s wrong with business ethics*. Oxford: UNESCO, Blackwell Publishing.

Uddin, T. (2013).Corporate governance and firm performance. *Journal of Finance and Accounting,* 7(3), pp. 88-112.

Investment Funds as Financing Alternative to Revive Local Industry

Ioana Pop-Radu[10], **Mircea-Iosif Rus**[11]

Abstract: The paper is oriented toward identifying the benefits offered by investment funds as financing alternatives to those entities in need for funding, thus in financing their growth. The research is developed as a case study being carried out for private equity investments within the Romanian market. This alternative investment vehicle presents the most comprehensive range of operations carried out by investment funds and their example can expose both benefits and compromises. Methodologically, the analysis covers all stages of investment funds related to demarcation of the target entity, from selection, evaluation, implementation, monitoring until the multiplication of investment while liquidation is in place.

Keywords: investment funds; alternative funding; private equity;

JEL Classification: E22; G23; O11; O16

1. Introduction

Mutual fund investments topic is attractive for the latter researches as this domain (dynamic, market size and its growth) involves a wide area of studies, industries and countries. It is enhancing a great significance for both academic literature and global capital market, as complex connections are involved between capital allocation, financing decisions and economy.

Our approach gains relevance as it provides relevant alternatives in boosting the economy thourgh this investment vehicles – by funding companies and simultaneously - by supporting economic growth.

The latter development of capital markets, as well the developments of financial innovations have led to many institutions and financial instruments improving the

[10] PhD, Babes Bolyai University of Cluj-Napoca, Faculty of Economics and Business Administration, Cluj-Napoca, Romania, Address: Universitatii Str. 7-9, Cluj-Napoca 400084, Romania, Tel.: 0264 405 300, Corresponding author: ioana19radu@yahoo.com.
[11] PhD, Babes Bolyai University of Cluj-Napoca, Faculty of Economics and Business Administration, Cluj-Napoca, Romania, Address: Universitatii Str. 7-9, Cluj-Napoca 400084, Romania, Tel.: 0264 405 300.

financial intermediation system. Consequently, the actors involved in capital allocation have perfected a complex circuit in brokering the supply of financial investments (i.e. equity holders - investors) and demand for capital (i.e. users of capital - entrepreneurs in need of capital). As a result, this circuit of raising capital has been organized and concentrated in investment funds vehicles.

Given the pursued role of investment funds, we'll analyze them from the two ways:

• attracting capital funds i.e. establishment of the fund itself by selling investment units to investors - as shown in Figure 1;

• placement of accumulated funds in various securities on the financial market – i.e. financing other companies - as shown in Figure 2.

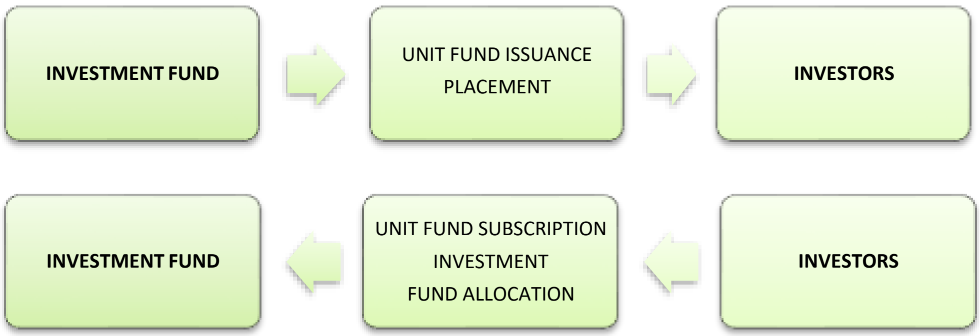


Figure 1. Fund initialization scheme

Source: Author's own processing

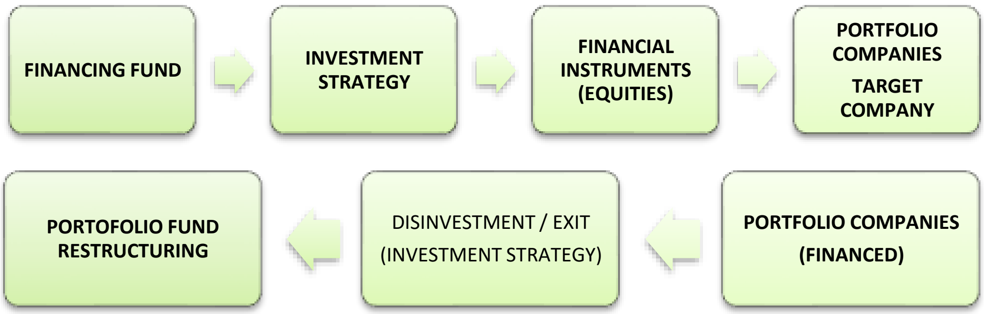


Figure 1. Fund investing scheme

Source: Author's own processing

On account of the first circuit (in which these investment funds are operating in the market), it is concluded that investment funds operate within three specific actions:

• issuing fund units in order to attract investment capital - action that involves raising funds from investors on account of subscriptions for the issued units;

• performing strategic investment allocations- the capital accumulation is placed according to a clearly defined investment strategy in various investment vehicles;

• c) investment multiplication through the redemption of fund units at the time of exit.

The process of gradual migration of household savings from bank deposits classic was largely directed to investment funds use, which recorded gradually a higher growth rate of the total attracted assets. This situation can be explained mainly on account of lower interest rates on bank deposits, higher disposable incomes, increasing financial education, the development of capital market, but also on behalf of the advantages offered (e.g. better diversification of risk, cost savings, professional management etc.) and higher returns on investments.

Investment funds became debt financiers by the fact that, by their significance, they have a certain percentage of the portfolio placed in money market instruments issued by the state. Here, a particular importance rises over the money market funds functionality, which, as per their organization is considered to have the bulk of capital (80%) allocated on medium and short period monetary instruments, such as government securities, treasury bills, bank deposits, certificates of deposit and bonds.

2. Mutual Funds (Private Equity) Financing Scheme

There is a rebound effect between the partners involved in this financing mechanism while involving investment funds. This connection is best described by Luckoff (2010) figure, below presented.

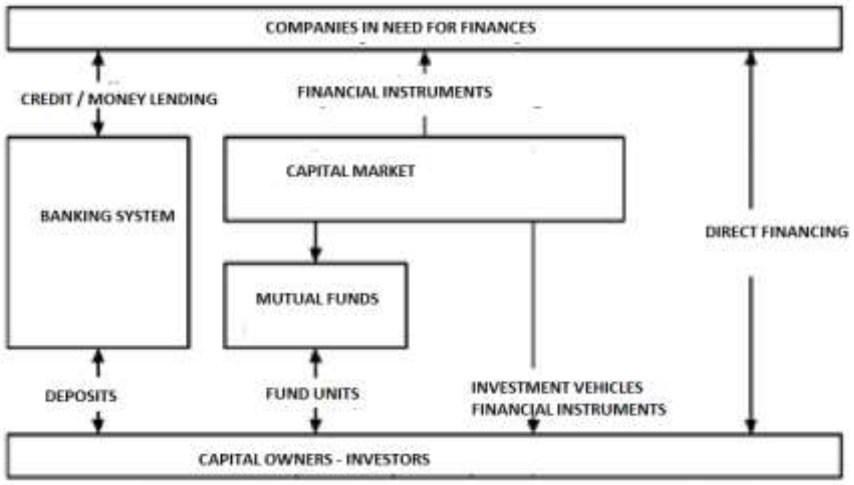


Figure 3. Financing cycle

Source: Author's own processing using (Luckoff 2010)

In other words, we found that following investing and financing cycle are emerging on a two-way relationship. Both traded funds and target companies may influence investors' expected performance.

For a better representation of investment funds financing cycle our analysis will be spreaded within *private equity market*. As a source of external financing, private equity funds foreshadows a partnership between the investment fund and the beneficial of the invested capital through a financing contract that will be based on either an issue of shares or bonds. Consequently, private equity capital intervention takes the form of a investment parnership by purchasing securities issued by those companies in need of capital funding.

From a macroeconomic perspective, EVCA[12] and Frontier Economics have identified the business benefits of private equity funds based on three indicators briefly presented below:

- Main activities: attracting funds and investing them to support companies;
- Outcomes: intermediate effects on investors, companies, sectors and the economy;
- Impacts: long-term improvements in companies, sectors and the economy.

[12] EVCA stands for European Venture Capital Association.

Based on all transmission channels, private equity industry supports economic growth by simultaneously following the investee companies, raising funds or closely following the markets. Figure 4 depicts all transmission channels.

Figure 4. Interconnections between private equity funds and economic growth

Source: Frontier Economics, 2013, p. 15

Summarizing, the potential impact of private equity investments may be defined by:

- supporting and promoting innovation as long as the investments support an excess of 80% of the budgets for research and development and innovation, all being around 40% of the capital raised from risk capital financing;
- increasing productivity by implementing new technologies, products or services. New developments and innovation implementation in production and management become effective solutions to use limited resources for multiplying effects;
- increasing competitiveness as a direct result of the competitive advantages arising from implementation of new technologies.

3. Case Study

3.1. Private Equity Financing in Romania

In Romania, private equity financing alternative began to develop only after 2000, being a young sector but with an extremely high growing potential. Even if this market is at an early stage development, it has already registered examples that proved to be profitable and able to develop the European market wide (Vasilescu, Giurcă & Simion, 2009).

Eyeing the Romanian market, international players such as Advent International (holds the largest investments in Romania with investments of hundreds of millions of Euros in companies like Brewery Holdings, Vodafone, Euromedia, Terapia and Dufa), AIG, GED Enterprise Investors, Innova Capital Oresa Ventures have not underestimated the market's potential and succeded to ensure earnings of tens of millions of Euros and multiplications up to 126 times (e.g. the case of Flanco and Flamingo merging within Oresa investments financing).

In a simplified approach these funds have accessed Romanian market and have multiplied their initial investments up to 5 times (Radu 2010b) as shown in Table 1.

Table 1. Summary of main private equity investments in Romanian market and their results

ADVENT INTERNATIONAL

Financing entity	***Sector***	***Strategy***	***Investing amount***	***Multiplied amount***	***Take over partner***	***Investing period***	***Multiplying coefficient***
Dufa	Chemical industry	*Buyout*	(2004) 18 mil EUR	(2008) 50 mil EUR	Bengross	4-5 y	2.78x
Terapia Cluj	Pharma	*Takeover*	(2003) 49,5 mil USD	(2005) 324 mil USD	Ranbaxy India	2-3 y	6.5x
Mobifon Connex	Telecom services	*Capital growth*	(1997) 85 mil USD	(2004) 2,5 -3 mld USD	Telesystem International Wireless Vodafone	8-9 y	29.4x

AIG Investments

Financing entity	***Sector***	***Strategy***	***Investing amount***	***Multiplied amount***	***Take over partner***	***Investing period***	***Multiplying coefficient***
Astral Telecom	Telecom services	*Buyout*	(mai 2007) 80 mil USD	(2009) 1,6 mld EUR	France Telecom, Deutche Telecom	2-3 y	20x

GED Capital Investments

Financing entity	***Sector***	***Strategy***	***Investing amount***	***Multiplied amount***	***Take over partner***	***Investing period***	***Multiplying coefficient***
SICOMED	Pharma	*Management replacement*	(2000) 6,8 mil EUR	(2005) 41,6 mil EUR	Zentiva	5-6 y	6.11x

ORESA Investments

Financing entity	*Sector*	*Strategy*	*Investing amount*	*Multiplied amount*	*Take over partner*	*Investing period*	*Multiplying coeficient*
FLANCO FLAMINGO	Distribution	*Partial exit*	(1997) 300.000EUR	(2006) 38 mil EUR		9-10 y	126x
LA FANTANA	Distribution	*Buyout*	(2001) 3 mil EUR	(2007) 35 -40 mil EUR	Innova Capital (secondary buyout)	6-7 y	11.67x

Source: Author's own processing

Generally, these foreign investment companies have invested in domestic companies belonging to the same sectors within the most relevant examples are the followings: for telecommunications (eg. Mobifon Connex tradeoff to Vodafone, Astral Telecom sale to Orange, Digital Cable Systems takeover by RDS RCS), for financial services (we have the case of Intercapital Invest, Kiwi Finance, Libra Bank, Credisson), for chemicals and pharmaceuticals (Terapia Cluj takeover by Ranbaxy, Sicomed - Zentiva case, Labormed-Shreea, Lupin, Dr Reddy's Laboratories), the industry of consumer goods (Bere Miercurea Ciuc - Brewery Holdings, as well as Vel Pitar, La Fantana, Oriflame), for electrical and electronic distribution (Flanco - Flamingo, Domo), in tourism services (Happy tours, Continental Hotels), paint industry (Policolor, Dufa), etc.

As an external funding solution, private equity funding has become a considered financing alternative while the bank loans conditions have been restrictive (Galeteanu 2009). With short-term interest rates of 13.1% and 11.8% (for 3 months EUR interest rates) and of 7.7% and 9.7% (for 10 years long term rates), 2008-2009 period surprised a weaker economic activity for the global market due to a lack of liquidity. Moreover, capital market listing has become barely viable source of financing starting from February 2015 through Aero quotation for small and medium companies. Until then, private equity funding was available to support companies to cover their illiquidity issues.

According SEEPEA, the fastest private equity investments growing was recorded in 2007 when investment rose by over 400% after one year's growth rate has exceeded only 60% of the local market. As a fact, the Romanian companies have captured the private equity funds attractiveness, being amounted at 156 million EUR and an average funding of 12 million RON for each targeted entity (Table 2)

Table 2. Evolution of private equity funds in Romania

Indicators	2007	2008	2009	2010	2011	2012	2013
Private equity (PE) investments in Romanian companies (thousand EUR)	156050	122584	82865	80338	48075	24276	48450
PE investments growth (Δ%)		-21.45	-32.40	-3.05	-40.16	-49.50	99.58
No of funded companies	13	20	17	11	9	8	10
Start-up	1	2	1	0	0	0	1
Growth	3	10	12	10	8	7	6
Buyouts	9	8	4	1	1	1	3
Medium investment/company (thousand EUR)	12003	6129.2	4874	7303	5341	3034.5	4845

Source: Author's own calculations using EVCA and SEEPEA statistics

Among the most attractive areas for private equity investments, energy, pharmaceuticals, telecommunications, financial services and retail trade provide the highest attractiveness, all 5 areas accumulating 50 % of the new invested amounts throughout the period 2007-2013 (Chart 1).

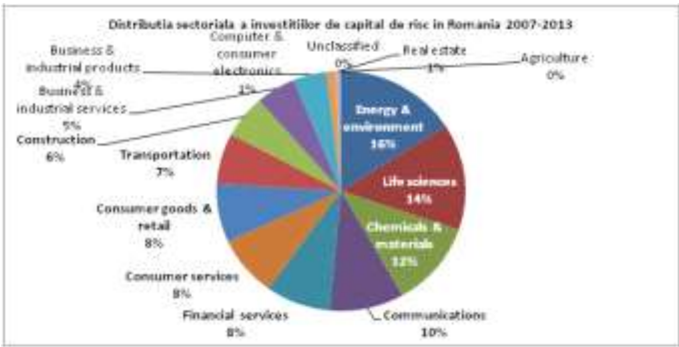


Chart 1. **Sectorial distribution of the private equity investments in Romania**

Source: Author's own calculations using EVCA și SEEPEA statistics

The best exit results were related to amounts invested in Romanian companies. More exactly, it was registered within the Healthcare sector, with significantly multiplied final amounts. At the same time, the same sector generated a maximum exit value of EUR 14.965 thousand EUR (2009), becoming the most attractive domain for private equity capital portfolio investments.

3.2. Data. Methodology. Results

Data considered are real and exemplifies the case of a local pharmaceutical company, namely SC SICOMED SA, which benefited three capital inflows from investment funds side and whose business was restructured under Zentiva name. This example has become a particular one defining best how private equity funds provide financing and add value to an entity. For example, following funds involvement, Zentiva new merged entity announced a turnover of 11 times higher after Sicomed was acquired. However, the takeover's success was not fully accompanied for all levels - it has been marked also by series of compromises that have included various restructuring strategies. Sicomed-Zentiva case has become a pillar among the major investment transactions during period 1997 and 2005 as it has followed a standard scheme on financing through private equity funds implication from investing to divesting/exit. Consequently, we'll proceed to analyze the financing scheme through three stages: at the time of investing, during funding period and at the time of exit. To ensure a pertinent analysis we report to same set of indicators during the three reporting stages e.g. turnover changes, net profit evolution and employment rate dynamics, which correspond to time period before 2000, during 2000-2005 and after fund's exit, once the new entity of Sicomed-Zentiva has been consolidated.

