# TOWARDS IMPROVING RESEARCH AMONG COST AND MANAGEMENT ACCOUNTING ACADEMICS AT UNIVERSITIES OF TECHNOLOGY: A STUDY OF SOUTH AFRICA AND GERMANY

**by**

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## DECLARATION

I, Sandra Rosentreter declare that this thesis represents research work carried out by myself and that it has not been submitted in any form for another degree at any university or higher learning institution. All information used from published or unpublished work of others has been acknowledged in the text.

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# ABSTRACT

The research outputs of Accountancy academics in South Africa seem to lag far behind those of their counterparts abroad (West, 2006:121, *see also* Chan, Chen and Cheng, 2005). Van der Schyf (2008:1) concurs that departments of Accounting at South African universities have established a culture that is removed from research, and that this is in contrast to the nature of a university. A matter of concern is that only a few institutions make up the national research output (De Villiers and Steyn, 2009:43) and especially universities of technology (UoTs) seem to lag behind traditional universities with regard to research output, as a consequence of a lack of emphasis on postgraduate qualifications and published research in the pre-merged technikons and the merged institutes of technology (Singh, 2011:1191). This becomes challenging with regard to the New Funding Framework (South Africa, 2004) which provides funding based on research outputs.

Given the above, the aim of this study was to investigate research output among Cost and Management Accounting academics at universities of technology in SA and toward universities of applied sciences in Germany by examining their attitudes toward research, their qualifications and the structure of their master's programs.

Underpinned by Bandura's Social Cognitive Theory, this study used a mixed methods approach to gather both qualitative and quantitative data from Cost and Management Accounting (CMA) academics at South African universities of technology and Accounting academics at German universities of applied sciences.

Analysis of data revealed that academics in both countries showed a positive attitude towards research and obtaining postgraduate qualifications. Despite the absence of a German research funding policy comparable to the South

Africa, similar factors seem to influence academics in their research activities in both countries. These include time available for research; support systems and intrinsic motivators. South African respondents showed a lack of qualifications among their staff which reflected on their research skills and therefore, output. Based on the findings, this study makes recommendations to CMA departments at South African universities of technology and Accounting departments at German universities of applied sciences toward improving of research output.

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# ABBREVIATIONS USED IN THIS STUDY

| | |
|---|---|
| CHE | Council on Higher Education |
| CMA | Cost and Management Accounting |
| CPUT | Cape Peninsula University of Technology |
| CUT | Central University of Technology |
| DoHET | Department of Higher Education and Training |
| DNE | Department of National Education |
| DUT | Durban University of Technology |
| FET | Further Education and Training |
| HEI | Higher Education Institution |
| MUT | Mangosuthu University of Technology |
| N Tech | Natal Technikon |
| NCHE | National Commission on Higher Education |
| SA | Republic of South Africa |
| SA | South Africa |
| TUT | Tshwane University of Technology |
| UCT | University of Cape Town |
| Unisa | University of South Africa |
| VUT | Vaal University of Technology |
| WWII | World War II |

# APPENDICES

# CHAPTER ONE

# INTRODUCTION

## 1.1 BACKGROUND TO THE STUDY

*Today knowledge has power. It controls access to opportunity and advancement.*

*(Peter Drucker, 1959:98)*

The ability to benefit from the power of knowledge depends on the production of knowledge. According to Castells (1993:69), higher education institutions are the power sources of knowledge. South Africa's power sources of knowledge are represented by 23 public higher education institutions and 87 private higher education institutions (Council on Higher Education [CHE], 2012a). The public higher education landscape is dominated by three kinds of higher education institutions: universities; universities of technology; and comprehensive universities (CHE, 2012a). South African universities have strong research capacities and a high proportion of postgraduate students (South African Higher Education: Facts and Figures, 2012) whereas universities of technology are career oriented institutions which concentrate on problem-solving in their research and engagement with the community (Backhouse, 2009:3). Comprehensive universities focus on teaching but also conduct research (South African Higher Education: Facts and Figures, 2012).

According to the German Academic Exchange Service (Types of Higher Education Institutions, 2012), 270 public higher education institutions 37 church-maintained colleges and 102 private universities form the German higher education sector. They specify that the public higher education sector is divided into three kinds of higher education institutions: universities;

universities of applied sciences (UoAs); and colleges of music, art or film. German universities offer a scientific-orientated education whereas universities of applied sciences cater for a more praxis-orientated education by offering scientifically based education tailored to the demands of professional life (Types of Higher Education Institutions, 2012). The German Federal Ministry of Education (Bundesministerium für Bildung und Forschung [BMBF], 2012) explains that universities of applied sciences offer a wide range of subjects in the engineering, natural, economic, social and health sciences, and a Bachelor or a Master's degree can be obtained in this kind of institution. Research at UoAs is application-based and provides the transfer of knowledge and technology to companies (BMBF, 2012).

Germany's higher education sector has undergone numerous changes in the last ten years due to the Bologna Process. The Bologna Process is a declaration and working program at the same time based on the Sorbonne Declaration from 1998 and signed by 29 European ministers of education (Pechar, 2007:112) for the establishment of a European higher education system compatible with the 'Anglo-Saxon model' (Ash, 2006:259). Degree programmes were therefore made compatible with the 'Anglo-Saxon model' as Germany made no differentiation between the Bachelor and Master's degree before Bologna (Dysthe and Webler, 2010:259).

South Africa's higher education system was subject to significant changes in the 1990s (Gultig, 2000:37) as well. These were driven by the aim to redress the inequalities of the past left by the pre-1994 legacy of the apartheid regime (Fiske and Ladd, 2006:96). However, some of these changes were not consequences of an apartheid regime but rather the consequence of global and local changes in the economy (Gultig, 2000:37; Geertsema and van Niekerk, 2009:912). As a result of economic changes in public higher education (Geertsema and van Niekerk, 2009:912), research capacity development at higher education institutions has become a key focus (Balfour and Lenta, 2009:8).

Policy steers the higher education sector towards a research intensive culture by allocating funding according to an institutions' research activity (Madue, 2008:128). The Department of National Education's National Plan for Higher Education (SA, 2001), The New Funding Framework (SA, 2004), and The Ministerial Statement on Higher Education Funding: 2006/2007 to 2008/2009 (SA, 2006) provide for research at universities to be funded on the basis of their research outputs.

### 1.1.1 New funding framework for South African higher education institutions

The new funding framework introduced in 2004 by the Department of Education considers teaching input and teaching output a block grant for institutional factors and research output. Figure 1.1 (below) illustrates the funding formula.

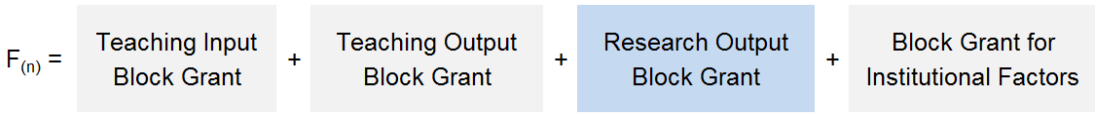


*Figure 1.1: New funding framework for SA HEIs*

*(Adapted from: De Villiers and Steyn, 2009:46)*

Block grants in the year (n) are distributed according to student enrolments year (n-2), qualifications awarded in year (n-2), research output in year (n-2) and certain other institutional data for year (n-2) (De Villiers and Steyn, 2009:46). The research Output Block Grant is divided into two parts. Part one provides funding per approved publications in accredited journals, doctoral degrees and research master's degrees (De Villiers and Steyn, 2009:60). Part two intends to support those institutions with a research output below the national research output norm in year (n-2) (De Villiers and Steyn, 2009:46). They add that the lower the research output, the higher the research development grant allocated to these institutions.

Nieuwoudt and Wilcocks (2005:1) therefore caution that academics must publish more research as the South African government is restructuring tertiary education and subsidies to universities that do not build and strengthen their research capacity, will be severely restricted. Universities have to accept the reality that research is rewarded more in academia than good teaching and curriculum efforts (Force, 2002).

South Africa's Department of Education expects every academic to publish at least 1.25 articles annually in journals but the performance of academics at South African higher education institutions is lower than the expected 1.25 articles per academic per year (Schulze, 2008:644). A matter of concern is that only a few institutions make up the national research output (De Villiers and Steyn, 2009:43) and especially universities of technology seem to lag behind traditional universities with regard to research output, as a consequence of a lack of emphasis on postgraduate qualifications and published research in the pre-merged technikons and the merged institutes of technology (Singh, 2011:1191).

The focus of this study is located in Cost and Management Accounting (CMA), as a subset of Accountancy. The following section discusses research output in Accountancy.

### 1.1.2 Research output in Accountancy

The Ministry of Higher Education and Training (Ministerial Statement on University Funding 2011/2012, 2010:12) expects every academic at UoTs to achieve a normative weighted research output of 0.50 units per year. The Statement further explains that a weighted research output unit consists of doctoral and research master's graduate headcount as well as publication units. The research outputs of Accountancy academics in South Africa seem to lag far behind those of their counterparts abroad (West, 2006:121, *see also* Chan, Chen and Cheng, 2005). Van der Schyf (2008:1) concurs that departments of Accounting at South African universities have established a culture that is removed from research, and that this is in contrast to the

nature of a university. This lag in research reflects negatively the function of universities which according to Graham (2002:60) should be the transmission of knowledge through teaching, and the extension of knowledge through research. Dardagan (in Singh, 2009) concurs that teaching, learning and service influence research and *vice-versa* just as teaching informs publication and publications inform teaching. Singh adds that universities by any name (whether they are traditional universities, universities, universities of technology, research institutions or entrepreneurial institutions) need to be actively involved in research. Kachelmeier (2002:36) agrees that neither PhD students nor accounting faculties can succeed at reputable universities without conducting and publishing quality research.

### 1.1.3 The effect of qualifications on research output

The Council on Higher Education (2009a:73) states that the quality of academic staff is critical to the success of the research missions of institutions. They reiterate that 66% of academic staff at public universities in South Africa are qualified at levels lower than a master's. At universities of technology 73% of the staff are qualified lower than a master's which is one place behind the leading position obtained by traditional universities. The comprehensive universities lag behind with 75% of their staff qualified lower than a master's (CHE, 2009a:73).

West (2006) conducted a survey of qualifications of academic staff in Accounting in selected universities in South Africa, Australia, Canada and the United Kingdom. He found that of the South African institutions selected; only the University of Pretoria came close to the overseas institutions in terms of the percentage of numbers of staff who hold higher degrees.

### 1.1.4 The effect of time on research output

With increased enrolments at tertiary institutions in South Africa, academics are constantly under pressure to balance teaching time with administrative duties and research. Debates surrounding the amount of time (Costigan,

2002; Doost, 1999; Force, 2002; Read, Rama and Raghunandan, 1998) and resources that should be allocated to teaching and research therefore continue unresolved.

### 1.1.5 The effect of a programme's structure on research output

The structure of higher degree programs differs from one institution to the next with some offering full research courses and others offering coursework qualifications. Atkins and Redley (1998); Conrad, Haworth and Millar (1993); Demb and Funk (1999); Orna and Stevens (1995) found in favour of students undertaking research theses at master's level as it develops problem solving capabilities, the ability to read, write, analyze, plan, and to develop work. Frecka and Nichols (2004), and Drennan and Clarke (2009) found that the completion of a minor thesis as a component of a coursework master's degree leads to positive student outcomes in research ability and applicability.

## 1.2 DEMARCATION OF THE PROBLEM

The Council on Higher Education (2009b:22) recognizes that South African academics are increasingly burdened with unrealistically high numbers of postgraduate students to supervise. They add that while there was a doubling of postgraduate students in the past 15 years, the number of permanent academics has only increased by 40% over the same period. This shows that there is a demand for postgraduate qualifications but the supervision capacity at institutions cannot meet the demand.

Telephone conversations with members of staff in CMA at two UoTs showed that there is a huge demand for master's and doctorates in the field of CMA but many members of staff are not suitably qualified to supervise students. This lack of supervision capacity means that postgraduate students are turned away which in turn means a lack of research output for the department and the university. A further repercussion is the loss of revenue for the university. Singh (2011: 1191) explains that academics are pressured

to improve their qualifications as many higher education employment policies nowadays intend to only employ instruction/research staff with at least a master's qualification.

Several studies have been carried out to determine the factors that influence research output among academic staff with the view to improving research output. Nieuwoudt and Wilcocks' (2005) investigation into attitudes and perceptions of South African accounting academics about research showed that the main limitations to research output were: inadequate qualifications and a lack of skills with regard to conducting research (only 10% of the respondents possess a doctoral degree); insufficient time for conducting research; financial factors; a lack of mentorship and departmental support; and difficulty finding research topics.

Geertsema and van Niekerk (2009) published their work about a research profile change of a non-research intensive university. In this study the research productivity was improved by investigating the views of staff members on the factors influencing research productivity. It was found that budgeting for more research time for staff, contracting of specific research outcomes in task agreements, training of researchers in writing scientific articles, mentoring young researchers and involving more postgraduate students as researchers, led to an improvement in research output.

Although research has been carried out to give universities, faculties or departments recommendations for the improvement of their research output none of them were situated in the context that study takes place.

To the best of the researcher's knowledge no research has been conducted on the improvement of research output among Cost and Management Accounting academics at UoTs in South Africa and UoAs in Germany. This study addresses this gap.

## 1.3 THE RESEARCH AIMS AND OBJECTIVES

The aim of this study was to investigate research output among Cost and Management Accounting academics at UoTs in SA and UoAs in Germany by examining their attitudes toward research, their qualifications and the structure of their master's programs.

Aft (2000:16) states that it is necessary to know how resources contribute to productivity as knowing the attitudes and influencing factors on Cost and Management Accounting academics' research productivity could help to enable departments to improve their research output.

In order to achieve the above aim, the following objectives were addressed:

- to ascertain the attitudes and opinions of CMA academics at UoTs in South Africa and at UoAs in Germany on research;
- to ascertain the attitudes and opinions of CMA academics at UoTs in South Africa and at UoAs in Germany on obtaining postgraduate qualifications in CMA;
- to determine the factors that influence research among CMA academics in SA and Germany;
- to determine the effect of the CMA master's program structure/s offered at UoAs in Germany on research; and
- to determine the effect of the CMA master's program structure/s offered at UoTs in South Africa on research.

It is envisaged that the findings of this study will make recommendations to Cost and Management Accounting departments at universities of technology in SA in terms of improving research among CMA academics. It is hoped that lessons will be learned from Accounting academics in Germany for application in SA and *vice-versa*.

## 1.4 CONTEXT OF THE RESEARCH

This study takes cognizance of the studies by Drennan and Clarke (2009); Frecka and Nichols (2004); Nieuwoudt and Wilcocks (2005); van der Schyf (2008) and West (2006) among others. The reason for including Germany in this study are as follows; Germany is a developed country with 394 tertiary institutions which offers tiered education and clear distinctions are made between offerings at universities and UoAs; the researcher is German and is therefore familiar with tertiary education in her country, she therefore has a vested interest in research in CMA in Germany; and the UoAs in Germany offer coursework based master's only as opposed to postgraduate offering in CMA at the UoTs in SA. The announcement of the launch of the Science and Technology partnership between SA and Germany in South Africa in April 2012 was a further impetus to include Germany in this study (Germany and South Africa launch Year of Science, 2012).

## 1.5 DEFINITION OF KEY TERMS USED IN THIS STUDY

In this section key terms and their context are illuminated in order to facilitate wider understanding. These key terms are therefore introduced and explained.

### 1.5.1 Research output

Research in its broadest terms is whenever someone gathers information to answer a question that solves a problem (Booth, Colomb and Williams, 2008:10). Kumar (2005:7) narrows it down to the process for collecting, analysing, and interpreting information to answer questions. Output in its most general meaning is an amount which a company or a person or a machine produces (Medhavi and Panda, 1998:242). The produced amount of research in this study was measured by quantifying CMA academics' publications in accredited and non-accredited journals. The reason for selecting journal articles as the quantifying instrument is that there is pressure on academics to publish in journals, so that their institution receives

funding or subsidy. Other fundable research outputs are chapters in books, books and conference papers published in approved local and international publications (Govender, 2011:12).

### 1.5.2 Accredited journals

An explanation of 'accredited journals' is aptly presented on the website of the University of Pretoria where it is stated that accredited journals are recognised research output which meet specified criteria and therefore qualify for subsidisation by the Department of Education (University of Pretoria, 2011).

### 1.5.3 Higher Education Institution

The term institution embraces an established law, custom, usage, practice, organization, or other element in the political or social life of a people; a regulative principle or convention subservient to the needs of an organized community or the general ends of civilization (OED, 2011a). Within this study, the term institution is meant as organization, which is subservient to the needs of the South African Economy by providing higher education to people.

According to the higher education Amendment Bill (SA, 2008:33) a higher education institution means any institution that provides higher education on a full-time, part-time or distance basis.

## 1.6 OVERVIEW OF THE STUDY

This study consists of five chapters as follows:

The first chapter presents the background, research objectives, significance and scope of the study.

The second chapter reviews pertinent literature and discusses the theoretical and conceptual framework underpinning the study.

Chapter Three focuses on the research methodology, research design, data collection and analyses.

Analysis of results and a discussion of the findings are presented in chapter four.

The last chapter presents the research conclusions and makes recommendations for further research.

# CHAPTER TWO

# REVIEW OF THE LITERATURE

## 2.1 INTRODUCTION

Research done at HEIs contributes to the nationwide research output of a country. The performing group of people doing research at HEIs is academics (Nieuwoudt and Wilcocks, 2005:49). An academic is a member of a university or college's teaching or research staff who draws a salary (Wain, 1955:xv), in other words, an academic is an employee at a HEI.

As stated in Chapter One, this study deals with research output in CMA at Universities of Technology (UoTs) in South Africa, and Universities of Applied Science (UoAs) Germany. The history of the higher education system in both countries is explained with emphasis on the evolution of UoTs and UoAs in Germany as the development of the distinctive institutions affected research activity in both countries. Given that the evolution of both higher education systems are linked to political steering, the political background is explained in this chapter as well.

The fit of CMA in the education system is presented with the introduction of the CMA degree program structure and in terms of the qualifications as offered in both countries. This is followed by a discussion of the different requirements and procedures for academic staff recruitment and the current profile of academic staff regarding their qualifications. The theoretical framework underpinning this study is then discussed.

## 2.2 HIGHER EDUCATION IN SOUTH AFRICA

### 2.2.1 History

South Africa's higher education system was and is strongly associated with its policies as every government has a fundamental obligation to define clearly the purposes it expects higher education to achieve (Bitzer, 2009:7). This section therefore illuminates South Africa's political background and its impact on the history of its higher education system.

*2.2.1.1 Apartheid and education*

In 1948 apartheid was introduced in South Africa by the National Party under the leadership of Dr. D. F. Malan (Fiske and Ladd, 2006:96). The Dutch term 'Apartheid' which means 'separateness' (Oxford English Dictionary, 2011c) is a name given in South Africa to the segregation of the inhabitants of European descent from the non-European (Coloured or mixed, Bantu, Indian, etc.).

Apartheid also had a direct impact on education. Separate and unequal education for different races in South Africa was provided with the introduction of the so-called Bantu Education in 1955 (Arnold, 1981:201). The word Bantu means "in the Nguni group of languages, such as Zulu, Xhosa and Ndebele, people" (Nkabinde, 1997:5). The former South African government selected the term Bantu as an official term to refer to Blacks, thus, a phrase such as Bantu education refers to the type of education designed for Blacks (Nkabinde, 1997:5). Horrell (1968:5) explains that in terms of the Government's plan for South Africa, there was no place for the Bantu in the European community above the level of certain forms of labour.