Before being a target company, Sicomed company had a 10 years vintage on the market and having one of the highest liquidity rates on the Romanian stock market. It has been traded on the Romanian capital market starting with 1998 and due to its international success on European pharmaceutical market for a wide range of products has been firstly financed by Venoma Holding[13] in 2000 with an placement of 6.8 million EUR through its fund GED Capital. With new investments, Venoma Holding had reached to owe up to 50.08% of the Sicomed (2004). At the time of targeting, Sicomed has been the market leader by quoting a 5.1% of the national market and maintained its stock undervaluated. With the capital infusion and speculating the stock valuation, Venoma Holding had invested another 10 million USD to restructure the managerial team, to improve the production gear along with new operational flows.

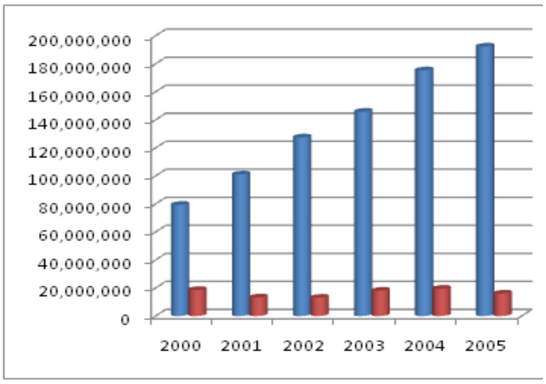


Chart 2. Turnover and net profit evolution during private equity financing

Source: author's own calculations

[13] Venoma Holding is defined by two private equity funds managed by GED Capital Development and Global Finance.

Note: Turnover marked in blue and net profit marked in dark red.

During fund's financing (2000-2005), Sicomed has registered growth in both assets and liabilities and hence has maintained liquidity and its solvability at optimum rates. Although the total number of employees has been significantly reduced from 2000 to 918 employees the financial results are much improved. While the total turnover has been 11 times multiplied during these 6 years and the profit has been maintained at the same level, the compromise made with employee's disengagement proved to be the opportunity charge. Starting with 2006, Sicomed had a total turnover of 63 million EUR, Venoma Holding sold through a public buyout its participation to a Czech pharmaceutical group i.e. Zentiva grup. Consequently, the new created entity, i.e. Sicomed-Zentiva has consolidated its market share to 25%.

At the time of exit (2005), Sicomed-Zentiva entity has obtained a revive defined by new and wider market, new distribution, new portfolio of products, increased competition, modern technologies, new production capacities, new research objectives and etc. Once restructured and launched on a new development path, the initial compromise has been slightly remitted and new employees have been involved in the new projects (new 200 jobs). Hence, the employment rates are pretty volatile these days as technology moves a step forward.

After exit, Sicomed-Zentiva followed same path in consolidating its market position and developing new products and accepted since 2009 other private equity funds to finance their operations (i.e. pension funds and ING International Romanian equity fund).

Another compromise accepted during these times has been the name changing from Sicomed-Zentiva to Zentiva only. The former national pharmaceutical enterprise has been removed from its naming but its identity cannot be erased. Nowadays the pharmaceutical sector keeps in consolidating the market position internationally and since 2009 Zentiva is part of Sanofi Avensis Europe group by taking over 96.8% of its capital.

3.3. Research Limits

We acknowledge that this research is restricted to local market and its results cannot be extended to other markets, but it provides a comprehensive and useful guidance material to anyone interested in finance and mutual funds investments. At the same time, the theme is attractive to all specialists and this research is foreshadowing a detailed case study of Romanian pharmaceutical sector as an example in establishing the advantages and/or disadvantages of a mutual fund investment scheme.

4. Final Remarks

Last 6 years demonstrated that Romanian capital market has joined European competition by reducing the fragmentation of the market from regulatory institutions unification of entities active in the capital market under the Financial Supervisory Authority (abr. ASF –i.e. Autoritatea de Supraveghere Financiara). At the same time, adapting national legislation to the European legislative framework has allowed the removal of discriminatory barriers between EU states, allowing access and authorization of foreign investment vehicles on the local market, while outsourcing national funds in the foreign market.

In addition, we found that the industry investment fund in Romania has registered a sustained rate of growth (both in the number of funds active in the market and the value of total assets managed by them), without being strongly affected by the contagion of latter economic crisis. Thus, despite the inconveniences arising on the global stock market in 2008, Romanian mutual funds recorded increases of over 86% up versus 2005 status, mainly due to rising capital inflows into equity and diversified funds.

Consequently, Romanian investment fund market enhances a proof of resistance to latter market shake and effectively, while banking system has been self-contained and restrictive, fund investments have become an available financing alternative.

Given that the stock market will keep liquidity levels at least at the scores obtained in 2012, the next period appears to be the dynamic for the investment funds market. Alike, attracting funding will provide support for new investments and portfolio investors will step up their assets allocations within the domestic market (Radu & Nistor 2010). Thus, the background to achieve a constant demand for investment funds allocations, the funding mechanism has to prefigure benefits for both funded companies and as well for investment fund's investors.

5. References

Arsani, A. (2015). Despre oportunitățile de investiții în România. *Piața financiară*, Martie 2015, pp. 74-75.

Cãtãlina, S. & Ioana, R. (2012). The Attractiveness of Harmonized Investment Funds Evidence on Romanian Investment Fund Market. *Ovidius University Annals, Economic Sciences Series*, 12(1), pp. 1660-1665.

Couch, Robert & Wu, Wei (2012). Private investment and public equity returns. *Journal of Economics and Business*, 64, issue 2, pp. 160-184.

Falat–Kilijanska, Ilona (2012). Private Equity and the competitiveness of Polish entreprises. *Oeconomia Copernicana*, 3, issue 1, pp. 89-114.

Galeteanu, N. (2009). *In lipsa creditelor, companiile se pot imprumuta la fondurile de private equity*. 25 Feb 2009.

Hernán, Herrera-Echeverri, Guillermo; Salazar-Duque, Juan & Jerry, Haar (2017). Private Equity and Devaluation in Emerging Countries. *Global Economy Journal*, 17, issue 1.

Johan, Sofia A. (2012). Institutional investment in private equity. Ch. 3, p. iii-iii in , Handbook of Research on Venture Capital: Volume 2, Edward Elgar Publishing, https://EconPapers.repec.org/RePEc:elg:eechap:13985_3.

Luckoff, P. (2010). *Mutual fund performance and Performance Persistance*. The impact of fund flows and manager changes. 1st Edn. Germany: Gabler Verlag,.

Moise, O. (2015). Capitalul caută mereu alternative profitabile. *Piața financiară*, Martie 2015, pp. 66-67.

Pontarollo, Enzo & Casè, Marco (2007). Private Equity Investments and the Italian Industry. *L'industria*, issue 4, pp. 679-702.

Vasilescu, Giurcă L & Simion, S. (2009). Facilitatea accesului întreprinderilor mici şi mijlocii inovative la fondurile de capital de risc. *Revista de Finanţe Publice şi Contabilitate*, no. 1, pp. 22-26.

Vasilescu, L.G. & Popa, A. (2011). Fondurile cu capital de risc – alteranativă de dezvoltare şi inovare pentru firme. *Analele Universității Constantin Brancusi din Targu Jiu, Seria Economie*, no. 1, pp. 204-213.

Xu, Xiaoqing Eleanor (2008). Global Perspectives on Venture Capital and Private Equity. ch. 8, pp. 187-209 in *Advances In International Investments Traditional and Alternative Approaches*, World Scientific Publishing Co. Pte. Ltd.

The True and Fair View Requirement in National Accounting Regulations of EU Member States

Claudia Catalina Ciocan[14]

Abstract: The acceptance of true and fair view, a concept of Anglo-Saxon origin, in European countries took place after the accession of Great Britain and Ireland into the European Union, in 1973, when the concept was introduced in the Fourth Directive. The Fourth Council Directive, adopted in 1978, presented the procedures for accounting valuation, the requirements for the quality of financial information, the generally accepted accounting principles and the format of the financial statements, *true and fair view* being among the requirements that affected the financial statements presentation. Through this paper we aim to identify whether true and fair view existed before it was presented in the Fourth Directive, the way it was presented therein and the way it was implemented into the national regulations of Cyprus, Latvia, Lithuania, Malta, Slovakia, Slovenia, Romania and Croatia. The study is built as a follow-up of three studies (Nobes, 1993; Aisbitt & Nobes, 2001; Dragneva & Millan, 2002), that traced the implementation of the concept in the national accounting regulations of the other twenty European states. This paper considers the situation for the remaining eight countries and puts them in the context of the earlier twenty. Through content analysis and literature review, this paper looks first at signifiers used in the Fourth Directive, afterwards at the signifiers in national regulations, finishing with the implementation of the *"true and fair view override"* in national accounting laws. Taking into account the replacement of the Fourth and Seventh Council Directives with Directive 34/2013, we follow the national regulation after the implementation of the latter, in order to summarize the overall perception regarding the role of true and fair view in financial reporting.

Keywords: true and fair view; accounting harmonization; financial statements; Fourth Directive; national accounting regulations.

JEL Classification: M41

1. Introduction

Accounting, like other professions, is dependent on specialized terminology and concepts, which are used to conduct businesses efficiently and to communicate information to stakeholders. It has also become increasingly international, through harmonization and convergence, requiring translation of accounting terminology, in order to ensure the efficient functioning of international capital markets (Evans,

[14] PhD candidate, Alexandru Ioan Cuza University, Iasi, Romania, Address: Carol I Boulevard, no. 11, 700506, Iasi, Romania, Tel.: 0232201602, 0232217000, Corresponding author: ciocan_claudia_catalina@yahoo.com.

Baskerville & Nara, 2015, p. 1). However, in accounting theory and practice there are strange notions, curious inconsistencies, and unlikely ways of addressing issues, which cause confusion among accountants and users of financial information alike. Definitely the most „bizarre" notion, as presented by Walton (1993), is *true and fair view*. This concept, considered the statutory objective of financial reporting, has achieved a genuine symbolic status both in the UK accounting framework and outside it (in particular within the European Community). Walton (1993, p. 49) states that the European accountants admit that they do not understand *true and fair view*, but they consider it an important notion, being seen as the main distinguishing concept between the „Anglo-Saxon" and the „Continental" approaches.

2. Interpretations of True and Fair View – Literature Review

Walton (1993, p. 50) categorizes the meanings attributed to true and fair view, by associating them with three basic ideas:

1) *true and fair view can be characterized as a legal residual clause, which means it can be considered the sort of clause which often is added to statutes, contracts and other legal documents, to cover circumstances other than those specifically foreseen in other clauses in the document ... in effect, this kind of clause operates as a safety net put in by the creator of the contract to catch any eventuality not specifically foreseen in the other clauses and is not generally expected to be invoked except in unusual circumstances;*

2) *true and fair view can be considered an independent concept, meaning that it constitutes a supreme objective. . . as such, it can be defined independently by the accounting rules;*

3) *true and fair view can be used as a code for the representation of generally accepted accounting principles, in which case it is based on the notion that accounting principles do not represent a coherent, rationally consistent set of principles but rather a set of pragmatic responses to measurement problems.*

A first interpretation may be considered that of Kettle (1948), cited in (Vladu, Matis & Salas, 2012, p. 105). The author states that „true and fair view" implies that all legal and other essential information is not only available but also presented in a form in which it can be appreciated properly and easily. Chastney (1975) states that „true and fair view, a concept of British origin, emphasizes that, in order to achieve a correct image, financial reports are bound to present impartial information in a manner that allows the reader to understand them". The closest form to a complete and comprehensive definition of this concept belongs to Lee (1981) which describes it as a *„term of art".* He asserts that the true and fair view requires the presentation of accounts drawn up in accordance with the Generally Accepted Accounting

Principles, using figures as accurate as possible, estimates as close to reality as possible and arranging them so that the resulting image is the most objective possible, without errors, omissions, distortions or manipulations. Hoffman and Arden state that true and fair view does not have a definition because it was understandable by itself, as a simple English term, but whose application could indeed cause some difficulties (McGee, 1991). Later, Arden (1997) presents it as a dynamic concept, subjected to a continuous rebirth. The author does not believe that a definition or a synonym can be found for this concept, but it can be described by a number of its features. This view is supported by Chambers (2001) which states that the meaning of true and fair view remains the same over time, but its content may be altered. Klee (2009), cited in (Tabără & Rusu, 2010, p. 327) considers that the objective of true and fair view of financial reporting has the role of a final test, designed to ensure that the users of the financial statements compile the information in accordance with the economic reality. Alexander and Jermakowicz (2006, pp. 132, 161) state that the purpose of financial reporting is to give an understanding, which is not misleading, of the underlying economics of an enterprise and that rules, by themselves, are inadequate. In their view whether or not they are based on principles, some sort of Type A criterion, such as *true and fair*, or not misleading, is essential. Cunningham (2003) presents a statement from the Annual Accounts of the United Kingdom stating that "a term such *true and fair view* could end up meaning many more things than the different things it represents to different groups of the same or different societies". Kosmala-MacLullich (2003) considers that the construct of the *true and fair view* constitutes a locus of reflection for the establishment of a mutually intelligible foundation for financial reporting in the New Europe including applicant states for EU membership. The author concludes that *true and fair view* is a contingent construct which resides in a particular socio-economic, historic and cultural context and is understood differently outside it. As for *the true and fair view override* Van Hulle (1997) asserts that its introduction in regulation means an admission of modesty on behalf of the regulator. No regulator is perfect and the accounting rules and standards which have been designed for the majority of cases can never take account of all cases which may arise in practice.

3. Research Methodology

This study was built as a follow-up of three other studies (Aisbitt & Nobes, 2001; Dragneva & Millan, 2002; Nobes, 1993) which together pursued the implementation of the *true and fair view* concept in the national accounting regulations of twenty European countries (France, Germany, Belgium, Italy, Luxemburg, Netherlands, Denmark, Ireland, United Kingdom, Greece, Portugal, Spain, Austria, Finland, Sweden, Estonia, Poland, Czech Republic, Hungary and Bulgaria). This paper investigates the situation of true and fair view in the eight remaining countries

(Cyprus, Latvia, Lithuania, Malta, Slovakia, Slovenia, Romania and Croatia) and puts them in the context of the other twenty. Through a content analysis applied over the Fourth Directive and the national accounting regulations in accordance with its provisions, for the analyzed countries, we followed: the signifiers used in the Fourth Directive, the signifiers used in national accounting regulations; and the implementation of the „true and fair view override" in national accounting laws.

4. The Concept of *True and Fair View* in the Fourth Directive and its Implementation into National Accounting Regulations

The implementation or the true and fair view concept into the accounting regulations of the countries under continental influence took place after 1973, precisely after the adherence of Great Britain and Ireland to the European Union, when it was introduced in the Fourth European Directive *based on Article 54(3) (g) of the Treaty on the annual accounts of certain types of companies*. A Directive is a decision of the European Commission, which aims to harmonize all legislative system of the member states of the European Union (Feleagă, 2006). The Fourth Council Directive, which was issued in 1978, imposed the procedures for accounting valuation, the format of the financial statements and the generally accepted accounting principles. At the time of the accession of the United Kingdom to the Anglo-Saxon system, there was a draft of the Fourth Directive (developed in 1971 under the leadership of dr. Elmendorff, German expert), with strong German and French influences (Blake et al., 1998). At the request of Great Britain and Ireland, in the following draft (developed in 1974), the *true and fair view* concept was introduced, being retained in its final version, issued in 1978. Since then, the concept has been developed and reached a much higher degree of use in the countries which adopted the continental accounting system (Nobes & Parker, 2004). The accounting harmonization under the Fourth Directive imposed *true and fair view* as a main element of the group of accounting principles, considering that the other principles are under its subordination (Tureac, 2008).