With the introduction of the new constitution in 1984 (SA, 1984) and the division of the National Parliament into three chambers, namely: House of Assembly; House of Representatives; and the House of Delegates (Lötter, 1997:49), the education landscape was separated by racial lines. Craythorne (2006:3) explains that education for the Whites was the responsibility of the

House of Assembly, education for Coloureds that of the House of Representatives, and for Indians that of the House of Delegates. There was to be no Black representation in Parliament (Lötter, 1997:50) in this constitution. A direct consequence was that higher education institutions had to be designated as being for the exclusive use of one of the four race groups: Black, Coloured, Indian and White (Bunting, 2007:36). The landscape of higher education in South Africa at the beginning of 1985 was therefore as follows: 19 higher education institutions 'for the exclusive use of whites', two 'for the exclusive use of Coloureds', two 'for the exclusive use of Indians', and six as being 'for the exclusive use of Blacks' (Bunting, 2007:36).

With the first democratic elections in 1994 the apartheid era came to an end (Bawa and Mouton 2007:197) but more than two decades of apartheid policies left a higher education system that was complex and discriminatory (Gultig, 2000:40). To overcome the racial fragmentation of the educational system, and thus to reduce duplication between institutions closely located to one another, mergers in higher education were introduced in South Africa's higher education system (Goldman, 2011:38).

*2.2.1.2 Mergers in higher education*

A merger's meaning embraces the combination of historically disadvantaged institutions with historically advantaged institutions (Wyngaard and Kapp, 2004:186; *see also* Habib and Parekh, 2000; Hay and Fourie, 2002) or as Leslie and Mowatt (2006:123) state it is the fusion of two or more institutions that is 'the old institutions' into a single institution, called 'the new institution'. The boundary between a business oriented merger and an institutional merger lies within the motivation for the transformation. Institutional mergers were driven by socio-political transformation of civil society and its institutions and were therefore informed by political and ideological motives and not economic growth, institutional survival or sustainability (Goldman, 2011:36).

The higher education landscape at the stage before the first merger in 2003 consisted of 21 universities as follows: four English-speaking; six Afrikaans-

speaking; eight Black universities; one university for Coloureds only and one for Indians besides the universities 14 technikons existed, whereof seven were for Whites only, five for Africans, one for Couloreds and one for Indians. (Koen, 2003:1).

The first merger in 2003 was the one of KwaZulu-Natal's Technikons (Jayaram, 2003:85). He explains that these two institutions are namely the former White Natal Technikon (N Tech) and the former Indian ML Sultan Technikon (MLS Tech). He further states that the N Tech was a historically advantaged institution but in financial terms the weaker partner compared to the MLS Tech which was a historically disadvantaged institution. Prior to the merger, both technikons situated in Durban existed as separate entities within a few metres from each other, separated physically by only a fence (Jayaram, 2003:85). The DUT operates in Durban and Pietermaritzburg by running seven campuses, namely: Steve Biko, ML Sultan, City Campus, Ritson, Brickfield and the Midlands (Durban University of Technology, 2012).

KwaZulu-Natal (KZN) is also home of the Mangosuthu University of Technology (MUT) which acquired the former University of Zululand Extramural Campus and gained the status of a UoT in November 2007 (About Mangosuthu University of Technology, 2012). MUT is situated in Umlazi close to Durban.

In the Gauteng province, the former advantaged Vaal Triangle Technikon (VT Tech) took over the physical structure of Vista University (VU) to form the Vaal University of Technology (VUT) (History and State of VUT, 2012). This merger took place in 2004. The South African Technology Network (SATN) (Vaal University of Technology, 2012) states that the VUT, situated in Vanderbijlpark, currently has satellite campuses in Secunda, Kempton Park, Klerksdorp, Upington and Sebokeng Township.

The Cape Peninsula University of Technology (CPUT) came into being after the mergers of the former White Cape Technikon in Cape Town and the former Coloured Peninsula Technikon in Belville (History, 2012). CPUT is the

first, only and largest university of technology in the Western Cape with its campuses in Bellville, Cape Town, Granger Bay, Mowbray and Wellington (Cape Peninsula University of Technology, 2012).

The Free State accommodates the Central University of Technology (CUT) which came into being in 2004 after the Free State Technikon incorporated the Welkom Campus of the historically disadvantaged Vista University and is situated in Bloemfontein, Free State (CUT is always one step ahead, always Thinking Beyond…, 2012).

In Gauteng, after the merger of three Technikons, namely the White Pretoria Technikon; the Black North West Technikon; and the Black Northern Gauteng Technikon, the Tshwane University of Technology (TUT) came into being in 2004 (Tshwane University of Technology, 2012). The TUT with its campuses extend over four provinces as follows: Gauteng; Mpumalanga; Limpopo; and the North-West Province.

All in all, the South African higher education system now embraces six UoTs whereof the DUT and MUT are situated in KZN; the CUT in the Free State; CPUT in the Western Cape; and the VUT and the TUT in the Gauteng Province. The TUT also operates with campuses in Mpumalanga; Limpopo and the North-West Province and all of these UoTs were created from merged and unmerged technikons (CHE, 2010:4). As this study focuses on UoTs which form a part of the public higher education, the roles of all public higher education institutions are discussed in the next section.

*2.2.1.3 Roles of higher education institutions*

South Africa's universities focus on training in and the practice of science in the broad sense of the word (which includes all scholarly activities) including research and general vocational preparation (SA, 1988:23). UoTs serve three functions in the higher education system, namely to: deliver learning programmes; do research; and focus on technology from the viewpoint of various fields of study rather than a particular field of study (Du Pre,

2009b:15; Backhouse, 2009:3). Comprehensive universities came into being when a traditional university and a technikon merged, they offer technikon-type programmes as well as university-type programmes (Baijnath and Barnes, 2010:20). Before being designated as UoTs, these institutions were called Institutes of Technology to separate them from the universities.

*2.2.1.4 From Technikon to University of Technology*

The term technikon is derived from Greek and goes back to the masculine form of the Greek adjective 'technikos' of which the feminine form is 'technike' and the neutral is 'technikon' (Pittendrigh, 1988:194). Technikon is a noun which can be used for any matter or thing related to technique or technology as well as to art in any form (Pittendrigh, 1988:194). According to the Department of National Education (SA, 1988:22), a technikon is defined as a higher education institution whose main educational task is to provide education and training in order to supply the labour market with middle-level and high-level personnel who possess particular skills and technological and practical knowledge which ensure that they practice their occupations effectively and productively. It explains further the task of a technikon as follows: it concentrates on training in and practice of technology (including development) and vocational preparation for specific occupations.

Technikons were usually considered a second or third choice after universities and membership of international university associations was denied, as technikons were not known as degree-awarding institutions of higher education (CHE, 2010:7-8). Technikons were not meant to carry out research (Graham, 2002:60), thus they did not have a tradition of research as they provided vocationally based education and training (Singh, 2011:1191). This led to the change in designation of the technikons to universities of technology, to enable them to place themselves firmly in the minds of government, industry, parents and students as logical fist-choice institution of higher education (CHE, 2010:8). The designation from technikons to institutes of technology and finally to UoTs also brought changes and shift in

the emphasis on the research task of the newly introduced UoTs. In line with shift in designation from technikon to UoT the focus shifted from teaching to applied research, the development of research capacity, postgraduate qualifications and published research (Singh, 2011:1191; Du Pre, 2009b:73). This shift brought challenges for example in staffing UoTs, which is discussed in detail in section 2.2.2.3.

### 2.2.2 Present higher education landscape

After the mergers of various higher education institutions throughout South Africa the higher education landscape consists of 23 HEIs. Among these are: 11 universities, six comprehensive universities and six UoTs as of 18 February 2011, there were also 87 registered and 27 provisionally registered private higher education institutions (CHE, 2012a).

#### *2.2.2.1 Types of qualifications offered*

All HEIs offer programmes and aim to award qualifications. A qualification is the formal recognition of learning achievement by a HEI (SA, 2007:6) and is the validation of an individual's skills (Bergan, 2007:3).

South Africa's qualification types are attributed to certain so-called NQF levels which are descriptors that clearly indicate the level of knowledge required of a learner to successfully achieve the unit standard or qualification (NQF levels, 2011). Figure 2.1 (overleaf) shows the qualification types in higher education from NQF levels 5–10 as these levels embrace the higher education sector (NQF levels, 2011).

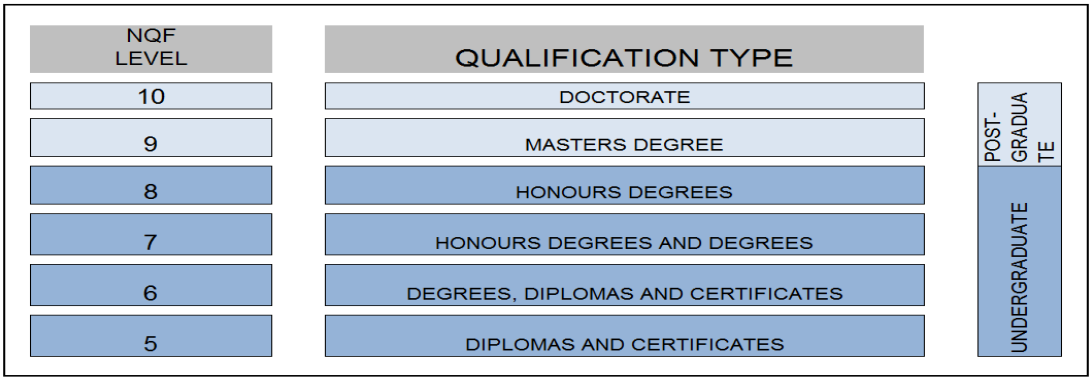


*Figure 2.1: Qualification types in higher education*

*(Source: NQF levels, 2011)*

The range from NQF levels 5-8 caters for undergraduate qualifications whereas the range from NQF levels 9-10 caters for postgraduate qualifications. South African undergraduate and postgraduate qualifications are offered in the fields of Business and Commerce, Science and Technology, and the Human and Social science (CHE, 2012a). CMA education which is part of the Business and Commerce field is only offered at UoTs in South Africa. Universities do not offer the same qualifications as UoTs. South African universities offer Bachelor of Commerce degrees, Master's of Commerce degrees and Doctor of Commerce degrees in the following disciplines: General Accounting; Accounting and Law; Financial Accounting; Accounting Sciences; Management Accounting and Finance. Comprehensive universities offer Bachelor of Commerce degrees and Master's of Commerce degrees in the fields of Accountancy, they provide National Certificates, National Diplomas, Bachelor of Technology and Master's of Technology in CMA.

A study of South Africa's tertiary institutions' websites revealed that the following (*see* Figure 2.2 overleaf) undergraduate and postgraduate qualifications in CMA can be obtained in South Africa.

| Qualification Title | | u = undergradute<br>p = postgraduate |
|---|---|---|
| Certificate: | Commerce: Cost and Management Accounting | u |
| Diploma: | Commerce: Cost and Management Accounting | u |
| National Higher Certificate: | Cost and Management Accounting | u |
| Bachelor of Commerce: | Cost and Management Accounting | u |
| Higher Diploma Commerce: | Cost and Management Accounting | u |
| National Diploma: | Cost and Management Accounting | u |
| Bachelor of Technology: | Cost and Management Accounting | p |
| Professional Qualification: | Chartered Management Accountant | p |
| Master of Technology: | Cost and Management Accounting | p |
| Doctor of Technology: | Cost and Management Accounting | p |

*Figure 2.2: Undergraduate and Postgraduate qualifications in CMA in SA*

*(Source: Faculty of Management Sciences – VUT, 2012; Faculty of Accounting and Informatics – DUT, 2012; Faculty of Business – CPUT, 2012; Faculty of Management Science – MUT, 2012; School for Accounting – CUT, 2012; Department of Accounting – TUT, 2012)*

*2.2.2.2 Postgraduate Cost and Management Accounting education*

Out of the six UoTs in South Africa, four offer a Master of Technology (M-Tech) in Cost and Management Accounting, namely DUT, CPUT, TUT and VUT. Only the VUT offers a Doctor of Technology (D-Tech) in Cost and Management Accounting. All programmes are fully research based which means the programmes consist of the completion of a full dissertation. Each candidate proceeds under the guidance of a supervising member of staff. Besides the UoTs, only one comprehensive university, namely the Nelson Mandela Metropolitan University, offers an M-Tech in CMA also by dissertation only.

All offered CMA programmes may be undertaken either full-time or part-time. The duration of the programmes differs from one institution to the other, it ranges from a minimum of one year to a maximum of four years for a master's, and a minimum of one year to a maximum of five years for a doctorate.

In South Africa the biggest demand for qualifications is that of the Chartered Accountant as there is a shortage of 22 000 accountants to fill currently vacant posts (Odendaal and Joubert, 2011:23). Furthermore there is a demand for people with postgraduate qualifications in CMA as they are sought after by enterprises in commerce and industry, in the banking sector, insurance and in the public service (Career Opportunities, 2012).

Singh (2011:1191) found that there is a huge demand for postgraduate qualifications at UoTs but many members of staff are not suitably qualified to supervise postgraduate students. The lack of higher qualifications in the UoT sector is a consequence of the former technikons' focus on skills, hands-on-training or practical work, e.g. jewellery design, beauty therapy, fashion, to name a few, and did not necessarily focus their attention on further qualifications (Singh, 2011:1191). Chetty (2003:10) concurs that the tradition of research in many technikons is limited and the majority of the lecturers need to re-tool themselves as academics and transcend the role of teachers as their disciplinary base is generally limited to a subject or two as opposed to a core social science or science discipline.

*2.2.2.3 Staffing higher education*

Singh (2011:1191) pointed out that the Department of Higher Education requires academic staff to upgrade their qualifications and to attain a minimum of a master's degree by 2010 (2012 in the case of universities of technology). Recruitment policies of HEIs seem to echo this call as they require a minimum of a master's qualification for the employee to do research and teach. Badat (2011:1) cautions that the real implementation of this recruitment policy is likely to become a challenge as South African universities face a multi-dimensional crisis in attracting, appointing, and retaining academic staff. This is a direct consequence of two decades of racial segregation and separated education for different races as the higher education sector was functionally differentiated in order to serve the development and reproduction of the apartheid order (Naidoo, 1998:371).

Perumal (2010:41) states that formal disadvantaged institutions did not offer research and postgraduate programs because government set up these institutions to train Black people who would be useful to the apartheid state. Thus, eighteen years after the apartheid era South African academics are still predominantly male and white (CHE, 2004:62). Besides this quantitative issue in staffing higher education, qualitative issues arise with regard to academics' qualifications.

Of the 41 383 academic staff employed in the public institutions in 2007, 6 806 had doctoral degrees (16%) and 14 033 had master's degrees (34%). This means that 66% of academic staff were qualified at levels lower than master's. At UoTs the figure was even lower as in 2009, 73% of academic staff were qualified lower than a master's (CHE, 2009a:73). Although universities show a slightly better position with 60% of academic staff qualified lower than a master's there is still a huge potential and need for academics to upgrade their qualifications as research capacity development has become a key focus in reconfigured institutions (Balfour and Lenta, 2009:8).

Qualification levels of academic staff play a significant role with regard to research output as quality of academic staff is critical to the success of the research missions at universities (CHE, 2009a:73) and only some 10% of the total academic staff in public higher education are rated researchers (CHE, 2009a:57). According to the National Research Foundation (NRF) (Evaluation and Rating, 2012) a rated researcher is an evaluated employee of a higher education institution, museum, or any NRF recognised institution. The evaluation is based on the employees' quality of research outputs in the recent past and is undertaken by national and international peers/reviewers who are requested to critically scrutinise the completed research.

### 2.2.3 Higher education research

Due to the apartheid regime's higher education institutions' policies and the absence of a generally accepted basic research framework for higher

education, South Africa's higher education has not had a strong tradition of institutional or systematic research (Strydom and Fourie, 1999:156). Things changed by the end of the apartheid legacy as the framework for transformation was introduced and emphasized that the production, advancement and dissemination of knowledge and the development of high level human resources are core functions of the higher education system (SA, 1996).

*2.2.3.1 Funding higher education research*

Before the introduction of the New Funding Framework in 2004 (SA, 2004) which made significant changes to the funding of research (CHE, 2009b:48), funding was allocated according to the so-called Post-Secondary Education formula (SAPSE) (De Villiers and Steyn, 2009:45). HEIs received a subsidy for every student enrolled (input driven) in Natural Sciences (NS) and Human Sciences (HS) respectively as well as the number of successful students in NS and HS (output driven) (De Villiers and Steyn, 2009:45). They explain that additional funding was granted for annual growth in students in these two fields of study.

The New Funding Framework introduced in 2004 reflects South Africa's movement towards a stronger research culture (SA, 2004) and in order to promote research activities at HEIs there was a shift towards output criteria (Geertsema and van Niekerk, 2009:912). Within this framework the national budget consisted of earmarked grants and block grants (Essack, Barnes, Jackson, Majozi, McInerney, Mtshali, Naidoo, Oosthuizen and Suleman, 2009:276). The earmarked grants encompass: the National Student Financial Aid Scheme (NSFAS); teaching; research and community development; institutional restructuring (including mergers and recapitalization of institutions); and the higher education quality assurance framework, while the bock grants consist of teaching output grants, teaching input grants, research output grants and institutional factor grants (SA, 2003). One component of the block grants is the research output grant which is based on the output of

research publications and research master's and doctorates (Walwyn, 2008:715).

Research publications are counted following a set of guidelines issued by the DoHET which define various forms of research output (journal articles, conference proceedings and books) and assign to each output an equivalent value or weighting (SA, 2003). The total value for research publications is then the sum of the individual components. Only articles covering original research and published in the Department of Education's approved list of journals can be counted and each article counts for a single unit if all the authors are affiliated to a single institution. Journal articles attract funding if the journal appears on an accredited list. This includes journals that appear in the ISI indexes, the International Bibliography of Social Sciences (IBSS) or on a list of approved South African journals (CHE, 2009b:49). Books can count up to five units while conference proceedings count for one half of a unit (Walwyn, 2008:715; De Villiers and Steyn, 2009:62).

Although many universities have increased the monetary amounts that are passed on to individual authors as reward for publishing in accredited journals (Bawa and Mouton, 2007:206), the distribution of research output according to institutions varies greatly. One consequence of this kind of research funding is the impact on an institutions' research output in the form of articles in scientific journals. Another consequence of an output orientated funding like this is the creation of pressure to produce research outputs as public funds for higher education decline and competitive allocation of research funding increases (Madue, 2008:129) requiring staff to adapt to the new order (Singh, 2011:1191).

*2.2.3.2 Research output by higher education institutions*

The change in funding policies seemed to fall on fertile ground as there was an overall growth rate of 69% in South Africa's HEIs in terms of research output in 2009 since the introduction of the New Funding Framework in 2004 (CHE, 2009b:47).

De Villiers and Steyn (2009:56) explain that most research was conducted by traditional universities in the following order: University of Cape Town, University of Pretoria, University of KwaZulu-Natal, Stellenbosch University, and University of the Witwatersrand. Together they produced more than 60% of all research and post-graduate output. Only 3.8% of the total research output was produced by eight other HEIs, namely: Walter Sisulu University, University of Venda, University of Limpopo, University of Zululand and DUT (Govender, 2011:12). Singh (2011:1191) explains that UoTs lag behind traditional universities in terms of publications in accredited peer-reviewed or subsidy generating journals as there was a lack of emphasis on postgraduate qualifications and published research in the pre-merged technikons. Chetty (2003:9) concurs that many of the previously disadvantaged technikons have yet to transcend their primary mission of teaching and shift towards scholarly productivity and emphasis on research and publications.