An interesting fact related to the existence of this concept can be identified in its own adoption, interpretation and translation, from a linguistic point of view, in the accounting regulations of the member countries of the European Union. The implementation of the Fourth Directive in national regulations took place in different periods, usually involving a period of at least two years from the time of the accession of that state to the European Union. To begin with, the Directive has been translated into the four languages existing at that time (German, French, Dutch, and Italian). As other states have become members, the Directive has been translated to help the standard setters in each state. As it can be seen from the extracts from the Fourth Directive, in the various languages recognized at EU level, presented in Table 1 - Appendix 1, the signifiers for *true and fair view* in European countries are relatively diverse. Table 1 in Appendix 1 adds seven new language versions to the 20 others in terms of their approximate literal meanings in English, given that Cyprus is covered by the earlier Greek version.

Cyprus was placed under British administration in 1878 and officially annexed to United Kingdom in 1914. In 1948, Cyprus adopted the UK Accounting Regulations (The Companies Act 1951) (Walton, 1986, p. 356), true and fair view being included within it. Being annexed to Greece since 1974, in 2004, when it joined the EU, Cyprus developed a new set of accounting regulations, in accordance with the Fourth Directive provisions, which were actually the Greek ones. In the new regulations, the Cypriot standard setters maintain "the real image", presented in Greek national regulations.

Latvia, Malta and **Lithuania** joined the European Union in the same year, more precisely in 2004. Malta was the first to introduce the true and fair view concept. Being a former British colony, Malta took the UK's Companies Act as a model, which led to the establishment of the concept in the national regulations (Alexander & Micallef, 2011). As far as the terminology itself is concerned, all three countries maintain the concept presented in the translated versions of the Directive.

Slovakia and **Slovenia** concluded in 2004 the adoption of the Fourth Directive and introduced it into national regulations as *true and fair view*, maintaining the terminology presented in the translated versions of the Directive.

In **Romania**, *true and fair view* was introduced into the accounting regulations on January 1st, 1994, alongside with the implementation of the accounting system according to the French model. At that time, six accounting principles were also assimilated: the going-concern principle, the consistency principle, the prudence principle, the accrual principle, the intangibility of the opening balance sheet, and the separate valuation principle (Brabete & Drăgan, 2008). As for the terminology, the Romanian version of the Fourth Directive and the accounting regulations introduce *"faithful image"*.

Croatia implemented the requirements of Directive 34/2013, which replaced the Fourth and the Seventh Directives, in 2015, two years after its accession to the European Union. Although not implemented, Croatian accession has also made available the Croatian version of the Fourth Directive, which proposed a "true and honest presentation". At the time of adopting European requirements, the specifications of the new Directive 34/2013, which proposed the "true and fair view" concept, were taken into account. The option retained in national regulations was the „true and fair presentation", which could be considered a compromise of the two existing choices in the European directives.

As it can be seen from Table 1 (Appendix 1), translations of the concept are not, as a rule, literal translations of the original English expression "true and fair view"

(Nobes, 1993; Aisbitt & Nobes, 2001). The prescriptive nature of the texts of the European Directives allowed each country to adopt and adapt the concept to their needs. Its translations, as well as its implementation under national accounting regulations, demonstrate that countries have managed to impose their own culture on a foreign concept (Nobes, 1993). Thus, we can agree with Canibano (2007) which claims that the interpretation of the true and fair view concept in the EU Member States oscillated between two orientations, a legalistic one and an economic one. According to the first orientation, the financial statements represent true and fair view when drawn up in accordance with current legal regulations (such as the case of France, Spain and Germany), while according to the economic orientation, the financial statements must report the economic reality of the company, although it does not comply with certain legal provisions (eg UK, the Netherlands, Denmark). Also, from the literary translation of the adjectives involved in the presentation of the concept, we can observe that some regulations use a unitary formula (eg "*faithful image", "real image*") and others, a dual expression (eg „true and fair view") as presented in figure 1 – Appendix 2.

Further variations can be observed regarding the transposition of the *true and fair view override* in national laws. Once it became an EU member UK has favored both the introduction of true and fair view and its overriding status over all other provisions. When they introduced the concept into national regulations, each country had the opportunity to reconsider the position given to true and fair view concept. Thus, *true and fair view override* was implemented in *France, Italy, the Netherlands, Ireland, the United Kingdom, Portugal, Spain, Finland, Lithuania, Malta, Czech Republic, Slovakia, Slovenia, Hungary, Bulgaria* and *Romania*. The other countries do not recognize its overriding status.

One aspect of the study is related to the question: is there a single *true and fair view* or are there several? Following Table 1 - Appendix 1 we can observe that the concept was transposed in an articulated form in some countries (as in the case of Spain, Greece and Cyprus): "the faithful picture" or "the real image" (strictly taking into account the grammatical form of the term), which seems to inspire the view that there is only one *true and fair view*. In the case of the other states, the form introduced by the Directive has preserved "a true and fair view" (with the other linguistic correspondents). As can be noticed from the requirements of the Directive and, implicitly, from national regulations, usually the references are to *"a true and fair view"* rather than *"the true and fair view".* As McGee (1991, p. 885), claims, the choice of an indeterminate article in this case is a matter of considerable importance. From a semantic point of view, it reinforces the argument that there is not always a single, correct answer, and this view is supported by the fact that there is often more than a valid way to do the same thing or to present the same information. Chambers (2001) also argues that there may be more fair views of the same financial position and that sometimes there may be differences in the method used to achieve it.

According to Tabără and Rusu (2010), the values of financial indicators obtained by a company will vary according to the reporting system used (e.g. financial reporting according to the national accounting regulations of each European country and reporting according to International Financial Reporting Standards). The pertinent question in this situation: Is the economic reality reflected? If we were to take the situation of a Romanian company preparing two sets of financial statements for one financial year, one according to national regulations and one according to IFRS, which one reflects the reality? How many *true and fair views* do we get, and which one is the most *faithful*? The authors argue that the accounting rules do not have a universal power of action, but they present a specific reality of the local economic and social environment, and they have become true because the social actors have accepted and recognized them.

Currently, the Fourth Directive is no longer in force, being replaced by Directive 34/2013, and the provisions of the latter are included in national regulations of the UE member states and other states that do not have this status (Norway, Switzerland, etc.). The Directive 34/2013 requires for the financial statements to be prepared on a prudential basis and to provide a true and fair view of the assets, liabilities, financial position and profit or loss of the enterprise. With the implementation of European Directive 34/2013, no changes have been identified in the national regulations regarding the transposition of *true and fair view* and the signifiers attributed to it.

5. Conclusion

Even though four decades have passed since the proposal through the Fourth Directive for *a true and fair view* as the objective of financial reporting, there is no universally accepted definition of the concept. The numerous interpretations and opinions identified over the years maintain it in the position of a mysterious notion as described by Walton (1993). The true and fair view was considered, in the Romanian accounting regulations, from the very beginning as the objective of financial reporting, and it still maintains this status.

Considering the study on Cyprus, Latvia, Lithuania, Malta, Slovakia, Slovenia, Romania and Croatia, and analyzing the conclusions of the three aforementioned studies, we can assert that the translations attributed to the concept are not, usually, literary translations of the English original "*true and fair view*" nor were they applied equally. Moreover, relying on the prescriptive nature of the Directives, each country has managed to adopt and adapt the concept into national accounting regulations according to their needs, thus succeeding in imposing their own culture on a foreign concept. With the transpositions of *true and fair view* concept in national accounting regulations, France, Italy, the Netherlands, Ireland, the United Kingdom, Portugal, Spain, Finland, Lithuania, Malta, Czech Republic, Slovakia, Slovenia, Hungary, Bulgaria and Romania introduced also the *true and fair view override*, recognizing the supremacy of *true and fair view* over other legal provisions. It can also be noticed that, when transposing the concept into national regulations, some countries have concluded that there may be more than one way to reflect the financial position and performance of an entity, and that they can be obtained especially if we relate to the differences between national and international accounting systems. In this case, the fact that there may be more than one *fair view* does not mean that the economic reality is not represented, but that there is at least another angle from which it could be viewed, without the results being distorted in a negative sense.

6. References

Aisbitt, S. & Nobes, C. (2001). The true and fair view requirement in recent national implementations. *Accounting and Business Research*, 31(2), pp. 83–90. doi: 10.1080/00014788.2001.9729603.

Alexander, D. & Jermakowicz, E. (2006). A True and Fair View of the Principles/Rules Debate. *Abacus*, 42(2), pp. 132–164. doi: 10.1111/j.1468-4497.2006.00195.x.

Alexander, D. & Micallef, M. (2011). Accounting regulation in Malta. *Accounting in Europe*, 8(1), pp. 1–21. doi: 10.1080/17449480.2010.511877.

Arden, J. (1997). True and fair view: a European perspective. *European Accounting Review*, 6(4), pp. 675–679. doi: 10.1080/09638189700000008.

Blake, J. *et al.* (1998). International accounting harmonisation - a comparison of Spain, Sweden and Austria. *European Business Review*, 98(3). doi: 10.1108/09555349810213195.

Brabete, V. & Drăgan, C. (2008). How true and fair is the true and fair view in accountancy ? *Analele Universităţii din Craiova - Seria Ştiinţe Economice*, (XXXVI-2), p. 8. Available at: https://www.researchgate.net/publication/23977044.

Cañibano, L. (2007). El concepto de imagen fiel y su aplicación en España. *Partida Doble*, pp. 10–17.

Chambers, E. (2001) *True and Fair view Opinion*. Available at: http://www.hkicpa.org.hk/file/media/section6_standards/standards/trueandfairview.pdf.

Chastney, J.G. (1975). *True and fair view: a study of the history and meaning of the true and fair and a consideration of the impact of the fourth directive*. Institute of Chartered Accounts, England.

Cunningham, L.A. (2003) *Semiotics, Hermeneutics and Cash: An Essay on the True and Fair View*. Available at: http://ssrn.com/abstract=386041. Accessed: 6 June 2017.

Dragneva, R. & Millan, E. (2002). Transposing the “true and fair view” Concept in the legislation of Hungary and Poland in the context of EU enlargement. *Review of Central and East European Law*, 28(2), pp. 183–209. doi: 10.1163/157303502124667783.

Evans, L.; Baskerville, R. & Nara, K. (2015). Colliding Worlds: Issues Relating to Language Translation in Accounting and Some Lessons from Other Disciplines. *Abacus*, 51(1), pp. 1–36. doi: 10.1111/abac.12040.

Feleagă, N. (2006). Contabilitatea din România la ora convergenţelor cu directivele europene şi referenţialul internaţional. *România în Uniunea Europeană. Potenţialul de convergenţă Supliment al Revistei de Economie teoretică şi aplicată*, pp. 89–115. Available at: https://www.researchgate.net/profile/Spulbar_Cristi/publication/4731957_Implicatiile_Basel_II_asupra_bancilor_din_Europa_Centrala_si_de_Est/links/54366ff10cf2643ab986d1f8.pdf#page=89.

Van Hulle, K. (1997). The true and fair view override in the European Accounting Directives. *European Accounting Review*, 6(4), pp. 711–720. doi: 10.1080/09638189700000012.

Kosmala-MacLullich, K. (2003). The true and fair view construct in the context of the Polish transition economy: some local insights. *European Accounting Review*, 12(3), pp. 465–487, doi: 10.1080/0963818031000087844.

Lee, G.A. (1981) *Modern financial accounting*. Walton on Thames.

McGee, A. (1991). The "True and Fair View" Debate: A Study in the Legal Regulation of Accounting. *The Modern Law Review*, 54(6), pp. 874–888, doi: 10.1111/j.1468-2230.1991.tb01855.x.

Nobes, C. (1993). The True and Fair View Requirement: Impact on and of the Fourth Directive. *Accounting and Business Research*, 24(93), pp. 35–48, doi: 10.1080/00014788.1993.9729462.

Nobes, C. & Parker, R.H. (2004). *Comparative International Accounting*. 8th Edn. Prentice Hall.

Tabără, N. & Rusu, A. (2010). True and fair view in the context of the european accounting. In *Europan Economy: present and perspectives*. Suceava, pp. 332–340.

Tureac, C. (2008). Cadrul General de intocmire si prezentare a situatiilor financiare. *EIRP Proceedings*, 3, pp. 464–471.

Vladu, A.B.; Matis, D. & Salas, O.A. (2012). True and Fair View and Creative Accounting Conceptual Delimitations Based on Papineau S Tree Methodology. *Annales Universitatis Apulensis Series Oeconomica*, 14(1), pp. 104–115.

Walton, P. (1986). The Export of British Accounting Legislation to Commonwealth Countries. *Accounting and Business Research*, 16(64), pp. 353–357, doi: 10.1080/00014788.1986.9729335.

Walton, P. (1993). Introduction: the true and fair view in British accounting. *European Accounting Review*, 2(1), pp. 49–58, doi: 10.1080/09638189300000003.

Appendix 1

Table 1. Signifiers for true and fair view and their literal translations

Country	UE accession	Words in Law before Directive	Translation	Words in Directive	Translation	Fourth Directive	Words in Law if different of Directive	Translation
France	1958	-	-	une image fidèle	a faithful picture	1983	-	-
Germany	1958	-	-	ein den tatsächlichen Verhältnissen entsprechendes Bild	a picture in accordance with the facts	1985	Unter Beachtungder Grundsätze ordnungs massiger Buchführung ein den tatsächlichenVerh ältnissn entsprechendes Bild	in compliance with accepted accounting principles a picture in accordance with the facts
Belgium	1958	-	-	een getrouw beeld	a faithful picture	1985	-	-
Italy	1958	-	-	un quadro fedele	a faithful picture	1991	rappresentare in modo veritiero e corretto	represent in a true and correct way
Luxemburg	1958	-	-	een getrouw beeld	a faithful picture	1984	-	-
Netherlands	1958	„Geeft een zodanig inzicht dat een verantwoord oordeel kan worden gevormd" „geeft getrouw, duidelijk en stelselmatig"	presents an insight such that a well-founded opinion can be formed presents faithfully, clearly and consistently (over time)	een getrouw beeld	a faithful picture	1983	geeft getrouw, duidelijk en stelselmatig	presents faithfully, clearly and consistently (over time)
Denmark	1973	-	-	et pålideligt billede	a reliable picture	1981	et retvisende billede	a right-looking (or fair-looking) picture
Ireland	1973	a true and fair view	a true and fair view	a true and fair view	a true and fair view	1986	-	-
UK	1973	a true and fair view	a true and fair view	a true and fair view	a true and fair view	1981	-	-
Greece	1981	-	-	tin pragmatiki ikona	the real picture	1986	-	-
Portugal	1986	-	-	uma imagem fiel	a faithful picture	1989	uma imagem verdadeira e apropriada	a true and appropriate view
Spain	1986	-	-	una imagen fiel	a faithful picture	1989	la imagen fiel ... de conformidad con las disposiciones legales	the faithful picture

Austria	1995	-	-	ein den tatsächlichenVerhältnissenentsprechendes Bild	a picture in accordance with the facts	1990	ein möglichst getreues Bild	a picture as faithful as possible
Finland	1995	-	-	oikea ja riittava kuva	true and sufficient picture	1997	oikea ja riittavat tiedot	true and sufficient information
Sweden	1995	-	-	en rattvisande bild	a right-looking (or fair-looking) picture	1995	-	-
Cyprus	2004	a true and far view	a true and fair view	tin pragmatiki ikona	the real picture	2005	-	-
Estonia	2004	-	-	erapooletu ülevaade	impartial overview	2002	oige ja õiglase ülevaate	correctly and fairly overview
Latvia	2004	-	-	patiess un skaidrs priekšstats	a true and fair view	2004	-	-
Lithuania	2004	-	-	tikrą ir teisingą	a true and fair view	2001	-	-
Malta	2004	vera u ġusta	a true and fair view	vera u ġusta	a true and fair view	1986	-	-
Poland	2004	Prawidlow y rzetelnie	(correct): in accordance with the law (fair/true): "complete and in accordance with the truth"	prawdziwy i Rzetelny	true/correct and fair/honest	2000	rzetelnie i jasne	true and clear picture,
Czech Republic	2004	-	-	vìrný a pravdivý obraz	a true and fair view	2004	-	-
Slovakia	2004	-	-	verný a pravdivý obraz	a true and fair view	2002	-	-
Slovenia	2004	-	-	resnično in poštenosliko	a true and fair view	2004	resničen in poštenprikaz	a true and fair view
Hungary	2004	valós adatokat	„true in view of the compliance with the law"	megbízható ésvalós kép	a reliable and true picture	2000	-	-
Bulgaria	2007	-	-	vyarna kartina	a faithful picture	2007	vyarno i chestno predstavyane	true and fair presentation
Romania	2007	a faithful picture	a faithful picture	imaginea fidelă	a faithful picture	2005	-	-
Croatia	2013	-	-	istinit i pošten	a true and fair view	2015	istinit i fer prikaz	a true and fair presentation

Source: own processing after (Aisbitt & Nobes, 2001, pp. 89–90; Dragneva & Millan, 2002, p. 196)

Appendix 2

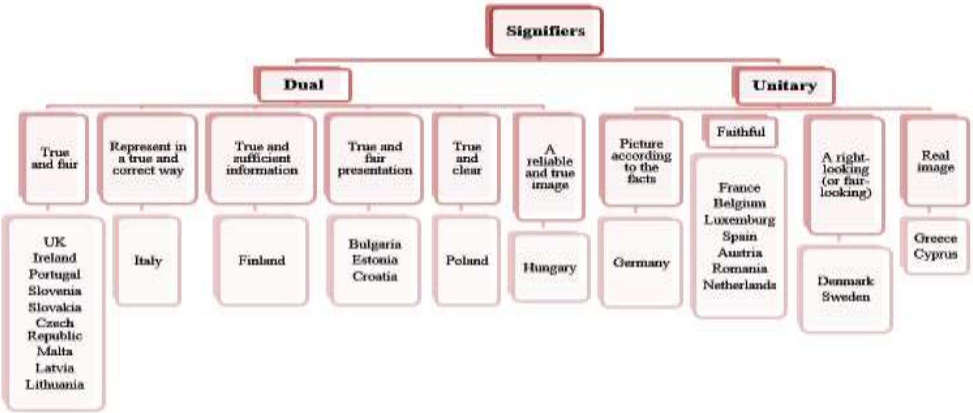


Figure 1. True and fair signifiers in national accounting regulations

Source: Own processing after (Aisbitt & Nobes, 2001, p. 89; Dragneva & Millan, 2002, p. 196)

Antecedents of Trust in Mobile Banking Amongst Generation Y Students in South Africa

Marko van Deventer[15]

Abstract: The purpose of this study was to determine the influence of perceived structural assurance concerning mobile banking, information and system quality of mobile banking, integrity of the mobile bank, trust propensity and perceived ease of use and usefulness of mobile banking on South African Generation Y students' trust in mobile banking. The study followed a descriptive research design, using a single cross-sectional approach. A self-administered survey questionnaire was used to collect data from a convenience sample of 334 students registered at three public South African university campuses. The results suggest that Generation Y students' perceived structural assurance, integrity of a bank, trust propensity and ease of use of mobile banking all have a statistically significant positive influence on their trust in mobile banking. However, their perceived information and system quality, as well as their usefulness of mobile banking has a positive yet non-significant influence on their trust in mobile banking. Understanding Generation Y students' trust in mobile banking will assist retail banking marketers and strategists in their efforts to formulate strategies that will foster trust in their mobile channels amongst customers of this cohort and, in doing so, promote greater mobile banking penetration. This paper also fulfils an identified need to study the antecedents of trust in mobile banking, especially amongst the South African youth.

Keywords: Trust; mobile banking; Generation Y students; South Africa

JEL Classification: G21

1. Introduction

The banking industry's traditional business model, which comprises brick-and-mortar banking, continues to contribute to a retail bank's success and remains an important distribution channel. However, challenges such as distribution channel mix transformation and integration (Kanchan et al., 2012), an increase in business operations and operating costs (Martins et al., 2014), competition for market share (Arnaboldi & Claeys, 2008), as well as changing consumer behaviour brought about by the digital revolution (Standard Bank, 2015), encourage retail banks to consider innovative ways to deliver their banking services (Arnaboldi & Claeys, 2008). As such, retail banks are continuously developing their distribution channels,

[15]PhD, North-West University, South Africa, Address: PO Box 1174, South Africa, Corresponding author: marko.vandeventer@nwu.ac.za.

specifically their digital banking channels, including mobile banking, to reach their customers (PwC, 2014).

Mobile banking primarily comprises retail banks providing their services employing the wireless Internet gateway (WIG) and the wireless application protocol (WAP) through mobile applications downloaded onto a customer's mobile device, such as an iPad or tablet, mobile phone or personal digital assistant (PDA) (Nel et al., 2012). Mobile banking is an innovative tool that drives current and future revenues, reduces service costs and maintains and improves customer service (Ernst & Young, 2015). Additionally, retail banks that operate in emerging economies, such as South Africa, can benefit from low-cost digital distribution channels, including mobile banking, as the mobile channels offer retail banks the opportunity to connect the unbanked population to the financial mainstream, thereby reaching new customers (Ismail & Masinge, 2012).

While mobile banking offers customer advantages such as convenience, efficiency and cost-savings (Lin, 2011), it remains cybernetic and, therefore, is associated with a certain degree of uncertainty and often perceived as risky (Kim et al., 2009). Moreover, mobile banking increases retail banks' interpersonal distance from their customers, which may lead to trust concerns (Benamati & Serva, 2007). In addition, the lack of trust in mobile banking amongst customers may seriously impede the growth in a retail bank's mobile banking penetration. As such, it is important that retail banks gain and maintain a particular level of trust. Aspects such as the structural assurances concerning mobile banking (Gu et al., 2009; Kim et al., 2009; Zhou 2011), information and system quality of mobile banking (Zhou, 2011; 2012a; 2012b), integrity of the mobile bank (Kabir, 2013; Robert & Rubert, 2013) and the ease of use (Gu et al., 2009; Lin et al., 2011) and usefulness of mobile banking (Kim et al., 2009; Lin et al., 2011) are likely to allay customers' uncertainty associated with the use of mobile banking and foster greater trust in this banking channel.

Internationally and in South Africa, the Generation Y cohort, which includes individuals born between 1986 and 2005 (Markert, 2004), represents a noteworthy current and future market segment for a number of sectors, including the retail banking sector. In 2017, the South African population was estimated at approximately 56.52 million, of which roughly 36 percent was represented by the Generation Y cohort (Statistics South Africa, 2017). This generation grew up using technology and, therefore, is hyper-connected to each other (Deloitte, 2010) and highly technologically astute (Van Deventer et al., 2014), suggesting that this cohort is also likely to adopt new technology (Deloitte, 2010). Many Generation Y consumers are first-time bankers that are on the lookout for the newest digital channels to satisfy their banking needs (KPMG South Africa, 2014). As such, this generation drives digital finance and is salient to the retail banking sector and their digital banking channels, including mobile banking. Research suggests that

Generation Y is at ease with using self-service banking channels, including mobile banking (IT news Africa, 2015). This, in combination with this generational cohort paving the way forward in adopting all things mobile (Deloitte, 2010) and their significant size makes them a current and future market segment of significant importance and value to retail banks and their mobile banking offerings. The Generation Y student cohort is a market segment of particular importance given the higher earning potential and social status generally associated with graduate education. Generation Y students are therefore often perceived as opinion leaders and trendsetters amongst their peers (Bevan-Dye & Akpojivi, 2016). Through better understanding the factors that influence the student portion of the Generation Y cohort's trust in mobile banking, retail banks can rethink and develop their digital channel strategy according to the needs of this cohort.

An extensive literature review on digital banking outlines a number of studies pertaining to Internet banking in developed economies such as Australia (Heaney, 2007), the United Kingdom (Littler & Melanthiou, 2006), and the United States of America (Vatanasombut et al., 2008). Similarly, in South Africa, a review of the literature points towards various Internet banking studies (Brown et al., 2004; Maduku, 2013; Redlinghuis & Rensleigh, 2010). However, the number of South African studies concerning mobile banking are limited, with studies uncovering mobile banking adoption predictors (Brown et al., 2003; Ismail & Masinge, 2012; Nel et al., 2012), attitudes towards mobile banking (Maduku & Mpinganjira, 2012; Nel & Raleting, 2012) and the influence of perceived utility and risk trade-offs on customers' willingness to continue using mobile banking (Njenga & Ndlovu, 2013). Upon searching four large online academic databases, namely EBSCOhost, Emerald, Google Scholar and Sabinet Reference, no study could be found that determined the influence of several factors on trust in mobile banking within the South African context. In addition, the search revealed no evidence of studies concerning trust in mobile banking using the significantly sized Generation Y cohort in general, and the Generation Y student population in particular as the target population. To address this gap in the literature, the purpose of the study reported in this article was to determine the influence of various factors, including perceived structural assurance concerning mobile banking, perceived information and system quality of mobile banking, perceived integrity of the mobile bank, trust propensity and perceived ease of use and usefulness of mobile banking on Generation Y students' trust in mobile banking channels in the South African context.

2. Literature Review

2.1. Structural Assurance Concerning Mobile Banking

Unlike other digital banking channels, the mobile banking channel operates on mobile networks, which makes this channel particularly open to risks such as hacker attacks, information interception, network failures, viruses and Trojan horses (Zhou, 2011). To reduce these system risks and protect mobile banking customers against financial, identity and privacy loss, it is important that retail banks have sufficient safeguards in place (Zhou, 2012a). "Structural assurance is information that can be used to give a web services provider or requestor the confidence that measures exist that can provide safeguards and reduce the risk when something goes wrong" (Coetzee & Eloff, 2005, p. 501). Structural assurances include safeguards such as legal contracts, guarantees, formal agreements, policies and promises (Lin et al., 2011). The availability of these structural assurances discourages opportunistic behaviours and perhaps, more importantly, instils confidence and trust in mobile banking. Structural assurance has been found to positively influence trust in mobile brokerage services (Lin et al., 2011) and Internet banking (Nor and Pearson, 2008). Moreover, previous research suggests that traditional offline banking influences online banking structural assurance (Lee et al., 2007). In a mobile banking context, structural assurances guarantee the reliability of financial transactions, individual privacy protection and transactional confidentiality (Kim et al., 2009), all of which build and positively influence trust in mobile banking. Indeed, a number of mobile banking studies (Gu et al., 2009; Kim et al., 2009; Zhou, 2011) with empirical support suggest that structural assurances positively influence customers' trust in mobile banking. As such, this study suggests that those customers who believe that they are legally protected against financial, privacy and identity loss when using mobile banking will likely trust mobile banking more; that is:

H1: Structural assurances positively influences trust in mobile banking.

2.2. Information and System Quality of Mobile Banking

Information quality refers to the accuracy, relevancy, timeliness and adequacy of information (Zhou, 2013), whereas system quality signifies the network and access speed, stability (Gu et al., 2009), visual appeal and navigation of a system (Zhou, 2013). In the context of mobile banking, customers that receive or access information that is inaccurate, irrelevant, outdated or incomplete, may question both the integrity of the bank and its ability to offer quality mobile banking services, which, in turn, may negatively influence their trust in mobile banking. Similarly, customers that find it difficult to navigate the mobile banking system due to a poor interface design may perceive the retail bank as unreliable and untrustworthy (Zhou, 2011). As such, it is important that retail banks invest adequate resources in their mobile banking channel to guarantee information and system quality and, in doing so, earn customers' trust in this banking channel. Information quality has been identified as a factor that positively influence user trust in health informediaries (Zahedi & Song, 2008), inter-organisational data exchange (Nicolaou & McKnight, 2006) and mobile brokerage services (Lin et al., 2011). Furthermore, both information and system quality were found to be positive predictors of the overall service quality of Web portals (Yang et al., 2005). In their study, Vance *et al.*, (2008) discovered that system quality, including the navigational structure and visual appeal influences users' trust in mobile commerce technologies. Extant mobile banking studies (Zhou, 2011; 2012a; 2012b) confirm that sufficient information and system quality positively influences customers' trust in mobile banking. In line with the findings of these studies, this study postulates that those customers who believe that mobile banking provides reliable and accurate information will likely display a trustworthy attitude towards mobile banking; that is, adequate system quality positively influences trust in mobile banking. Furthermore, this study proposes that mobile banking users who perceive mobile banking as easy to navigate and believe that the system is stable for financial transactions will likely trust mobile banking more. Hence:

H2: Information quality positively influences trust in mobile banking.

H3: System quality positively influences trust in mobile banking.

2.3. Integrity of Retail Banks that Offer Mobile Banking

In a retail banking context, integrity refers to a retail bank's adherence to a set of principles that are generally considered acceptable (Kabir, 2013). Integrity signifies the retail bank's credibility in their undertakings with their customers, their commitments made to their customers (Masrek et al., 2012), their ethical behaviour towards their customers, as well as their promise to provide a safe and secure banking environment (Nor & Pearson, 2008). In the context of mobile banking, the rules that govern integrity comprise maintaining the confidentiality of customers' personal information, providing customers with accurate, reliable and timely information (Lin, 2011) and assuring customers that the mobile virtual environment is safe and secure for financial transacting (Nor & Pearson, 2008). These integrity rules are important to influence customers' trust in mobile banking positively. In addition, retail banks that have earned the reputation of having integrity portray an image of objectivity, strong justice and honesty (Lin, 2011). Extant research on trust in e-commerce validate the influence of integrity on trust (Sharif et al., 2005), including Internet banking (Nor & Pearson, 2008). Previous studies conducted on mobile banking (Kabir, 2013; Robert & Rubert, 2013) found that having integrity positively influences trust in mobile banking. Consistent with these studies, this study theorises that those customers who perceive their retail bank as trustworthy and honest will likely trust their mobile banking channel. Thus:

H4: Integrity of the retail bank positively influences trust in mobile banking.

2.4. Trust Propensity

Propensity to trust, also referred to as disposition to trust, is described as a personality-based trust that explains why some individuals believe or disbelieve other individuals and their willingness to depend on others across a wide spectrum of situations (McKnight et al., 2002). As such, trust propensity represents individuals' tendency to believe that others are generally dependable and trustworthy (Kumar et al., 2012). Although trust propensity is a rather new concept in the information systems domain, it has important implications for both theory and practice. This is because trust propensity will arguably assist with understanding the role of personality traits in consumer-based mobile commerce, such as mobile banking. In a mobile banking context, individuals with greater trust propensity are more likely to feel at ease and safe with using mobile banking (Luo et al., 2010). In addition, those individuals with high trust propensity are more inclined to display positive attitudes towards mobile banking and will more readily build trust in mobile banking (Zhou, 2011). Gefen's (2000) research on Amazon.com and McKnight *et al*.'s (2002) study on Internet retail stores suggest that trust propensity influences trust. The research findings of Kim and Prabhakar (2004) as well as Nor and Pearson (2008) on Internet banking infer that trust propensity has a positive influence on trust. Given the results of these studies, this study postulates that high trust propensity positively influences trust in mobile banking. Numerous studies on mobile banking (Kim et al., 2009; Zhou, 2011; Chiu et al., 2017) verify this relationship between trust propensity and trust and that trust propensity positively influences trust in mobile banking. Therefore:

H5: Trust propensity positively influences trust in mobile banking.

2.5. Ease of Use and Usefulness of Mobile Banking

Ease of use refers to the level of difficulty that an individual experience when using information technology, whereas usefulness denotes the benefits and effectiveness of a technological innovation (Davis, 1989). These two constructs are based on measures to determine how information technology allow individuals to perform tasks quicker, as well as generate better performance, and increase work efficiency and productivity (Munoz-Leiva, 2017). In addition, an innovation that is useful and easy to use would attract customers to it (Nor & Pearson, 2008) and bolster their trust in the innovation. According to the technology acceptance model (TAM) developed by Davis (1989), attitude towards using a specific technology or innovation is determined by perceived ease of use and usefulness. Both ease of use and usefulness were found to positive predictors of attitudes towards online airline ticket purchases (Guritno & Siringoringo, 2013) and attitudes towards using Internet banking (Nor & Pearson, 2008). A number of international mobile banking studies (Wessels & Drennan, 2010; Akturan & Tezcan, 2012) also verify the relationship between ease of use, usefulness and attitudes towards using mobile banking.

However, evidence from previously published studies also suggests that both ease of use (Gu et al., 2009; Lin et al., 2011) and usefulness (Kim et al., 2009; Lin et al., 2011) are important determinants of trust in mobile commerce. In keeping with the postulations made by these studies, this study suggests that the ease of use and usefulness of mobile banking positively influences customers' trust in mobile banking. Thus:

H6: Ease of use positively influences trust in mobile banking.