A study of the UoTs' annual research reports and other reports which provide relevant information on research output revealed the following regarding research outputs in 2010. Among the six South African UoTs, TUT was leading the field of research output in terms of journal articles published in accredited journals with 192.87 journal articles. CPUT followed TUT with 129.84 journal publications. VUT, DUT and CUT presented an almost equal publication output in 2010 with 46.91 articles published by VUT, 46.3 articles published by DUT, and 45 articles published by CUT. MUT lagged behind with only four journal articles published in 2010 (Annual Research Report 2010 – VUT, 2012; Annual Research Report 2010 – CPUT; Annual Report 2010 – CUT; Research and Innovation Fusion 2010 – TUT; Govender, 2011:12).

Since Departments of Accounting are part of the HEIs set-up, they are also directly affected by the above-mentioned shift towards scholarly productivity, therefore, every Department of Accounting should be equally commited to the aspiration to practice scholarly activity competitively at national level and to enjoy international recognition (Van der Schyf, 2008:2). The following

sections discuss CMA/Accounting research and endeavours of UoTs to promote their research activity.

### 2.2.4 Cost and Management Accounting

The term Cost and Management Accounting is composed of Cost Accounting and Management Accounting. According to Drury (2004:20) Cost Accounting is concerned with cost accumulation for inventory valuation, whereas Management Accounting relates to the provision of appropriate information for decision making, planning, control and performance evaluation.

#### *2.2.4.1 Research output in Cost and Management Accounting*

Due to the lack of literature in the field of South Africa's CMA research output, this part of the study deals with research output in Accounting in general as CMA can be assigned to the broad field of Accounting.

Chan, Chen and Cheng (2005:49) ranked the research activities in the field of Accounting at selected Asia-Pacific universities in the following countries: Australia, Hong Kong, Singapore, Taiwan, New Zealand, South Korea, Japan, China, South Africa, Malaysia, Indonesia, Thailand, Macau and Bangladesh. They found that Australian academics produced the greatest quantity of work. South Africa was placed firmly in the bottom half of the table out of 14 countries. West (2006:128) explains that South Africa's research output in the field of Accounting is significantly below that of Australia, New Zealand, and Singapore – countries with which the South African professional Accounting qualification is comparable.

According to West (2006:128), the research outputs of Accounting academics do not match the professional achievements and recognition of South African Chartered Accountants and that the contribution of South African academics to the global Accounting literature is very limited. He states further that there are opportunities for South African Accounting academics to publish internationally, but Gray and McKernan (2000:10) explain that opportunities cannot be taken easily as a research culture has

yet to develop with Accounting academics and embed itself. In addition, the UoTs reflect the national situation in Accounting research as the latest research output reports show that there is a shortage of research publications in the field of Cost and Management Accounting. According to van der Shyf (2008:3), although two Accounting research journals have been established in the last 20 years, namely the *South African Journal of Accounting Research (SAJAR)* in 1987, previously called *De Ratione* (http://www.sajar.co.za), and *Meditari* (http://www.meditari.org.za) in 1993, the research outputs published in these journals were not of an international standard.

The Faculty of Management Sciences at VUT of which CMA is a part, produced the highest number of publications at the institution but none of these articles were published in the field of CMA (Annual Research Report 2010 - VUT, 2012:41-44). CPUT's Faculty of Business which includes CMA shows the same pattern, out of 35 journal articles published, none of them was published in the field of CMA (Annual Research Report 2010 –CPUT, 2012:51-52). The Faculty of Accounting and Informatics at DUT published five scholarly articles in 2010, but none of these were in the field of CMA (Research Publications 2010 – DUT, 2012:58). One possible reason for the shortage of research output in CMA is staff qualifications.

West (2006:124) compared South Africa's Accounting faculties with overseas Accounting faculties. He found that only the University of Pretoria came close to the overseas institutions in terms of the percentage of members of staff who hold higher degrees. UNISA placed second (with 36% of staff with a master's) after the University of Pretoria where only 15% of staff held a doctorate compared to the weakest overseas institutions which had a share of 41% doctorates and 71% master's among their staff.

In order to encourage staff to get qualified and to maximise income *via* the new Funding Framework (SA, 2004) UoTs try to promote research through different incentives for their staff.

*2.2.4.2 Promoting research at universities of technology*

The CUT introduced research grants or bursaries in the following categories: full-time postgraduate students; part-time postgraduate students; staff studying towards a postgraduate qualification at the CUT; postdoctoral fellows; research fellows/associates; project costs; top-up funding for external research projects; seed money for a research activity to be developed into a niche area; research assistance related to the development of an activity into a niche area; and the development of externally funded projects (Research and Development at the CUT 2009, 2012:16-17).

The CPUT offers so-called University Research Funding (URF) to assist in stimulating and promoting the research culture within the institution and to provide research project running costs for staff members who wish to upgrade their qualifications (University Research Funding, 2012). Furthermore, there is a programme in place called the Women in Research Association (WIRA), which aims to drive female-related research capacity development support initiatives at CPUT (Women in Research Association, 2012).

Research and postgraduate support at DUT is provided by research capacity building workshops such as research skill building workshops or workshops on how to write an article (Research capacity development, 2012). Scholarships are awarded to full time doctoral and master's students (Scholarships and grants, 2012).

At the MUT it seems like research capacity development is anchored in the institution's vision, mission and strategies but no detailed information about support is given (Research, 2012; About Mangosuthu University of Technology, 2012).

TUT offers various funding opportunities for staff and postgraduate students, and statistical, methodological and data-capturing support; questionnaire or data capture design; statistical analysis, statistical reporting and statistical

review of reports and manuscripts; data capturing into various forms (databases); and help with hypotheses, power analysis, sample size justification and statistics coaching (Research Support, 2012).

Various research capacity development programmes are in place at VUT including research skill building workshops, funding opportunities for staff and postgraduate students, promoting women in research, and a mentorship programme (Research Capacity Development Programmes, 2012).

Having discussed higher education in South Africa, the following section focuses on higher education in Germany.

## 2.3 HIGHER EDUCATION IN GERMANY

### 2.3.1 History

#### *2.3.1.1 The Humboldtian University*

Germany's higher education is often named in one sentence with Wilhelm von Humboldts's neo-humanistic or idealistic concept of the university (Wolter, 2004:75) as Humboldt's ideas were practiced and developed in German universities in the 19th century (Dysthe and Webler, 2010:23).

Humboldt's concept of *Bildung* has no counterpart in English (and therefore the researcher chose to use the German word). *Bildung* is an activity of the individual whereas education means intentional external processes designed to influence the person (Dysthe and Webler, 2010:23). With the foundation of the University in Berlin in 1809, Humboldt formulated his neo-humanistic ideal which includes the character-building nature of research (Ash, 2006:245-246).

According to the Humboldtian idea, research was to be the main function of the university, loosely tied to teaching and to gain encyclopaedic knowledge (Wolter, 2004:75). The ideal of gaining encyclopaedic knowledge became impossible after the knowledge explosion during the 19th century. Instead of the acquisition of knowledge, the scientific way of dealing with arts and

sciences was seen as instrumental in developing students' personalities. The students' studies should lead to the formation of an independent person who had developed internal control, initiative, a system of attitudes and values and a sense of being of service to the community and loyal to the state. This would take place through the medium of *Wissenschaft (science)*, that is, research (Dysthe and Webler, 2010:250). Hence, the German university of the second half of the 19th century was most successful in preparing people for research and industrial use (Herrmann, 2005:8).

*2.3.1.2 Origins and development of universities of applied sciences*

In the 1960s dramatic increases in student numbers (Ash, 2006:254; Onestini and Scheck, 2004:151) made it impossible to educate students according to Humboldtian principles (Dysthe and Webler, 2010:258). On this account about 30 new universities and also about 100 UoAs were founded in this period (Wolter, 2004:76). The latter was supposed to unburden the research-oriented universities from the brunch of the student mountain (Kehm, Michelsen and Vabo, 2010:230). UoAs were typically occupation-related, requiring shorter periods of study (Wolter, 2004:79) as opposed to universities, which focused on preparing students for self-study (Dysthe and Webler, 2010:258) according to the Humboldtian idea.

With their roots in the areas of former engineering schools, academies and higher technical schools for design, social work and economics, UoAs were never meant to carry out research (Kehm *et al.*, 2010:230). UoAs were formally established as a new higher education institution on the 31 October 1968 with the "Agreement between Länder of the Federal Republic of Germany on standardisation in the area of Universities of Applied Sciences" (Federal Republic of Germany [FRG], 2004:6). Through the foundation of UoAs, a non-university sector was introduced alongside the university sector and other institutions with equal status (such as Colleges of Arts) (Wolter, 2004:79). The Bologna process (discussed in 2.3.1.3) had a direct impact on UoAs and their types of qualifications offered.

The development of a research mission at UoAs has been interpreted differently by various authors. Burgess (1972:105) and Neave (1979:134-159) state that the development of research in UoAs was driven by a so-called academic drift which was an attempt by UoAs to become more similar to universities, thus pushing towards a unitary higher education system. Heggen, Karseth and Kyvik (2010:47) disagree with the above and state that the development of research in UoAs was driven by the need for improving professional education and professional practice in occupations for which universities do not train people. Jongbloed (2010:104) counters that the need for strengthening the role of UoAs as regional knowledge providers was a reason for the development of research in UoAs. Nowadays research at UoAs has become integrated into institutional strategies, and UoAs are explicitly recognised as research actors at a national level (Lepori and Kyvik, 2012:301).

*2.3.1.3 The Bologna process*

According to Wolter (2004:9) the Bologna process is the harmonization of study structures in the member states of the European Union. Its aim was to establish a European higher education system compatible with the 'Anglo-Saxon model' which comprised bachelor's and master's degrees and a common European higher education architecture by 2010 and to ensure more effective mobility of students, researchers and teachers within the European Union (Ash, 2006:259).