H7: Usefulness positively influences trust in mobile banking.

3. Research Model

Existing theoretical and empirical studies highlight the importance of trust in mobile banking. The proposed research model as depicted in Figure 1 investigates how selected antecedents influence South African Generation Y students' trust in mobile banking. In accordance with the literature, all the antecedents are presumed to have a direct positive influence on trust in mobile banking.

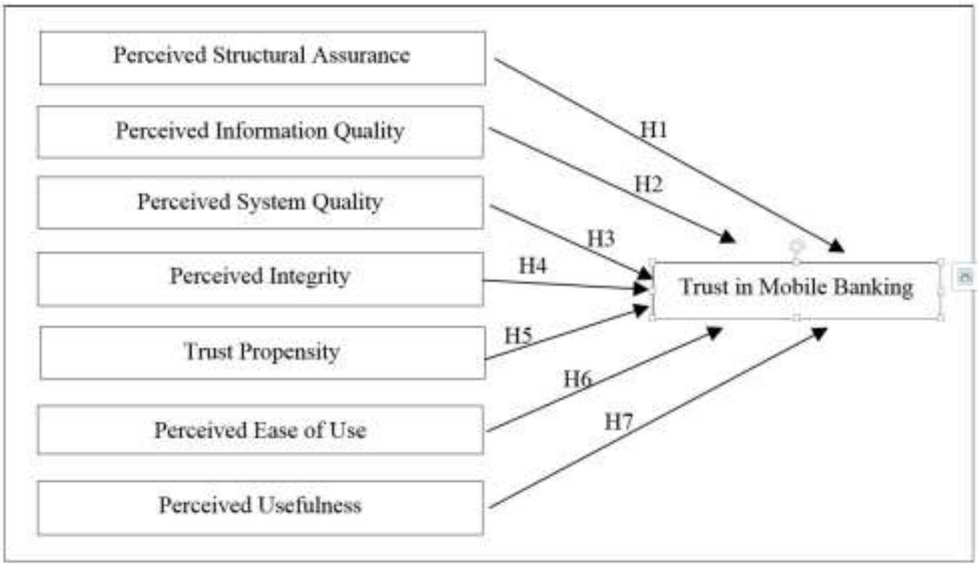


Figure 1. Research Model

4. Research Methodology

4.1. Participants

The target population for this study were Generation Y students between the ages of 18 and 24 years, enrolled at South African public higher education institutions (HEIs). A judgement sampling method was used to narrow down the initial sampling frame of the 26 registered South African public HEIs to three HEI campuses situated in the Gauteng province. These campuses included one campus from a university of technology, one from a traditional university and one from a comprehensive university. Thereafter, a non-probability convenience sample of 450 students (150 students per campus) was used to carry out this study. This sample size is in line with sample sizes of previously published studies of a similar nature, such as a sample size of 403 (Hanafizadeh et al., 2014) and 435 (Akturan & Tezcan, 2012).

Of the 450 questionnaires handed out, a total of 334 complete and usable questionnaires were returned. This equates to a response rate of 74 percent. Of the participants, 37.2 percent were from a traditional university, 33.2 percent from a comprehensive university, and 29.6 percent were from a university of technology. The sample included participants from each of the seven age groups specified in the target population and comprised more female than male participants. Participants from each of South Africa's four race groups made up the sample. In addition, the sample comprised participants from each of the country's 11 official language groups and nine provinces. A description of the sample participants is presented in Table 1.

Table 1. Sample Description

	Percent (%)		Percent (%)		Percent (%)
Age		**Language**		**Province**	
18	6.9	Afrikaans	9.3	Eastern Cape	2.1
19	14.1	English	7.5	Free State	10.8
20	25.7	IsiNdebele	.3	Gauteng	57.2
21	24.9	IsiXhosa	6.9	KwaZulu-Natal	2.7
22	14.4	IsiZulu	14.7	Limpopo	11.4
23	8.7	Sepedi	8.4	Mpumalanga	6.3
24	5.4	Sesotho	26.3	Northern Cape	.6
Gender		Setswana	13.2	North-West	7.2
Female	58.1	SiSwati	3.9	Western Cape	1.8
Male	41.9	Tshivenda	4.5	**Institution**	
Ethnicity		Xitsonga	4.8	Traditional	37.2
Black/African	84.1			Comprehensive	33.2
Coloured	2.4			Technology	29.6
Indian/Asian	2.7				
White	10.8				

4.2. Research Instrument

A survey self-administered questionnaire was employed to gather the necessary data. The questionnaire consisted of a cover letter, which detailed the purpose of the study as well as two sections. The first section covered demographical questions, whereas the second section included scaled items from published studies that were adapted to reflect trust in mobile banking. Five possible antecedents, namely perceived ease of use of mobile banking, usefulness of mobile banking, integrity of the mobile bank, structural assurance concerning mobile banking and trust in mobile banking were measured using the Internet banking adoption scale (Nor & Pearson, 2008). The remaining three antecedents of trust propensity, perceived information and system quality of mobile banking were measured using the Zhou (2011) initial trust in mobile banking scale. While each antecedent consisted of three items, perceived usefulness comprised four items. A six-point Likert-type scale, ranging from strongly disagree (1) to strongly agree (6) was used to record the 25-scaled responses.

4.3. Research Design

The study followed a descriptive research design, using a single cross-sectional approach.

4.4. Data Collection Procedure

Using the mall-intercept survey technique, three post-graduate students trained as fieldworkers distributed the survey questionnaires to the students at each of the three campuses. Students were duly informed that participation in the study was on a voluntary basis only and that the privacy of any information provided would be assured.

4.5. Ethical Considerations

The proposed study and questionnaire was submitted to the Ethics Committee of the Faculty of Economic Sciences and Information Technology at the Vaal Triangle Campus of the North-West University for ethical approval and was awarded an ethics clearance certificate (Ethics Clearance Number: ECONIT-ECON-2014-005). In addition, the questionnaire's cover letter explained that participation in the study is voluntary and assured the confidentiality of the participant's information.

5. Data Analysis

The IBM Statistical Package for Social Sciences (SPSS), Version 24 for Windows was used to analyse the captured data. Data analysis included descriptive statistics, reliability and validity measures, Pearson's product-moment correlation analysis, collinearity diagnostics and regression analysis.

6. Results

6.1. Descriptive Statistics and Reliability Measures

The means and standard deviations were calculated for each of the constructs. As a measure of internal consistency reliability of the scale, the Cronbach's alphas were computed for the entire scale as well as each of the individual constructs. A summary of the descriptive statistics and reliability measures are provided in Table 2.

Most of the constructs calculated mean values above 3.5, which, on a six-point Likert-type scale, suggests that Generation Y students perceive mobile banking as useful (mean = 5.193) and easy to use (mean = 4.705). Furthermore, the students trust that mobile banking can provide relevant, adequate and quality information (mean = 4.630) and that the mobile banking system is user-friendly (mean = 4.605). Moreover, Generation Y students report that they trust mobile banking (mean = 4.284) and that mobile banking has sufficient structural assurances (mean = 4.267). In addition, Generation Y students believe that those retail banks that provide mobile banking are likely to keep the promises they make, be honest and act ethically (mean = 3.949). The results also indicate that Generation Y students generally trust other people (mean = 3.001).

Table 2. Descriptive Statistics and Reliability Measures

Constructs	Means	Standard Deviations	Cronbach's Alphas
Perceived usefulness	5.193	.764	.825
Perceived ease of use	4.705	1.069	.856
Perceived information quality	4.630	.982	.889
Perceived system quality	4.605	.910	.730
Trust	4.284	1.261	.893
Perceived structural assurance	4.267	1.152	.880
Perceived integrity	3.949	1.104	.877
Trust propensity	3.001	1.215	.792

A Cronbach alpha value of 0.837 was recorded for the entire scale. Moreover, all the Cronbach alpha values of the individual constructs exceeded the recommended level 0.70 (Hair et al., 2010), thereby suggesting acceptable internal consistency reliability. In addition, the entire scale returned an inter-item correlation coefficient of 0.406, which is in the recommended range of 0.15 and 0.50 (Spiliotopoulou, 2009). As such, the measuring instrument may be considered reliable and valid.

6.2. Correlation Analysis

To determine whether there was a relationship between the constructs, Pearson's product-moment correlation coefficients were calculated. The results are presented in Table 3.

Table 3. Correlation Analysis

Constructs	1	2	3	4	5	6	7	8
Perceived Structural Assurance	1	.672**	.583**	.430**	.195**	.643**	.438**	.481**
Perceived Information Quality		1	.672**	.384**	.164**	.544**	.366**	.587**
Perceived System Quality			1	.408**	.199**	.507**	.440**	.589**
Perceived Integrity				1	.331**	.467**	.244**	.275**
Trust Propensity					1	.281**	.132**	.105*
Trust						1	.436**	.417**
Perceived Ease of Use							1	.385**
Perceived Usefulness								1

** Correlation is Significant at the .01 Level (1-Tailed)
* Correlation is Significant at the .05 Level (1-Tailed)

As is evident from Table 3, there were statistically significant positive relationships between each of the pairs of constructs. The strongest relationship occurred between perceived structural assurance and information quality, as well as between perceived information quality and system quality ($r = 0.672$, $p < 0.01$). This suggests that the higher the perceived structural assurance, the higher the perceived information quality of mobile banking. Similarly, the higher the perceived information quality of mobile banking, the higher the perceived system quality of mobile banking. These statistically significant associations between each pair of constructs in a direction that makes sense denote the nomological validity of the measurement theory in this study. In addition, none of the correlation coefficients exceeded 0.90, which eliminates the possibility of multicollinearity (Hair et al., 2010). Collinearity diagnostics, as outlined in Table 4, were performed on the independent variables with the case number serving as the dummy dependent variable to look for more subtle forms of multicollinearity.

Table 4. Collinearity Diagnostics

Independent Variables	Tolerance Values	VIF
Perceived Usefulness	.570	1.754
Perceived Ease of Use	.718	1.392
Perceived Information Quality	.395	2.532
Perceived System Quality	.440	2.271
Trust	.494	2.023

Perceived Structural Assurance	.415	2.407
Perceived Integrity	.693	1.443
Trust Propensity	.866	1.154

As shown in Table 4, all the tolerance values were above the cut-off level of 0.10, ranging from 0.395 to 0.866 and the average variance inflation factor (VIF) of 1.87 below the cut-off of 10, which suggests that there was no obvious evidence of multicollinearity (Pallant, 2010).

6.3. Regression Analysis

Multivariate regression analysis was undertaken to determine the influence of perceived structural assurance, information quality, system quality, integrity, ease of use, usefulness and trust propensity on Generation Y students' trust in mobile banking. Table 5 reports on the regression model summary and ANOVA results.

Table 5. Regression Model Summary and ANOVA Results

	R	R^2	Adjusted R^2	F	p-value
Model 1	.711	.506	.495	47.641	.000

As indicated in Table 5, the significant F-ratio (*p* q 0.01) suggests that the regression model predicts trust in mobile banking. The R^2 value denotes that almost 51 percent of the variance in Generation Y students' trust in mobile banking is explained by the seven independent variables. The following step evaluated the contribution of each construct to the prediction of trust in mobile banking, as reported on in Table 6.

Table 6. Contribution of Independent Variables to Predicting Trust in Mobile Banking and Hypothesis Testing Results

Independent Variables	Standardised Beta Coefficients	t-values	p-values	Hypothesis	Hypothesis Testing Result
Perceived Structural Assurance	.369	6.498	.000*	H1	Supported
Perceived Information Quality	.113	1.825	.069	H2	Not supported
Perceived System Quality	.041	.699	.485	H3	Not supported
Perceived Integrity	.168	3.656	.000*	H4	Supported
Trust Propensity	.104	2.517	.012*	H5	Supported
Perceived Ease of Use	.146	3.223	.001*	H6	Supported
Perceived Usefulness	.036	.703	.483	H7	Not supported

*Significant at the .05 Level (2-Tailed)

Table 6 and Figure 2 shows that perceived structural assurance ($\beta = 0.369$, $p = 0.000 < 0.05$), perceived integrity ($\beta = 0.168$, $p = 0.000 < 0.05$), trust propensity ($\beta = 0.104$, $p = 0.012 < 0.05$) and perceived ease of use ($\beta = 0.146$, $p = 0.001 < 0.05$) all had a statistically significant positive influence on Generation Y students' trust in mobile banking, which supports hypotheses H1, H4, H5 and H6. However, perceived information quality ($\beta = 0.113$, $p = 0.069 > 0.05$), perceived system quality ($\beta = 0.041$, $p = 0.485 > 0.05$) and perceived usefulness ($\beta = 0.036$, $p = 0.483 > 0.05$) had a positive yet non-significant influence on this cohort's trust in mobile banking, and as such, hypotheses H2, H3 and H7 was not supported. The largest beta coefficient was recorded for perceived structural assurance, which means that this construct makes the strongest contribution to explaining Generation Y students' trust in mobile banking.

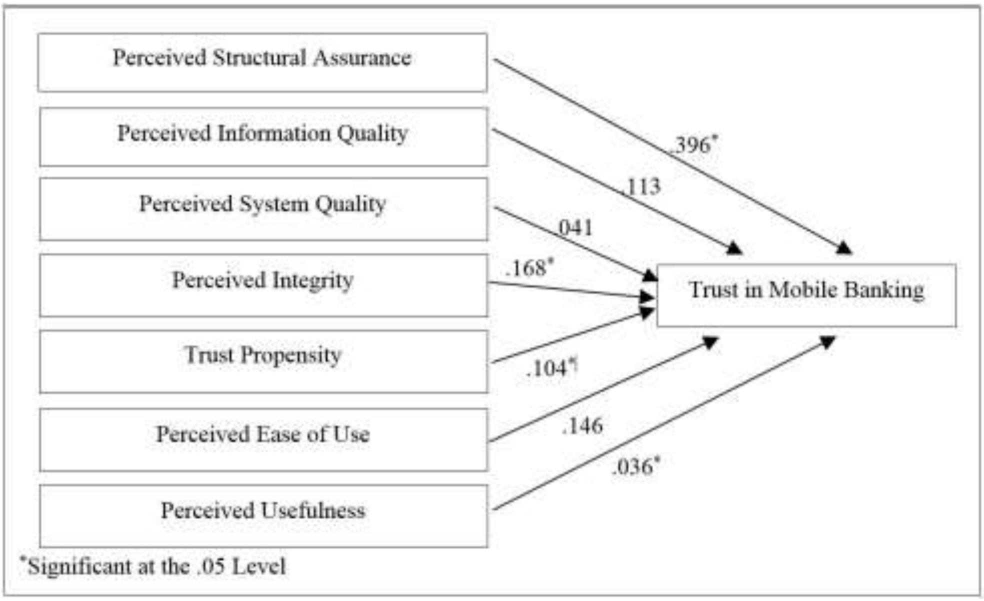


Figure 2. Hypothesis Testing Results

7. Discussion

This study considered the antecedents of trust in mobile banking amongst South African Generation Y students. Retail banks can use the insights gained from this study to foster greater trust in their mobile channels to ensure increased mobile banking penetration. The results of the study suggest that perceived structural assurance, information and system quality, ease of use and usefulness, integrity of the retail bank and trust propensity are positively associated with trust in mobile banking. Consistent with the literature, perceived structural assurance, perceived integrity, trust propensity and perceived ease of use were found to be significant positive predictors of trust in mobile banking. Of the four, structural assurance was found to be the strongest predictor of trust in mobile banking amongst Generation Y students. This result is not without grounds, as several studies (Gu et al., 2009; Kim et al., 2009) found structural assurance to have the largest effect on trust in mobile banking. While perceived information quality, system quality and usefulness had a positive influence on Generation Y students' trust in mobile banking it was statistically insignificant. This may be because customers that perceive an innovation as having system and information quality as well as being useful may display a positive attitude towards the innovation. Previous studies (Kleijnen et al., 2004; Olatokun & Owoeye, 2012) support the assertion that system quality influences attitudes towards mobile banking, rather than trust in mobile banking. Similarly, Talukder *et al*. (2014) opine that system quality refers to both the technical and information quality of the mobile system. Therefore, it may be inferred that information quality also positively influences attitudes towards mobile banking. In addition, Nor and Pearson (2008) theorise that customers are likely to have a positive attitude towards an innovation that is useful. Indeed, several studies (Lin, 2011; Sayid et al., 2012; Shanmugam et al., 2014) validate that the usefulness of mobile banking positively influences attitudes towards mobile banking and not necessarily trust in mobile banking.