Before the Bologna process UoAs only awarded diplomas (FRG, 2003:15) but things changed with the Bologna process which pushed UoAs to the introduction of Bachelor's and Master's degrees according to the so-called two-cycle model following the popular American-British system (Kyvik and Lepori, 2010:298; FRG, 2003:16). The introduction of master's degrees at UoAs required teachers with research experience (discussed in detail in section 2.4.2.4) (Lepori and Kyvik, 2010:298). Kehm *et al.* (2010:235) describe the introduction of Bachelor's and Master's structure in Germany as

too rigid since the former four years of study content was simply squeezed into a three year Bachelor's course. Dysthe and Webler (2010:263) conclude that the Bologna process in its first phase was very much oriented towards alignment of European higher education and towards competitiveness, higher quality, and employability. Szolar (2011:94-95) counters that the Bologna process was the answer to the challenges created by the transition to mass higher education.

The objectives of the Bologna process according to Szolár (2011:82) were to: adopt a system of easily readable and comparable degrees; implement a system based essentially on two main cycles; establish a system of credits; support the mobility of students, teachers and researchers; promote European co-operation in quality assurance; promote the European dimension in higher education (in terms of curricular development and inter-institutional cooperation; and increase the international competitiveness of the European system of higher education.

### 2.3.2 Present higher education landscape

*2.3.2.1The role of higher education institutions*

According to the German Federal Ministry of Education and Research (Higher Education, 2009) Germany has 394 institutions of higher education as follows: 104 universities, 6 Colleges of Education, 14 Colleges of Theology, 51 Colleges of Art, 189 Universities of Applied Sciences and 30 Colleges of Public Administration. In general, universities and UoAs are financed and operated by the 16 German states (Liefner, Ludwig and Thomas, 2004:25).

According to Liefner *et al.* (2004:24), universities carry out research and provide higher education whereas UoAs concentrate mainly on higher education. Studying at university usually takes longer than studying at a UoA, moreover, applied science establishments do not confer Doctor's degrees.

The right to award doctorates is still reserved for universities only (Alesi, Bürger, Kehm, and Teichler, 2005:31).

The Federal Ministry of Education and Research in Germany differentiates the tasks of German higher education institution and those which apply specifically to UoAs. UoAs and universities must fulfil the following tasks: cultivate and develop the arts and sciences by means of research, teach; prepare students for occupations that require application of scientific findings and methods or artistic skills; promote international co-operation and especially European co-operation in the higher education sector and; promote exchanges between German and foreign higher education institutions; and promote transfer of knowledge and technology (FRG, 2004:8).

What differentiates UoAs from universities are special educational tasks only applicable to the UoAs, these are: a strong orientation of the study programmes to the requirements of the workplace; and the offering of application-oriented research and development (FRG, 2004:8).

*2.3.2.2 Qualifications offered*

The Centre for Higher education Policy and Studies (CHEPS, 2003:16) explains that the design of the courses of study and the organisation of teaching and studying at UoAs are specially geared to practical application and professional needs and the semesters spent outside the institutions to gain practical experience (*Praxissemester*) are a vital feature. The so-called *Praxissemester* intends to combine academic studies with on-the-job training or employment (CHEPS, 2003:16). Kennedy (1996:23) adds that a Praxissemester is a 20-week internship or practical training intending to give students the opportunity to apply their newly–acquired theoretical knowledge to practical problems in particular profession. The teaching staff and course content at UoAs are linked with applied research and development projects which are characteristic of this type of institution (FRG, 2004:13).

*2.3.2.3 Cost and Management Accounting in universities of applied sciences*

There is no German counterpart at UoAs or universities for the South African CMA qualification. According to Ahrens and Chapman (1999:42), in Germany those who work as management accountants are known as controllers. The word 'controller' comes originally from the American controller or comptroller, but has now been absorbed into the German language as Controller and is used with a German pronunciation. Ahrens and Chapman (1999:42) add that the majority of controllers in Germany have completed an undergraduate degree course in Business Economics or Accounting and that Controllers with non-relevant degrees are virtually unheard of.

Undergraduate and postgraduate qualifications offered by UoAs in the field of Business Economics and Accounting in Germany are as follows: Bachelor's degrees in the field of International Business; Business Economics, Controlling; Finance and Auditing; Business Economics and Management; Business Administration; Business Administration; Business Administration and IT; and Business Administration with Informatics (Studieren in Deutschland: Die Fachsuche [Study in Germany: Subject search], 2012). Postgraduate master's degrees are offered in: Controlling, Accounting and Finance, Accounting, Auditing and Taxation; Controlling and Finance, Controlling, Finance and Accounting; Business Administration; Finance, Accounting, Cooperative Law and Taxation; and Management. Universities also offer Bachelor's and Master's degrees in Business Economics and Accounting.

*2.3.2.4 Postgraduate Accounting education*

The master's qualifications mentioned above are offered by six UoAs in Germany (Degree Programmes, 2011). A review of the six UoAs' websites revealed the following about their master's: the programmes are full time and coursework-based with a minimum duration of one and a half year up to a maximum duration of two years. All of these programmes include the writing of a dissertation in the last six months (Studieninformation

Masterstudiengang Finance and Accounting [Student information for master's degree in Finance and Accounting], 2012; Modulhandbuch Master-Studiengang Accounting, Auditing and Taxation [Module handbook for master's degree in Accounting, Auditing and Taxation], 2012; Modulübersicht [Overview modules], 2012). In order to offer these qualifications suitably qualified academic staff is required.

*2.3.2.5 Academic staff*

Academics in Germany are not self-employed professionals but work as members of staff for public or private institutions that are governed by legal rules, and in the public sector, academics commonly have the legal status of civil servants, like the German *Beamte* (civil servant) (Enders, 2001:6).

Enders (2001:10) explains that the pre-requisites for appointment as professor differs with the type of institution. As a rule, university-level institutions reward experience: in university teaching; a doctoral degree, which indicates competence in research; and at least five years of postdoctoral research. He states that at UoAs at least three of the five years in postdoctoral professional work have to be completed outside academia. Professors are usually appointed by the Ministry responsible for Science in the particular federal state with limited or unlimited tenure, though they can also be taken on as salaried employees (CHEPS, 2003:24). Other full time staff employed at German HEIs are lecturers and assistants (*Dozenten und Assisstenten*) and scientific staff (*wissenschaftliche Mitarbeiter*). Lecturers and assistants are university teachers other than professors and junior employees aiming to become a professor (Bildung und Kultur 2010 [Education and culture 2010], 2012:5). Scientific staff work for faculties and departments and fulfil scientific services as well as lecturing (*wissenschaftliche Dienstleistungen)* (Bildung und Kultur 2010 [Education and culture 2010], 2012:5).

According to the Federal Ministry of Education and Research (Bildung und Forschung in Zahlen 2011 [Education and research in figures 2011], 2012)

the tertiary education sector employed 323 953 academic staff, of their number, 97 199 were employed at German UoAs. Of the 97 199 employees, 25 889 were full time academic of which 62.26% were at professorial level, 2% were lecturers and assistants; and 35% were scientific staff (Bildung und Kultur 2010 [Education and culture 2010], 2012:97). On basis of the appointment policies of German UoAs it can be assumed that the 62.62% professors had a doctorate (Bildung und Kultur 2010 [Education and culture 2010], 2012:97). Women only count for 8% of all academics at UoAs in Germany (Schöneberg, 2009). Schöneberg (2009) explains that this underrepresentation of women is a consequence of the dominating field of Engineering taught at German UoAs.

### 2.3.3 Higher education research

Germany's higher education system is the third main area after industry and government where research and development is performed (FRG, 2010:42). Universities, colleges and UoAs carry out research. While university research is characterised by a broad subject matter and methodology, at UoAs the focus is more on applied research, another main task of the universities is to train young scientists (FRG, 2010:20).

Baker and Lenhardt (2008:51) express consideration about internationally competitive higher education research as the German government only spends one-sixth of the entire research budget on higher education. They add that the German higher education sector is in crisis as there is barely one season where there is no public call for the creation of a German 'Harvard or Stanford' in order to keep pace with research and technology transfer in other wealthy nations' higher education system. To counter this crisis, the German government is attempting to reform the funding of scientific research into a more competitive and university-based system modelled after American National Science Foundation procedures (Baker and Lenhardt, 2008:59).

*2.3.3.1 Funding higher education research*

In contrast to South Africa, there are no special research funding policies in Germany (FRG, 2010:22; Lepori and Kyvik, 2010:304). The Ministry of Education and Research further explains that both central and local government have the opportunity to fund German research in their respective areas of responsibility. Both central and local government act jointly in accordance with Article 91b of the Basic Law for the Federal Republic of Germany (Grundgesetz) in funding institutions and scientific research projects of national importance (FRG, 2010:22).

The German government acknowledges that a high quality education system opens up advancement opportunities for everyone and that good initial and further training opportunities are the basic requirements for research and innovation (FRG, 2010:15). The heads of central and local government therefore decided in the "Advancement through Education" qualification initiative for Germany, agreed on 22 October 2008 that overall social investment in education and research should be increased to 10% of GDP by 2015 (FRG, 2010:15). Lepori and Kyvik (2010:304) state that specific funding programmes of the Federal Ministry for Education and Research play a significant role in funding research at UoAs. The programmes currently in place are namely: The FHprofUnt; ProfilNT; and SILQUA-FH.

The Ministry for Education and Research states that the FHprofUnt funds research co-operation between UoAs and enterprises with the aim to enhance applied research in co-operation with small and medium sized enterprises which do not have their own research and development resources and to provide students and research staff with relevant research experience (FHprofUnt - Forschung an Fachhochschulen mit Unternehmen [FHprofUnt – Research at UoAs in co-operation with enterprises], 2012).