In light of the results, it is important that retail banks offer and develop a number of assurance programmes and technologies, such as third party certifications and advanced encryption that safeguard customers from both financial and information losses, with the intention of mitigating the uncertainties and perceived risks associated with the use of mobile banking and to earn customers' trust early in the mobile banking adoption process. In addition, it is suggested that retail banks deliver banking services as promised and that they display a truthful and fair attitude in all their financial dealings with their customers. In doing so, retail banks are in a better position to earn a reputation of having integrity, which is likely to boost customers' trust in both the retail bank itself and their mobile banking channel, which, subsequently, may stimulate greater mobile banking penetration. Furthermore, the results suggest that Generation Y customers are likely to embrace the use of mobile banking given their propensity to trust and their willingness to accept higher risks. Retail banks, therefore, are advised to focus on target marketing rather than generalised marketing of mobile banking to those customers who fit the trust profile. This may also be a more cost effective approach in broadening the retail banks' customer base. Moreover, retail banks are encouraged to seek ways to improve the simplicity of their mobile banking channel, such as introducing a hand free, voice command feature or a live chat platform. Efforts invested in making mobile banking easier to use may help build customers' trust in this banking channel. Although perceived information quality, system quality and usefulness did not have a direct influence on Generation Y students' trust in mobile banking they still consider it important. As such, it is recommended that retail banks constantly add new value offerings that will reflect both information relevancy and accuracy as well improved system functionality to their current mobile banking channel.

8. Limitations and Future Research

The study's participants were surveyed using non-probability convenience sampling, which limits the objective assessment of the findings. Furthermore, the study used a single cross-sectional research design, which only offers a momentary observation in time. As such, a longitudinal study may produce more accurate results for this type of study and could be considered as a future research opportunity.

9. Conclusion

Although mobile banking offers several advantages, it remains cybernetic. As such, mobile banking is associated with some degree of risk and uncertainty, which highlights the significance of trust in fostering greater mobile banking penetration. Therefore, the purpose of this study was to determine the antecedents of trust in mobile banking amongst South African Generation Y university students. The study concluded that while perceived structural assurance, integrity of the retail bank, ease of use and trust propensity had a statistically significant positive influence on Generation Y students' trust in mobile banking, their perceived information quality, system quality and usefulness had a positive yet non-significant influence on their trust in mobile banking. Understanding Generation Y students' trust in mobile banking will assist policy makers, marketers and strategists within the retail banking domain in their efforts to formulate strategies that will foster trust in their mobile channels amongst customers of this cohort and, in doing so, promote greater mobile banking penetration.

10. References

Akturan, U. & Tezcan, N. (2012). Mobile banking adoption of the youth market: perceptions and intentions. *Marketing Intelligence and Planning*, Vol. 30, no. 4, pp. 444-459.

Arnaboldi, F. & Claeys, P. (2008). *Internet banking in Europe: a comparative analysis*. Available at: http://www.ub.edu/irea/working_papers/2008/200811.pdf (accessed 15 December 2017).

Benamati, J.S. & Serva, M.A. (2007). Trust and distrust in online banking: their role in developing countries. *Information Technology for Development*, Vol. 13, no. 2, pp. 161-175.

Bevan-Dye, A.L. & Akpojivi, U. (2016). South African Generation Y students' self-disclosure on Facebook. *South African Journal of Psychology*, Vol. 46, no. 1, pp. 114-129.

Brown, I.; Cajee, Z.; Davies, D. & Stroebel, S. (2003). Cell phone banking: predictors of adoption in South Africa – an exploratory study. *International Journal of Information Management*, Vol. 23, no. 5, pp. 381-394.

Brown, I.; Hoppe, R.; Mugera, P.; Newman, P. & Stander, A. (2004). The impact of national environment on the adoption of Internet Banking: comparing Singapore and South Africa. *Journal of Global International Management*, Vol. 12, no. 2, pp. 1-26.

Chiu, J.L.; Bool, N.C. & Chiu, C.L. (2017). Challenges and factors influencing initial trust and behavioral intention to use mobile banking services in the Philippines. *Asia Pacific Journal of Innovation and Entrepreneurship*, Vol. 11, no. 2, pp. 246-278.

Coetzee, M. & Eloff, J.H.P. (2005). Autonomous trust for web services. *Internet research*, Vol. 15, no. 5, pp. 498-507.

Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, Vol. 13, no. 3, pp. 319-340.

Deloitte (2010). *Mobile banking: a catalyst for improving bank performance.* Available at: https://www2.deloitte.com/content/dam/Deloitte/ie/Documents/Process/mobile_banking_bank_performance.pdf, accessed 17 September 2018.

Ernst & Young (2015). *Global banking outlook 2015: transforming banking for the next generation*. Available at: http://www.ey.com/Publication/vwLUAssets/EY-global-banking-outlook-2015-transforming-banking-for-the-next-generation/$FILE/EY-global-banking-outlook-2015-transforming-banking-for-the-next-generation.pdf, accessed 18 December 2017.

Gefen, D. (2000). E-commerce: the role of familiarity and trust. *Omega*, Vol. 28, pp. 725-737.

Gu, J.C.; Lee, S.C. & Suh, Y.H. (2009). Determinants of behavioral intention to mobile banking. *Expert Systems with Applications*, Vol. 36, no. 9, pp. 11605-11616.

Guritno, R.S. & Siringoringo, H. (2013). Perceived usefulness, ease of use, and attitude towards online shopping usefulness towards online airlines tickets purchase. *Procedia – Social and Behavioral Sciences*, Vol. 81, pp. 212-216.

Hair, J.F.; Black, W.C.; Babin, B.J. & Anderson, R.E. (2010). *Multivariate data analysis: a global perspective*. Pearson Prentice Hall, New Jersey.

Hanafizadeh, P.; Behboudi, M.; Koshksaray, A.A. & Tabar, M.J.S. (2014). Mobile-banking adoption by Iranian clients. *Telematics and Informatics*, Vol. 31, no. 1, pp. 62-78.

Heaney, J.G. (2007). Generations X and Y's Internet banking usage in Australia. *Journal of Financial Services Marketing*, Vol. 11, no. 3, pp. 196-210.

IT news Africa (2015). Will digital finance play a bigger role in SA in 2015? Available at: http://www.itnewsafrica.com/2015/02/will-digital-finance-play-a-bigger-role-in-sa-in-2015/accessed 16 December 2017.

Ismail, T. & Masinge, K. (2012). Mobile banking: innovation for the poor. *African Journal of Science, Technology, Innovation and Development*, Vol. 4, no. 3, pp. 98-127.

Kabir, M.R. (2013). Factors influencing the usage of mobile banking: incident from a developing country. *World Review of Business Research*, Vol. 3, no. 3, pp. 96-114.

Kanchan, A.; Banerjee, B., Wilson, D. & Sullivan, W. (2012). *Trends in retail banking channels: improving client service and operating costs.* Available at: https://www.capgemini.com/resource-file-access/resource/pdf/Trends_in_Retail_ Banking_ Channels__Improving_Client_Service_and_Operating_Costs.pdf (accessed 15 December 2017).

Kim, G.; Shin, B. & Lee, H.G. (2009). Understanding dynamics between initial trust and usage intentions of mobile banking. *Information Systems Journal*, Vol. 19, no. 3, pp. 283-311.

Kim, K.K. & Prabhakar, B. (2004). Initial trust and the adoption of B2C e-Commerce: the case of internet banking. *ACM SIGMIS Database*, Vol. 35, pp. 50-64.

Kleijnen, M.; Wetzels, M. & De Ruyter, K. (2004). Consumer acceptance of wireless finance. *Journal of Financial Services Marketing*, Vol. 8, no. 3, pp. 206-217.

KPMG South Africa (2014). SA banking is top notch. Available at: http://www.sablog.kpmg.co.za/2014/09/sa-banking-top-notch/ (accessed 10 January 2018).

Kumar, M.; Sareen, M. & Barquissau, E. (2012). Relationship between types of trust and level of adoption of Internet banking. *Problems and Perspective in Management*, Vol. 10, no. 1, pp. 82-92.

Lee, K.C.; Kang, I. & McKnight, D.H. (2007). Transfer from offline trust to key online perceptions: an empirical study. *IEEE Transactions on Engineering Management*, Vol. 54, no. 4, pp. 729-741.

Lin, H.F. (2011). An empirical investigation of mobile banking adoption: the effect of innovation attributes and knowledge-based trust. *International Journal of Information Management*, Vol. 31, no. 3, pp. 252-260.

Lin, J.; Lu, Y.; Wang, B. & Wei, K.K. (2011). The role of inter-channel trust transfer in establishing mobile commerce trust. *Electronic Commerce Research and Applications*, Vol. 10, no. 6, pp. 615-625.

Littler, D. & Melanthiou, D. (2006). Consumer perceptions of risk and uncertainty and the implications for behaviour towards innovative retail services: the case of Internet banking. *Journal of Retailing and Consumer Services*, Vol. 13, no. 6, pp. 431-443.

Luo, X.; Li, H.; Zhang, J. & Shim, J.P. (2010). Examining multi-dimensional trust and multi-faceted risk in initial acceptance of emerging technologies: an empirical study of mobile banking services. *Decision Support* Systems, Vol. 49, no. 2, pp. 222-234.

Maduku, D.K. (2013). Predicting retail customers' attitude towards Internet banking service in South Africa. *Southern African Business Review,* Vol. 17, no. 3, pp. 76-100.

Maduku, D.K. & Mpinganjira, M. (2012). An empirical investigation into customers' attitude towards usage of cell phone banking in Gauteng, South Africa. *Journal of Contemporary Management*, Vol. 9, pp. 172-189.

Markert, J. (2004). Demographics of age: generational and cohort confusion*. Journal of Current Issues and Research in Advertising*, Vol. 26, no. 2, pp. 11-25.

Masrek, M.N.; Uzir, N.A. & Khairuddin, I.I. (2012). Trust in mobile banking adoption in Malaysia: a conceptual framework. *Journal of Mobile Technologies, Knowledge & Society*, Vol. 2012, pp. 1-12.

McKnight, D.H.; Chervany, N.L. & Kacmar, C. (2002). Developing and validating trust measures for e-commerce. *Information Systems Research*, Vol. 13, no. 3, pp. 344-359.

Munoz-Leiva, F.; Climent-Climent, S. & Liebana-Cabanillas, F. (2017). Determinant of intention to use the mobile banking apps: an extension of the classic TAM model. *Spanish Journal of Marketing – ESIC*, Vol. 21, pp. 25-38.

Nel, J. & Raleting, T. (2012). Gender difference in low-income non-users' attitude towards Wireless Internet Gateway cellphone banking. *South African Journal of Business Management*, Vol. 43, no. 3, pp. 51, 63.

Nel, J.; Boshoff, C. & Raleting, T. (2012). Exploiting the technology cluster effect to enhance the adoption of WIG mobile banking among low-income earners. *Management Dynamics,* Vol. 21, no. 1, pp. 30-44.

Nicolaou, A.I. & McKnight, D.H. (2006). Perceived information quality in data exchanges: effects on risk, trust, and intention to use. *Information Systems Research*, Vol. 17, no. 4, pp. 332-351.

Njenga, K. & Ndlovu, S. (2013). On rational choice, risk and utility in mobile banking. *The African Journal of Information and Communication*, Vol. 13, pp. 42-61.

Nor, K.M. & Pearson, J.M. (2008). An exploratory study into the adoption of Internet banking in a developing country: Malaysia. *Journal of Internet Commerce*, Vol. 7, no. 1, pp. 29-73.

Olatokun, W. & Owoeye, O.J. (2012). Influence of individual, organizational and system factors on attitude of online banking users. In *Proceedings of Informing Science & IT Education Conference (InSITE)*, pp. 389-403.

Pallant, J. (2010). *SPSS survival manual: a step by step guide to data analysis using SPSS*. England: Open University Press.

PwC (PricewaterhouseCoopers) (2014). Retail banking 2020 – evolution or revolution? Available at: http://www.pwc.com/et_EE/EE/publications/assets/pub/pwc-retail-banking-2020-evolution-or-revolution.pdf (accessed 13 January 2018).

Redlinghuis, A. & Rensleigh, C. (2010). Customer perceptions in Internet banking information protection. *South African Journal of Information Management*, Vol. 12, no. 1, pp. 1-6.

Robert, I. & Rupert, W. (2017). Towards a comprehensive framework for measuring technology trust: the case of mobile banking adoption in Nigeria. *International Journal of Computer and Information Technology*, Vol. 6, no. 1, pp. 41-48.

Sayid, O.; Echchabi, A. & Aziz, H.A. (2012). Investigating mobile money acceptance in Somalia: an empirical study. *Pakistan Journal of Commerce & Social Sciences*, Vol. 6, no. 2, pp. 269-281.

Shanmugam, A.; Savarimuthu, M.T. & Wen, T.C. (2014). Factors affecting Malaysian behavioral intention to use mobile banking with mediating effects of attitude. *Academic Research International*, Vol. 5, no. 2, pp. 236-253.

Sharif, K.J.; Kalafatis, S.P. & Samouel, P. (2005). Cognitive and behavioral determinants of trust in small and medium-sized enterprises. *Journal of Small Business & Enterprise Development*, Vol. 12, No. 3, pp. 409-421.

Spiliotopoulou, G. (2009). Reliability reconsidered: Cronbach's alpha paediatric assessment in occupational therapy. *Australian Occupational Therapy Journal*, Vol. 56, no. 3, pp. 1-17.

Standard Bank (2015). Future of banking in Africa is mobile. Available at: http://community.standardbank.co.za/t5/Blog/Future-of-banking-in-Africa-is-mobile/ba-p/921 accessed at 8 January 2018.

Statistics South Africa (2017). Statistical release P0302: 2017 mid-year population estimates. Available at: http://www.statssa.gov.za/publications/P0302/P03022017.pdf (accessed at 13 January 2018).

Talukder, M.; Quazi, A. & Sathye, M. (2014). Mobile phone banking usage behaviour: an Australian perspective. *Australasian Accounting, Business and Finance Journal*, Vol. 8, no. 4, pp. 83-104.

Vance, A.; Elie-Dit-Cosaque, C. & Straub, D.W. (2008). Examining trust in information technology artifacts: the effects of system quality and culture. *Journal of Management Information Systems*, Vol. 24, no. 4, pp. 73-100.

Van Deventer, M.; De Klerk, N. & Bevan-Dye, A.L. (2014). African Generation Y students' attitudes towards personal financial planning. *Mediterranean Journal of Social Sciences*, Vol. 5, no. 21, pp. 111-120.

Vatanasombut, B.; Igbaria, M.; Stylianou, C. & Rodgers, W. (2008). Information systems continuance intention of web-based applications customers: the case of online banking. *Information & Management*, Vol. 45, no. 7, pp. 419-428.

Wessels, L. & Drennan, J. (2010). An investigation of consumer acceptance of m-banking. *International Journal of Bank Marketing*, Vol. 28, No. 7, pp. 547-568.

Yang, Z.; Cai, S.; Zhou, Z. & Zhou, N. (2005). Development and validation of an instrument to measure user perceived service quality of information presenting Web portals. *Information & Management*, Vol. 42, pp. 575-589.

Zahedi, F.M. & Song, J. (2008). Dynamics of trust revision: using health infomediaries. *Journal of Management Information Systems*, Vol. 24, no. 4, pp. 225-248.

Zhou, T. (2011). An empirical examination of initial trust in mobile banking. *Internet Research*, Vol. 21, no. 5, pp. 527-540.

Zhou, T. (2012a). Understanding users' initial trust in mobile banking: an elaboration likelihood perspective. *Computers in Human Behavior*, Vol. 28, pp. 1518-1525.

Zhou, T. (2012b). Examining mobile banking user adoption from the perspectives of trust and flow experience. *Information Technology and Management*, Vol. 13, no. 1, pp. 27-37.

Zhou, T. (2013). An empirical examination of continuance intention of mobile payment services *Decision Support Services*, Vol. 54, no. 2, pp. 1085-1091.