The ProfilNT programme (Förderlinie ProfilNT [Funding ProfilNT], 2012) gives UoAs the opportunity to participate in government driven research projects in different research fields. If a UoA participated successfully in the

government project it can also qualify to be funded for an own research project.

Due to the aging society in Germany the SILQUA-FH (Soziale Innovationen für Lebensqualität im Alter [Social innovations for life quality of the elderly], 2012) aims to initiate research concerning life quality for old people and maintaining independence at a high age.

Industry is an important player in the German research landscape. More than two thirds of annual funding invested in research in Germany comes from the private sector. These funds are spent both on companys' own research as well as on joint projects with partners from Science such as UoAs (FRG, 2010:21). The research conducted in this sector is very application-oriented in nature and is aimed directly at utilisable results, basic research plays a minor role in this sector (FRG, 2010:21).

*2.3.3.2 Research output by higher education institutions*

According to the report of the Federal Ministry of Education and Research (FRG, 2010:42) it can be assumed that a researcher is an academic. In 2007 there were 280 000 full-time researchers employed by HEIs in Germany (FRG, 2010:42). Although the prime interest of 71.6% of German academics is research and German academics are the best performing publishers in the European Union with 0.6 articles per academic and year, the research output and mission differs at universities and UoAs (Germany, 2012). Lepori and Kyvik (2010:300) state that UoAs in Germany only account for 4.1% of the total research expenditure in the public higher education sector which indicates a low contribution to higher education research. Furthermore they state that UoAs face challenges to develop research in a context where universities and public research institutes have long established research traditions and that there is a lack of information on their research activity.

### 2.3.4 Cost and Management Accounting

*2.3.4.1 Research in Cost and Management Accounting*

Wagenhofer (2006:2) states that there are a lot of leading academic journals in Business Administration in Germany which publish research in all fields including Management Accounting but since books play a more important role than in many other countries, publishing findings of dissertations in journals is still the exception. This statement concurs with the findings of Macharzina, Wolf and Rohn (2004:337) who tried to evaluate quantitative German research output in Business Administration. They found that no German university could fulfill the criterion of a top research institution because of a significant inhomogeneity of the performance among their members. They also ranked the institutions according to their amount of publications in selected journals. Not even one UoA was listed among the 101 higher education institutions in their investigation (Macharzina *et al*., 2004:350-352).

A review of the research output in Controlling of six UoAs in Germany reflect Wagenhofer (2006) and Macharzina *et al.*'s (2004) findings as the Berlin School of Economics and Law published 10 books in 2011 but no journal articles (Veröffentlichungen – Berlin School of Economics and Law [Publications – Berlin School of Economics and Law], 2012). Two of these books were assigned to the field of Accounting. The Nurtingen-Geislingen University published 39 scholarly works in 2010 of which 16 were journal articles but none of the journal articles were published in the field of Controlling (Veröffentlichungen – Nurtingen-Geislingen University [Publications – Nurtingen Geislingen University], 2012). Ludwigshafen University of Applied Sciences published 58 scholarly works of which 14 were journal articles but none of them in the field of Controlling (Forschungsbericht [Research report], 2009:54-58). The Faculty of Economics at the Munster University of Applied Sciences published six research publications in 2010 of which three were published in journals, only

one of which was in the field of Controlling (Anwendungsorientierte Forschung [Applied research], 2012). The Bochum University of Applied Science and the Erfurt University of Applied Sciences do not provide information on their research publications.

*2.3.4.2 Promoting research at universities of applied sciences*

The Münster UoA provides various support possibilities for their researchers in order to strengthen research at their institution (Fachhochschule Münster stärkt die Forschung [Münster University of Applied Sciences enhances research], 2012). It is stated on their website (Fachhochschule Münster stärkt die Forschung [Münster University of Applied Sciences enhances research], 2012) that research publications, patents, presentations at conferences, and participation in exhibitions will be financially awarded. The money to reward the above mentioned efforts comes from external funding by private, non-private, profit and non-profit institutions as well as from industry. They also offer staff a reduction in their teaching workload in order to participate in the institutions research activities. An annual meeting of recently appointed professors is in place in order to promote linkages between the different faculties and to support each other in their research activities. Like Berlin School of Economics and Law research at the Münster UoA is organised in different research institutes owned by the Münster UoA.

The Berlin School of Economics and Law state that intensive and diverse research is the mark of their institution (Forschungsprofil [Research profile], 2012). Various research institutes are designated to certain fields of research where researchers at the UoA can get actively involved in research were founded (Forschungseinrichtungen [Research institutes], 2012). The institute also supports research activities by providing researchers with a list of all public, private, national and international organizations promoting research with particular relevance to their institution (Fördermöglichkeiten [Funding possibilities], 2012). They also provide contact details of service and counselling centers for researchers (*Service –und Beratungsstellen*).

Similar to the Berlin School of Economics and Law, the Bochum UoA provides a list to staff with all the different funding organizations relevant to the Bochum UoA (Förderinformation [Funding information], 2012). Research is conducted in three research centres, namely, in the fields of Business, Construction and Engineering through co-operations with regional enterprises and institutions with demand for innovation in form of projects or long-term co-operations (Forschung und Transfer: Aktivitäten [Research and technology transfer: Activities], 2012).

Research at the Nurtingen-Geislingen University is also organised in different research instiutes and centres. Priorities in research lie within Environment and Planning; Animal Welfare (*artgerechte Tierhaltung*); Vegetable Production; and Economics (Forschung – Wissen verfügbar machen [Research – making knowledge useful], 2012). Nothing is stated on their website about promoting research at this insitution.

The Ludwigshafen UoA organises support in the so-called *Forschungsreferat (Department of Research).* The *Forschungsrefererat* is a central contact location for students, enterprises and researchers of the institution to get relevant information on research activities, financial support, help with applications to get funding for a research project, information on participating in research activities and how to conduct good scientific work (Services, 2012).

Like the Ludwigshafen UoA, the Erfurt UoA organises support in a *Forschungreferat (Department of Research).* The *Forschungsreferat* provides researchers with information on funding possibilites, provides support with funding applications, and helps researchers to get in contact with other researchers, other research institutions or other UoAs (Referat für Forschung, Wissens- und Technologietransfer [Department for Research, Knowledge and Technology transfer], 2012).

The reviewed literature illuminated the education systems in both countries. As this study focused on research in CMA at UoAs in Germany and at UoTs in South Africa, these institutions, their history, programmes offered in CMA and staff profile were elucidated. An overview of the research activities in CMA in both countries were presented as well. The following section deals with the theoretical framework underpinning this study.

## 2.4 THEORETICAL FRAMEWORK

HEIs focus on the functions of teaching and/or research that prepare individuals to take up a variety of roles in society (Raju, 2004:1), thus, HEIs build an academic's environment for teaching and/or research activities as an environment describes a particular set of surroundings or conditions in which someone interacts (OED, 2012).

In order to enable an academic to do research not only is an appropriate environment needed but the individual's ability to conduct research and attitude toward research plays a crucial role as well. According to Fishbein and Ajzen (1975:238) an attitude is a function of a person's beliefs about an object and the evaluative responses. In an attempt to explain the connection between environment, individual, and behaviour this section presents the theoretical framework of this study.

Sekaran and Bougie (2009:69) explain that a theoretical framework represents the researcher's beliefs on how certain phenomena (or variables or concepts) are related to each other (a model) and an explanation of why the research believes that these variables are associated with each other (a theory). The theoretical framework underpinning this study was the Social Cognitive Theory (SCT) and the Self-Efficacy Theory (SET) as this study was concerned with the role of personal factors and environmental influences on individual behaviour.

### 2.4.1 Social Cognitive Theory (SCT)

Before the development of the Social Cognitive Theory in 1986 (Bandura, 1986), theories explained psychosocial functioning in terms of human behaviour as one-sided determinism which means that behaviour is depicted as being shaped and controlled either by environmental influences or by internal dispositions (Wood and Bandura, 1989:361).

Bandura in his SCT emphasized that cognition plays a critical role in people's capability to construct reality, self-regulate, encode information, and perform behaviours (Pajares, 2002:1). The SCT advanced a view of human functioning that accords a central role to cognitive vicarious, self-regulatory, and self-reflective processes in human adaption and change (Pajares, 2002:1). Bandura (1986:18) explains that the SCT views people as self-organizing, proactive, self-reflecting, and self-regulating rather than as reactive organisms shaped and shepherded by environmental forces or driven by concealed inner impulses. This means that individuals possess a self-system that enables them to exercise a measure of control over their thoughts, feelings, and actions (Pajares, 2002:1). Bandura (2001:4) supports that the human mind is generative, creative proactive and reflective, not just reactive.

The SCT is based Miller and Dollard's (1941) Social Learning Theory that investigated the notion of learning through observation that failed to take into account the creation of novel responses or the processes of delayed and non-reinforced imitations (Pajares, 2002:1). The SCT explains psychosocial functioning in terms of triadic reciprocal causation (Bandura, 1986). The model of reciprocal determinism, considers behaviour, internal personal factors in the form of cognitive, affective and biological events, and environmental events as interacting determinants that influence each other bidirectional (Wood and Bandura, 1989:362; Bandura, 2001:14) (*see* Figure 2.3 overleaf). In other words, how people interpret the results of their own behaviour informs and alters their environment and the personal factors they

possess which, in turn, inform and alter subsequent behaviour (Pajares, 2002:1).

Ananda (2006:3) explains the dynamics between the SCT's elements as follows: in considering the dynamics between the person and behaviour, behaviour depends on elements such as the person's expectations and in turn behaviour can control the person. Furthermore, a person's achievement can be hindered by environmental factors such as socioeconomic factors, which can effectively limit the person's access to certain developmental opportunities.