Effect of Corporate Environmental Investments on Financial Performance in Mining and Manufacturing Companies Listed on the Johannesburg Stock Exchange Social Responsibility Index

Michael Bamidele Fakoya[16], Kevin Tinashe Chitepo[17]

Abstract: This article investigates the relationship between corporate environmental investment and financial performance. The article examines the effect of carbon emission reduction and hazardous solid waste disposal on companies' return on assets. The paper adopts a quantitative research design by analysing secondary data from the financial statements of companies listed on the Social Responsibility Index consecutively from 2008 to 2017. Panel data analysis consisting of the random and fixed effects models was used to analyse the data. The study adopted the Hausman test to determine the most appropriate model. Data were tested for multicollinearity and heteroscedasticity in order to enhance the reliability of the regression results. The results produced a mixed result showing positive gains between carbon emissions reduction and return on assets while the hazardous solid waste reduction was negatively related to return on assets. Our results have significant managerial implications as it was established that corporate environmental investment to reduce carbon emissions is vital as they result in different cost savings. Conversely, investments to reduce hazardous solid waste disposal are equally essential to establish and maintain a sustainable operational environment and to enhance stakeholder relations but have no direct influence on return on assets.

Keywords: environmental investment; financial performance, return on assets; carbon emission reduction; hazardous solid waste

JEL Classification: M1; Q01

1. Introduction

Corporate environmental investments have traditionally been deemed to be an unnecessary cost to companies, with investors against their undertaking because of perceived no or insignificant returns. However, recent research and literature highlight financial benefits accruing from environmental investments. In recent

[16] Lecturer, African Centre for Sustainability Accounting and Management, School of Accounting, University of Limpopo, South Africa, Address: Private Bag X1106, Sovenga, 0727, Polokwane, E-mail: michael.fakoya@ul.ac.za.
[17] Masters student, African Centre for Sustainability Accounting and Management, School of Accountancy, University of Limpopo, South Africa, Address: Private Bag X1106, Sovenga, 0727, Polokwane, E-mail: kevintchitepo@gmail.com.

years, there has been a growing demand for companies to improve their sustainability practices, environmental and good corporate citizenship initiatives (Brown, Malmqvist & Wintzell, 2016). According to Streimikiene, Navikaite and Varanavicius (2016), mounting pressure from stakeholder groups has led top executives of many companies to implement corporate environmental investments (Streimikiene et al., 2016). Implementing environmental-related investments enable businesses to give back to both the environment and community in which they operate (Depoers, Jeanjean & Jérôme, 2016). Presently, environmental matters have received a much higher priority in business decisions with management having to incorporate environmental variables in business operations. In support of this view, Brown et al. (2016) reveal that companies in the United States of America (USA) spent more than $120 billion to comply with environmental laws and regulation in addition to several billion spent on research and development.

Additionally, Strezov and Evans (2016) state that the top 10 American firms are now spending over 5 billion annually on research and development. In expending huge amounts on compliance with environmental laws and regulation, companies can voluntarily reduce their pollution levels beyond compliance (Brown et al., 2016). The obvious question for any investor would be: is there any return for the investment in carbon emission reduction and hazardous solid waste? Literature is inconclusive about the effect of corporate environmental investment and financial performance of listed firms. According to Strezov and Evans (2016), corporate investments in environmental technologies have traditionally been considered to drain a firm's resources, creating an inherent conflict between environmental and financial performance. Conversely, Christopher, Hutomo, and Monroe (2013) argue that good corporate environmental performance attracts resources to the firm, including better quality employees and expanded market opportunities. Therefore, this study aims to demystify the above inconclusiveness by empirically examining the correlation between corporate environmental investment and shareholder value (return on assets).

The article is structured as follows; the next section will discuss the literature review, followed by an outline of the research methodology. The remainder of the article will present and discuss the findings of the study.

2. Literature Review

The article uses the stakeholder and legitimacy theory to define the company's external engagement with the society and environment. Management of companies has the fiduciary responsibility to manage the business assets profitably and to create wealth for their shareholders. They also should ensure compliance with all environmental regulations in their effort to create wealth. In most instances, this creates conflicts of interest between environmental performance and shareholders' value. According to Strezov and Evans (2016), corporate investments in environmental technologies have traditionally been considered to drain a firm's resources, creating an inherent conflict between environmental and financial performance. Garcia, Ribeiro, Oliveira Roque, Ochoa-Quintero and Laurance (2016) agree that any environmental costs or expenses incurred beyond regulatory compliance result in declining firm performance and value, therefore, these are not in the best interest of shareholders. Complementing the above, Gans and Hintermann (2013) agree that voluntary environmental initiatives, or for compliance with regulation, have been deemed to increase a firm's cost structure resulting in low financial returns.

In the above studies, corporate environmental investments are considered only to be a cost to the company with no shareholders' value associated with them. However, there is a little reference to the benefits gained by businesses that have undertaken such investments. In contrast, Christopher et al. (2013) argue that good corporate environmental performance attracts resources to the firm, including better quality employees and expanded market opportunities. Gans and Hintermann (2013) found that companies which had poor pollution control records experienced a more negative return than those with effective pollution control systems in place. They argued that the negative return might arise because investors were discriminating between firms on the grounds of pollution control expenditure and past pollution control records. Despite this, investors still view environmental investments as a financial loss to the enterprise, that is, an investment with no return. Such investor's perception can create conflict between management and shareholders as the latter may view management not to be acting in their best interest by investing in reducing negative environmental performance. This belief may result in shareholders' shying away from companies which embed environmental investments in their operations (Ioannou & Serafeim, 2015). Substantiating the above, Ioannou and Serafeim (2015) found that investors have started discounting the returns of companies that are poorly positioned to a green economy since customers are increasingly considering environmental performance of businesses when making purchasing decisions.

Notwithstanding, there is a need to enlighten shareholders of the gains accruable to the firm from environmental investments. The need to enlighten shareholders lends credence to the fact that there is no mechanism to translate costs incurred in environmental investment into shareholder value. In encouraging environmental investments, a study was done by Depoers, Jeanjean and Jérôme (2016) show that the stock market reacts negatively to the release of information about high polluting firms and that environmental awards result in positive stock returns. Conversely, Hart and Ahuja (1996) argue that pollution and waste in the production process signify inefficiencies, and that waste is an unrecoverable cost. It follows, therefore, that, investments aimed at reducing environmental impact may significantly reduce wastage in the production process. As such, King and Lenox (2001) in agreement with Hart and Ahuja (1996) note that not only does the installation and operating costs of end-process pollution mechanisms reduce cost significantly; it also tends to increase productivity and efficiency. The contrasting literature reviewed in this paper gives more premises to investigate the relationship between environmental investments and financial performance. This is vital to establish if and when returns can be made from investing in environmental performance.

Additionally, Goncalves, Robinot and Michel (2016) posit that management should find a balance where environmental investments are profitable and cause a return on assets. Finding the optimal level of environmental investment is key to creating shareholder value by generating returns to assets. Flammer (2013) affirms that any environmental investment beyond the optimal level erodes shareholder value. In support, Rexhãuser and Rammer (2014) attest that failure by management to determine and maintain an optimal level of environmental investment generates a negative relationship between shareholder value and environmental investments. Moreover, other studies by Guerrero, Maas, and Hogland (2013) supported by Yook, Song, Patten and Kim (2017) support the notion that environmental investments erode shareholder value as they are not meant to yield returns for companies, they, therefore, represent marginal expenditure.

On the contrary, Chapple, Clarkson and Gold (2013) supported by Sebastianelli, Taimimi and Iacocca (2015) argue that environmental investments reflect responsible management which is adapted to change sending a signal of their innovativeness and competitiveness of the company. Additionally, Matsumura, Prakash, and Vera-Munõz (2013) state that environmental investments generate shareholder value by attracting new business and differentiating the company from those that do not have an investment in the environment. Environmental investments also shield companies from future environmental-related penalties given the ever-increasing scrutiny on environmental pollution. In support, Aravena, Riquelme, and Denny (2016) agree that environmental investment also reduces future expenditure in environmental rehabilitation costs which also generates shareholder value. Kunapatarawong and Martînez-Ros (2016) in agreement with Clarke and Friedman agree that investors discount the value of non-environmental investing companies premised on the fact that they are not competitively positioned in an evergreening global business environment. Therefore, there are benefits to be derived from corporate environmental investments. This study is not meant to guarantee that corporate environmental investments always result in an increased return on assets; it instead seeks to establish that, in most instances, costs and expenditure incurred in environmental investments can partly or wholly compensate for gains derived from other spheres of the same investment.

3. Research Methodology

The paper adopted a quantitative research design by analysing secondary data from the financial statements of companies listed on the Social Responsibility Index consecutively from 2008 to 2017. Panel data analysis consisting of the random and fixed effects models was used to analyse the data. The study adopted the Hausman test to determine the most appropriate model. Data was also tested for multicollinearity and heteroscedasticity in order to enhance the reliability of the regression results. In this study, return on assets (ROA) was used as a dependent variable, and independent variables are an investment in carbon emissions reduction (INVCER) and investment in hazardous solid waste reduction (INVHSW). The study used two control variables namely, the cash flow adequacy ratio and leverage factor. Breusch-Pagan test for heteroscedasticity was performed in order to ensure reliability in the regression model results.

Formula

$ROA\_it=\alpha+\beta_1*INVCER_1\_it+\beta_2*INVHSW_2\_it\beta_3*CSHFAR_1\_it+\beta_4*LEVF_2\_it+\varepsilon$ (1)

Where ROA = return on assets

$INVCER_1$= investments in carbon emissions reduction

$INVHSW_2$ = investments in hazardous solid waste disposal

$CSHFAR_1$= cash flow adequacy ratio

$LEVF_2$ = leverage factor

α = intercept

ε = error term

4. Results and Discussions

The study produced intriguing results from both the Fixed-effects and Random-effects models. Panel data multiple regressions were first tested on the Fixed-effects model. The model attempts to establish the nature of the relationship between return on assets and investment in carbon emission reduction. The result shows an insignificant relationship tested at 95% confidence level between investment in carbon emission reduction and return on assets including the control variables of leverage factor and cash adequacy ratio. The disclosure of summary data in Figure 1 provides a comprehensive overview of the number of observations, minimum, mean and maximum figures of the data used in the study. Table 1 below shows the summary statistics performed in this study.

Table 1. Summarized data

Variable	Obs	Mean	Std. Dev.	Min	Max
Roa	640	19.9224	61.43096	-51	805.43
Carbon emission reduction	640	5659988	8043694	52451	8.55E+07
Hazardous solid waste	640	444870.2	870243.3	-3046.02	5076700
Leverage	640	3.70987	12.80384	-13	155.65
Cash flow adequacy	640	158.8304	1069.23	-7734	6314

Source: Authors' results of descriptive statistics from Stata

Table 1 displays the data from the summary statistics carried out in the study. The study identified 640 observations for which no error was found for on each variable. The mean, a measure of central tendency in grouped data shows investment in carbon emission reduction with the largest average of 5659988 followed by investment in hazardous solid waste with a mean of 444870.2 while the remaining variables have significantly smaller averages. The standard deviation which shows the degree of dispersion in data distribution has an investment in hazardous solid waste and investment in carbon emission reduction as the most spread variables. This is due to the varying large amounts invested by the different companies which also vary in company size and financial muscle. Moreover, minimum and maximum figures which measure the range between the smallest and the most significant amount in a data set are also significantly huge. The wide range refers to the different company sizes which influence their financial resources.

Table 2. Two-sample t test with equal variances

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Leverage	640	3.70987	0.84426	12.80384	2.046359	5.37338
Cash flow adequacy	640	158.8304	70.50297	1069.23	19.91299	297.7479
Combined	1280	81.27015	35.40118	759.2707	11.70168	150.8386
Diff	-155.121	70.50802	-293.68	-16.5612		

diff = mean(leverage) – mean (cash flow adequacy); t = -2.2000; Ho: diff = 0; degrees of freedom = 458; Ha: diff < 0; Ha: diff! = 0; Ha: diff > 0; Pr(T < t) = 0.0142; Pr(|T| > |t|) = 0.0283; Pr(T > t) = 0.9858

Table 3. Correlation matrix

	Return on Assets	Inv in CE	Inv in HSW	Leverage factor	Adequacy ratio
_ROA	1.000				
Inv in CE	0.1411	1.000			
Inv in HSW	0.0710	0.5479	1.000		
Leverage factor	-0.0336	-0.0509	-0.0326	1.000	
Adequacy ratio	-0.2158	-0.0275	-0.0445	-0.0520	1.000
_cons	-0.5185	-0.3469	-0.2040	-0.1111	1.000

Table 3 presents a correlation matrix to establish the nature of the one to one relationships between the measured variables. The correlation is between 0.0 and 1.0, with 0.0 stipulating the absence of a relationship and 1.0 indicating the presence of a relationship. The closer the number is to 1.0, the stronger the relationship. A positive correlation stipulates a direct correlation where an increase in the independent variables results is an increase in the dependent variable and an inverse relationship for the negative correlation. In Figure 2 both independent variables, investment in carbon emission and hazardous solid waste have positive correlations of 0.1411 and 0.0710 respectively. The result shows that any investment in carbon emission and hazardous solid waste is likely to lead to an increase equal to the correlation between return on assets. However, the controlling variables of leverage and adequacy ratio show a negative correlation to return on assets of -0.1620 and -0.2158.

Nonetheless, all these relationships are not strong since they are not close to 1.0. However, the correlation matrix result does not ensure the absence of autocorrelation in the data set. The following section tests for autocorrelation in the data set in order to enhance the result of the actual relationships being examined within the data.

Figure 3. Durbin-Waston Multicollinearity test.

Durbin-Waston d- statistic (5, 230) = 1.563044

The Durbin-Waston statistic is a number that examines the autocorrelation in residuals from a statistical regression analysis. The Durbin-Waston statistical test was performed to test for autocorrelation within the panel data set. The test was appropriate to enhance the reliability of the regression result being examined by testing for any bias arising from autocorrelation. With a large data set being examined in this study, the large quantum of data may give rise to relationships within the data itself thereby affecting the authenticity of the panel data regression. The Durbin-Waston statistic is between 0 and 4. A value of 2 indicates the absence of any autocorrelation within the data set. A value that is substantially less than 2, or closer to zero signifies serial autocorrelation within the data set. This study had a Durbin-Waston d-statistic of 1.563044 which is closer to 2 signifying the absence of autocorrelation within the data set used for this study. Therefore, the variables used in the study had no relationships within themselves apart from that being tested in this study. The following section shows the scatter plot result of all the variables for ten years. This is vital to show how one variable is affected by another variable.

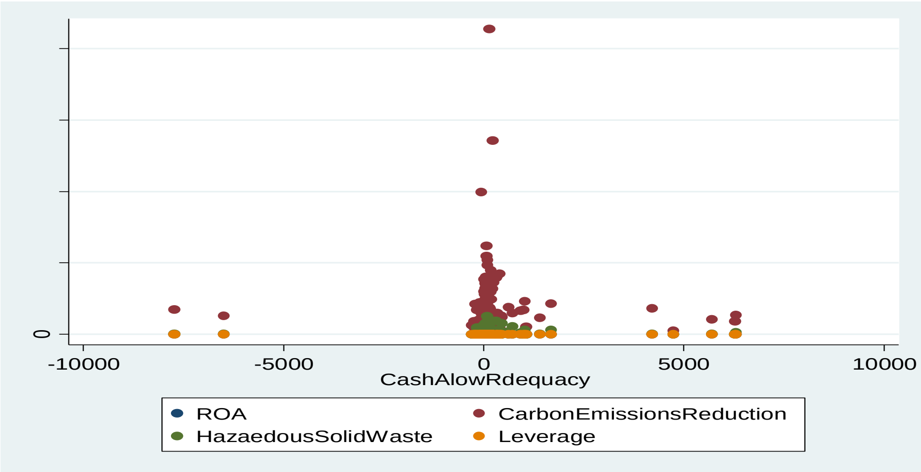


Figure 4. Scatter diagram for all variables

Scatter plots are used to represent correlations between variables. Scatters plots measure correlation which is always between -1 and +1. With an amount near -1 indicating perfect negative correlation, amounts near 0 indicating no correlation and amounts near +1 signalling a positive relationship. Figure 4 shows a scatter diagram with a significant amount of the variables clustered around zero. Although, there are a few outliers' variables of investment in carbon emission reduction and leverage factor clustered around 5000 and slightly before -5000, most variables cluster around zero. Figure 4 indicates a correlation of zero showing that there is no relationship between the variables. The following is a Breusch-Pagan test, a test which is used to measure heteroscedasticity within a data set.

Figure 5. Breusch-Pagan/Cook-Weisberg test for heteroscedasticity

Ho: Constant variance

Variables: fitted values of return on assets

$chi^{2(1)}$ = 47.50

Prob > chi^2 = 0.0000

The Breusch-Pagan test was performed to test the dependent variable, return on assets, testing for heteroscedasticity. If error terms lack a constant variance, they are heteroskedastic, on the contrary when the variance of an error term is constant the data set is said to be homoscedastic. A large chi-square indicates heteroscedasticity; however, return on assets has a probability chi-square of 0.000 which proves that heteroscedasticity is not present. Heteroscedasticity test was also performed on the independent variables to check if the data set does not have a constant error term.

Figure 6. Breusch-Pagan/Cook-Weisberg test for heteroscedasticity

Variables: carbon emissions reduction; hazardous solid waste; leverage; cash flow adequacy ratio

$chi^{2(4)}$ = 51.68

Prob > chi^2 = 0.0000

The Breusch-Pagan test for heteroscedasticity performed on the independent variables produced results consistent with those produced by the same test on return on assets. The independent variables produced a probability chi-square of 0.0000 indicating that the error term in the independent variables does not have a constant variance. Therefore, heteroscedasticity was not found in the independent variables. The following section details the findings of the study. The study used a multiple least squares regression analysis to examine the nature of the relationship between investments to reduce carbon emission reduction, hazardous solid waste disposal and return on assets.

Fixed Effects Regression Model on Carbon Emission and Hazardous Solid Waste

The fixed and random effects regression model on carbon emission and hazardous solid waste are depicted in Figure 7 and Figure 8 respectively. The difference between the results emanates from the absorption into the intercept of time-invariant variables in the equation by the fixed effects while the random effects incorporate them into the equation.

Figure 7. Fixed effects regression model of investment in carbon emission reduction and hazardous solid waste reduction

Fixed-effects (within) regression Number of obs = 640

Group variable: cocode Number of groups = 64

R-sq: within = 0.0467 Obs per group: min = 10

between = 0.4958 avg = 10.0

overall = 0.0002 max = 10

F(4,203) = 2.48

corr(u_i, Xb) = -0.3748 Prob > F = 0.0449

ROA	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
Carbon emission reduction	7.75E-08	5.43E-07	-0.14	0.887	-1.15E-06	9.94E-07
Hazardous solid waste	-9.77E-07	5.94E-06	0.16	0.870	-1.1E-05	1.27E-05
Leverage	-1.04468	0.333445	-3.13	0.002	-1.70214	-0.38722
Cash flow adequacy	-0.00096	0.004004	-0.24	0.810	-0.00886	0.006931
_cons	23.95508	5.556715	4.31	0.000	12.9988	34.91136
sigma_u	33.88968					

sigma_e	56.44817	
Rho	0.264945	(fraction of variance due to u_i)

F test that all u_i=0: F(22, 203) = 2.99 Prob> F = 0.0000

The fixed-effects multiple regression models of investment in carbon emission reduction in Figure 7 shows a positive relationship between return on assets and investment in carbon emission reduction. The result shows a positive coefficient of 7.75E-08 in Figure 7. The result indicates that for every unit investment in carbon emission reduction, return on assets will generate a value equal to the coefficient. Moreover, the fixed effects model has a T-statistic of -0.14 which is less than 1.96 when tested at 95% confidence level. A T-statistic of such a size shows that investment in carbon emission reduction is not significant enough to influence return on assets. Also, investment in carbon emission reduction has a P-value of 0.887 which is greater than the significance level 0.05 (model tested at 95% confidence) which further explains the inability of investment in carbon emission reduction to influence return on assets significantly.

The control variables of leverage factor and cash adequacy ratio (see Figure 7) also indicate a negative relationship with return on assets as evidenced by a negative coefficient of -1.04468 and -0.00096 respectively. The T-statistic of both leverage factor is and adequacy ratio is -3.13 and -0.24 respectively which are all smaller than 1.96 when tested at 95% confidence level. Therefore, the control variables cannot in any significant way influence on return on assets. The P-value for the leverage factor is 0.002, and cash adequacy ratio is 0.810. As such, leverage is not significant enough to explain the movements in return on assets as the P-value is below the confidence level of 0.05%. Cash flow adequacy ratio has a P-value greater than 0.005; therefore significant to influence changes in return on assets. However, based on the interpretations of coefficients and T-values both control variables are insignificant to explain the movements on return on assets. Therefore, for the fixed-effects multiple regression models, after controlling for leverage and cash adequacy, investment in carbon emission reduction generates a negative relationship with return on assets.

In figure 7, hazardous solid waste generates a negative coefficient of -9.77E-07 to return on assets. An indication that one unit of investment in hazardous solid waste reduction will result in a return on assets losing 9.77E-07 units. Also, hazardous solid waste has a T-statistic of 0.16 which is less than 1.96 when tested at 95% confidence level. This T-statistic stipulates that hazardous solid waste not significant enough to materially influence the movements on return on assets. The P-value of 0.870 is higher than the confidence level of 0.05 further showing the inability of hazardous solid waste to explain any movements on return on assets. The following section presents the random effects multiple regression model of investment in carbon emission reduction and hazardous solid waste reduction.

Figure 8. Random effects regression model of carbon emission reduction and hazardous solid waste

Random-effects GLS regression	Number of obs = 640
Group variable: cocode	Number of groups = 64
R-sq: within = 0.0234	Obs per group: min = 10
between = 0.0345	avg = 10.0
overall = 0.0063	max = 10
	Wald $chi^{2(4)}$ = 2.21
corr(u_i, X)= 0 (assumed)	Prob > chi^2 =0.6968

Roa	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
Carbon emission reduction	-3.29E-07	5.12E-07	-0.64	0.520	-1.33E-06	6.74E-07
Hazardous solid waste	-2.33E-06	4.92E-06	-0.47	0.636	-1.2E-05	7.32E-06
Leverage	-0.30073	0.320345	-0.94	0.348	-0.9286	0.327132
Cash flow adequacy	-0.00303	0.003828	-0.79	0.429	-0.01053	0.004477
_cons	24.417	6.061226	4.03	0.000	12.53721	36.29679
sigma_u	12.01465					
sigma_e	56.44817					
Rho	0.043339	(fraction of variance due to u_i)				

The random effects multiple regression model of investment in carbon emission reduction and hazardous solid waste in Figure 8 shows negative coefficients of -3.29E-07 and -2.33E-06 respectively. The result indicates that every unit of investment in carbon emission reduction and hazardous solid waste will lead to a return on assets decreasing by the same amount. Investment in carbon emission reduction and hazardous solid waste have P-values of 0.520 and 0.636 which are both higher than the confidence level of 0.05 is signifying the strength of the negative relationship. The controlling variables of the leverage factor and cash adequacy ratio also show negative coefficients of -0.30073 and -0.00303 respectively stipulating a negative relationship with return on assets. The P-values of carbon emission reduction and hazardous solid waste are 0.348 and 0.429 respectively, further reflecting the inability of the control variables to influence the dependent variable. As such, after controlling for leverage and cash adequacy, investment in hazardous solid waste and carbon emission reduction generates a negative correlation with return on assets using the random effects regression model.

Given the different strengths of the models analysed above, it was necessary to perform the Hausman test as a determinant of the most appropriate model to adopt for the study. The fixed effects model absorbs time-invariant variables into the intercept thereby holding them constant while analysing the causal relationship between the environmental variables and return on assets. The random effects model includes all time-invariant variables into the analysis in an attempt to portray a more real-life relationship between the variables under study. The Hausman test was utilised to determine the appropriateness of the model to be adopted for this study.

Figure 9. The Hausman test for investment in carbon emission reduction and hazardous solid waste

	(b) 1. Fixed	(B) Random	(b-B) Difference	Sqrt (diag (V_b-V_B) S.E.
Carbon emission reduction	-7.75e-08	-3.29e-07	2.52e-07	1.82e-07
Hazardous solid waste	9.77e-07	-2.33e-06	3.30e-06	3.33e-06
leverage	−1.044676	−0.3007331	-0.7439432	0.092545
Cash flow adequacy	−0.0009629	−0.0030269	0.0020639	0.011723

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$chi^{2(2)}$ = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 65.96

Prob>chi^2 = 0.0000

Figure 9 presents a Hausman test on investment in carbon emission reduction and hazardous solid waste to determine which multiple regression model is appropriate for this study. The Hausman test shows a probability of 0.0000 which is less than the confidence level of 0.05. Such a low probability accepts the fixed effects regression model and rejects the random effects regression model. A low probability chi-square of 0.000 on the Hausman test indicates that the results of the fixed effects regression are also significant. The coefficients and t-values also support the significance of the fixed effects regression model in figure 7. Therefore, the fixed effects regression model results showing a positive relationship between investment in carbon emission reduction and return on assets is accepted.

The study found a positive correlation between corporate investments in carbon emission reduction and return on assets. Corporate investments in carbon emission reduction technology resulted in significant increases in return on assets. These results are consistent with studies by Strezov and Evans (2016) which found that corporate environmental investment is not only a cost to the company but act as a differentiation tool to the company's operations and products thereby opening new markets and opportunities for the business. Other similar results were in a study by Christopher, Hutomo, and Monroe (2013) which found that corporate environmental investment in carbon emission reduction induces energy efficiency in operations ultimately resulting in growth in return on assets.

The study also examined the relationship between corporate investment in the reduction of hazardous solid waste disposal and the return on assets. The study found that investments to reduce hazardous solid waste disposal result in recognisable increases to return on assets. These results are consistent with findings by Depoers, Jeanjean and Jérôme (2016) and Ioannou and Serafeim (2015) which found that reducing hazardous solid waste disposal minimises waste within the production process thereby increasing efficient utilisation of resources within the manufacturing process. They also found that reducing hazardous solid waste disposal reduces the risk of future liabilities through environmental damage lawsuits, strikes and fines for environmental damage which creates significant growth to return on assets.

5. Conclusions

This paper examined the relationship between corporate environmental investment in carbon emission reduction, hazardous solid waste disposal reduction and return on assets. The results of the study show a positive correlation between investments to reduce carbon emissions and return on assets and a negative correlation between investment hazardous solid waste disposal and return on assets.

Corporate environmental investments are intended to reduce carbon emissions results in significant shareholder gains to return on assets which are contrary to the traditional view that they are an unnecessary cost to the company. The study shows that corporate environmental investments in carbon emissions reduction result in energy efficiency, waste reduction, reduced future liabilities which all ultimately increase return on assets. Other gains are derived from the differentiation of the company associated with environmental investment which opens up new market opportunities for the enterprise. Companies are also poised to benefit from reduced pollution fines and taxes such as the new carbon tax in South Africa.

This paper also establishes that environmental investments to reduce hazardous solid waste are not related to return on assets. The study concedes that investment in hazardous solid waste disposal is essential and necessary to maintain a sustainable operational environment and to preserve good stakeholder relations necessary for the survival and sustainable growth of companies and does not result in gains to return on assets. As such, investments to reduce hazardous solid waste should be to the level of regulatory compliance as any investment beyond that will begin to erode shareholder value.

This study is contrary to the traditional perspective which regarded environmental investment as increasing the expenditure of the company. The positive relationship established in this study is significant as it will encourage company management to invest in reducing the environmental footprint of their businesses. This study justifies the notion of adopting sustainable business practices especially in mining and manufacturing companies that have traditionally been considered as the heaviest polluters of the environment. Not only are companies encouraged to adopt sustainable business practices but the study reveals that there is shareholder value measured by return on assets attributable to such investments.

5. References

Aravena, C.; Riquelme, A. & Denny, E. (2016). Money, comfort or environment? Priorities and determinants of energy efficiency investments in Irish households. *Journal of Consumer Policy*, 39(2), pp. 159-186.

Brown, N.; Malmqvist, T. & Wintzell, H. (2016). Owner organisations' value-creation strategies through environmental certification of buildings. *Building Research & Information*, 44(8), pp. 863-874.

Chapple, L.; Clarkson, P.M. & Gold, D.L. (2013). The cost of carbon: Capital market effects of the proposed emission trading scheme (ETS). *Abacus*, 49(1), pp. 1-33.

Christopher, T; Hutomo, S. & Monroe, G. (2013). Voluntary environmental disclosure by Australia's listed mineral mining companies: an application of stakeholder theory. *The International Journal of Accounting Business Society*, 5(1), pp. 42-66.

Clarke, C. & Friedman, H.H. (2016). Maximising shareholder value: A theory runs amok. *i-manager's Journal of Management*, 10(4), pp. 45-60.

Depoers, F.; Jeanjean, T. & Jérôme, T. (2016). Voluntary disclosure of greenhouse gas emissions: Contrasting the carbon disclosure project and corporate reports. *Journal of Business Ethics*, 134(3), pp. 445-461.

Depoers, F.; Jeanjean, T. & Jérôme, T. (2016). Voluntary disclosure of greenhouse gas emissions: Contrasting the carbon disclosure project and corporate reports. *Journal of Business Ethics*, 134(3), pp. 445-461.

Flammer, C. (2013). Corporate social responsibility and shareholder reaction: The environmental awareness of investors. *Academy of Management Journal*, 56(3), pp. 758-781.

Gans, W. & Hintermann, B. (2013). Market effects of voluntary climate action by firms: Evidence from the Chicago Climate Exchange. *Environmental and Resource Economics*, 55(2), pp. 291-308.

Garcia, L.C.; Ribeiro, D.B.; Oliveira Roque, F.; Ochoa-Quintero, J.M. & Laurance, W.F. (2017). Brazil's worst mining disaster: corporations must be compelled to pay the actual environmental costs. *Ecological Applications*, 27(1), pp. 5-9.

Goncalves, O.; Robinot, E. & Michel, H. (2016). Does it pay to be green? The case of French ski resorts. *Journal of Travel Research*, 55(7), pp. 889-903.

Guerrero, L.A.; Maas, G. & Hogland, W. (2013). Solid waste management challenges for cities in developing countries. *Waste Management*, 33(1), pp. 220-232.

Hart, S.L. & Ahuja, G. (1996). Does it pay to be green? An empirical examination of the relationship between emission reduction and firm performance. *Business strategy and the Environment*, 5(1), pp. 30-37.

Ioannou, I. & Serafeim, G. (2015). The impact of corporate social responsibility on investment recommendations: Analysts' perceptions and shifting institutional logics. *Strategic Management Journal*, 36(7), pp. 1053-1081.

King, A.A. & Lenox, M.J. (2001). Does it really pay to be green? An empirical study of firm environmental and financial performance: An empirical study of firm environmental and financial performance. *Journal of Industrial Ecology*, 5(1), pp. 105-116.

Kunapatarawong, R. & Martínez-Ros, E. (2016). Towards green growth: How does green innovation affect employment? *Research Policy*, 45(6), pp. 1218-1232.

Matsumura, E.M.; Prakash, R. & Vera-Muñoz, S. C. (2013). Firm-value effects of carbon emissions and carbon disclosures. *The Accounting Review*, 89(2), pp. 695-724.

Rexhäuser, S. & Rammer, C. (2014). Environmental innovations and firm profitability: unmasking the Porter hypothesis. *Environmental and Resource Economics*, 57(1), pp. 145-167.

Sebastianelli, R.; Tamimi, N. & Iacocca, K. (2015). Improving the quality of environmental management: impact on shareholder value. *International Journal of Quality & Reliability Management*, 32(1), pp. 53-80.

Streimikiene, D.; Navikaite, A. & Varanavicius, V. (2016). Company's Value Creation Via Customer Satisfaction and Environmental Sustainability Influence. *Montenegrin Journal of Economics*, 12(4), pp. 19-24.

Strezov, V. & Evans, T. (2017). *Assessment of sustainability of mineral processing industries*. In S. Devasahayam, K. Dowling, & M.K. Mahapatra (Eds.). *Sustainability in the mineral and energy sectors* (pp. 15-25). Boca Raton: CRC Press, Taylor & Francis Group.

Yook, K.H.; Song, H.; Patten, D.M. & Kim, I.W. (2017). The disclosure of environmental conservation costs and its relation to eco-efficiency: Evidence from Japan. *Sustainability Accounting, Management and Policy Journal*, 8(1), pp. 20-42.