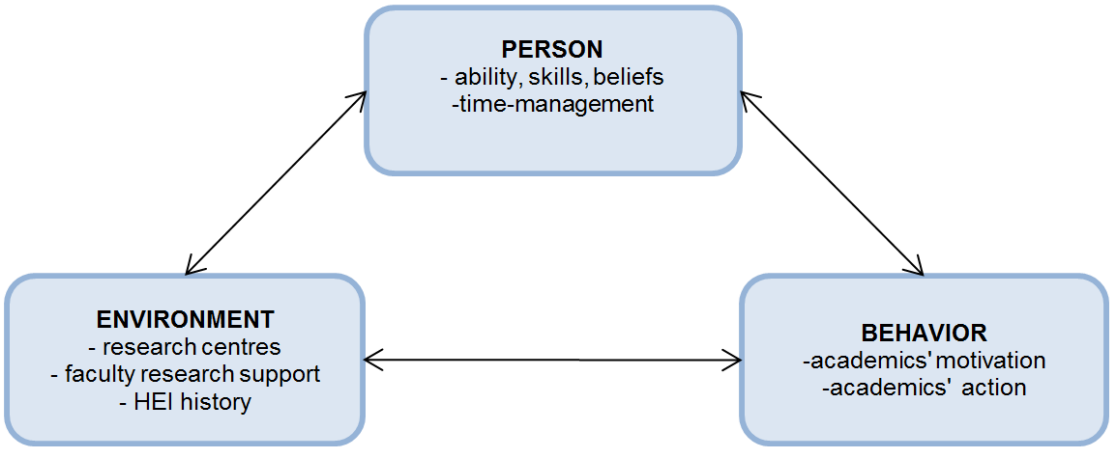


*Figure 2.3: Interaction between the environment, the person, and the behavior*

*(Adapted from: Tsai and Cheng, 2010:8480)*

Just as the environment affects a person, so too can a person affect their environment. Ananda (2006:3) quotes that for example a strict boss, can alter the environment of a room with their only action being their entry into the room. He further states that our behaviour also determines our environment as our daily life environment may just consist only of our work or home settings. Since our environment is not a static one, it can have an effect on our behaviour.

Given the above, behaviour in this study impacts in terms of the academics' motivation to study and actions they take to become engaged in research. Environmental factors in this study is defined as organizational climate, which identifies the variables, that moderate an organization's ability to mobilize its workforce in order to achieve business goals and maximize performance (Neal, Griffin and Hart, 2000:100). In terms of this study the organizational climate identifies institutional factors such as the research centre, faculty research office and research support provided by UoTs and UoAs that contribute to the academics' performance which is research output. Another environmental factor is the HEI itself, which requires their academics to adapt changes in terms of the designation from technikon to UoT and the new order that academics need to do research in order to attract funding. Affective personal factors include time-management. Cognitive personal factors are ability, skills, and beliefs of academics to study further or to become involved in research. Due to the reciprocal nature of the SCT, personal factors thus influence environment and behaviour and *vice versa*. All of these factors play a role in the process to get people enrolled in research.

Personal factors are predicted by outcome expectations and self-efficacy since both are considered as major influences on behaviour (*see* Bandura, 1982; Bandura, 1986; and Bandura, 1997; Igbara and Iivari, 1995).

### 2.4.2 Self-Efficacy Theory (SET)

Self-efficacy is believed to be the most important characteristic that determines a person's behavioural change because these expected outcomes are filtered through a person's expectations or perceptions of being able to perform the behaviour in first place (Kritsonis, 2004-2005:4).

Bandura (1989:3) maintains that expectations, beliefs, self-perceptions, goals and intentions give shape and direction to behaviour. He adds that what people think, believe, and feel, affects how they behave. Such beliefs influence whether people think pessimistically or optimistically and in ways that are self-enhancing or self-hindering (Bandura, 2001:10). Perceived self-

efficacy therefore concerns people's beliefs in their capabilities to mobilize the motivation, cognitive resources, and courses of action needed to exercise control over events in their lives (Wood and Bandura, 1989:364). This also determines a person's choice of what challenges to undertake, how much effort to expend in the endeavour, how long to persevere in the face of obstacles and failures, and whether failures are motivating or demotivating (Bandura, 2001:10). Bandura (1988:280) adds that people avoid tasks and challenges they believe exceed their capabilities but they undertake and perform confidently tasks they judge themselves capable of managing.

Wood and Bandura (1989:364) caution that there is a difference between possessing skills and being able to use them well and consentingly under difficult circumstances. They add that in order to be successful one not only must possess the required skills, but also a resilient self-belief on one's capabilities to exercise control over events to accomplish desired goals. This means that people with the same skills may, therefore, perform poorly, adequately, or extraordinarily, depending on whether their self-beliefs of efficacy enhance or impair their motivation and problem-solving efforts. Tsai and Cheng (2010:8480) support that people who have high self-efficacy will be more likely to perform related behaviour than those with low self-efficacy.

Ananda (2006:4) states that self-efficacy can be developed over time in four different ways, which are: mastery experience, modelling, social persuasion, physiological ability. Bandura (1988:284) explains that experiences in which the individual can experience success is most effective to strengthen people's beliefs about their capabilities. Another way of developing self-efficacy is the observation of a model similar to the individual who is achieving success (Ananda, 2006:4). Social persuasion or encouragement by others is a third way of increasing people's beliefs that they possess the capabilities to achieve what they seek (Bandura, 1988:284; Ananda 2006:4). Wood and Bandura (1989:365) state that people partly rely on judgements of their physiolocial states when they assess their capabilities. This means by

enhancing a person's physical status their beliefs in their self-efficacy will be strengthened (Wood and Bandura: 1989:365).

## 2.5 SUMMARY

Chapter Two presented the history of the higher education systems in Germany and South Africa. The presentation of the history focussed on the development of UoTs in South Africa and UoAs in Germany as the nature of both institutions impact their research activity. Challenges in attracting research staff and the current state of research in CMA were illuminated. This chapter ended with the discussion of Bandura's Social Cognitive Theory and Self-Efficacy Theory, which was used as theoretical framework in this study.

Chapter Three presents the research design and methodology of this study.

# CHAPTER THREE

# METHODOLOGY

## 3.1 INTRODUCTION

The previous chapter explained the history of South Africa's and Germany's higher education systems. The emergence, role and place of UoTs in South Africa and of the UoAs in Germany were illuminated. The theoretical framework explained factors that influence research output among academics.

This chapter presents the design and the methodology of this study. Different research designs are demonstrated as well as a detailed overview of the process by which the questionnaire of this study was designed. The sampling method, data collection, preliminary work and the data analysis are discussed. Reliability, validity, and ethical considerations are presented as well.

## 3.2 RESEARCH DESIGN

According to LeCompte and Schensul (2010:87), every systematic activity undertaken by human beings needs a plan of action. In research, they say, the formal plan of action for a project is called a research design. Research designs are to researchers as road maps are to vacationers or blueprints are to architects and contractors. They provide guidelines on how to proceed (LeCompte and Schensul, 2010:87). Creswell (2009:3) explains that research designs are plans and procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis. Pannersevlam (2004:12) adds that the research design provides complete guidelines for data collection and that the purpose of a research design is to

specify a plan for generating empirical evidence that will be used to answer the research questions. Since there are many types of research questions and many types of research designs, it is important to match the question to an appropriate design (McMillan and Schuhmacher, 2006:21).

There are three types of research designs: qualitative, quantitative and mixed methods (Creswell, 2009:3; McMillan and Schuhmacher, 2006:22).

### 3.2.1 Qualitative and quantitative design

Quantitative research has its roots in the hard sciences and agricultural research, fields of study, which adopted a positivist philosophy of knowing that emphasized objectivity and quantification of phenomena (McMillan and Schuhmacher, 2006:23). Creswell (2009:4) adds that quantitative research is a means for testing objective theories by examining the relationship among variables. These variables in turn can be measured, typically on instruments so that numbered data can be analyzed using statistical procedures.

Qualitative research designs use methods that are distinct from those used in quantitative designs but according to McMillan and Schuhmacher (2006:26) not less systematic than quantitative designs. The emphasis in qualitative research lies in gathering data on naturally occurring phenomena. Most of the data are in the form of words rather than numbers, and in general, the researcher must search and explore with a variety of methods until a deep understanding is achieved (McMillan and Schuhmacher, 2006:26). A qualitative research design is concerned with individuals' own accounts of their attitudes, motivations and behaviour. It offers richly descriptive reports of individuals' perceptions, attitudes, beliefs, views and feelings, the meanings and interpretations given to events and things, as well as their behaviour (Hakim, 2000:34). According to Cooper and Schindler (2008:164), the purpose of qualitative research is based on researcher immersion in the phenomenon to be studied, gathering data which provide a detailed description of events, situations and interaction between people and things,

thus providing depth and detail. Furthermore, qualitative research is often theory building but rarely tests it (Cooper and Schindler, 2008:164).

According to Newman and Benz (1998:13), qualitative and quantitative approaches should not be viewed as polar opposites of dichotomies; instead, they represent different ends on a continuum. Mixed methods research resides in the middle of this continuum because it incorporates elements of both qualitative and quantitative approaches (Creswell, 2009:3).

### 3.2.2 Mixed method design

Hesse-Biber (2010:3) explains that mixed method design involves the collection, analysis, and integration of quantitative and qualitative data in a single or multiphase study. Grenne and Caracelli (1989:258-259) list five specific reasons for using a mixed-method approach, namely: triangulation; complemenarity; development; intiation; and expansion.

Triangulation refers to the use of more than one method while studying the same research question in order to examine the same dimension of a research problem (Jick, 1979:602). Hesse-Biber (2010:3) adds that triangulation fortifies and enriches a study's conclusions, making them more acceptable to advocates of both qualitative and quantitative methods.

Complementarity, allows the researcher to gain a fuller understanding of the research problem and/or to clarify a given research result (Grenne and Caracelli, 2010:4).

Mixed methods often aid in the development of a research project by creating a synergetic effect whereby results from one method help develop or inform the other method (Greene and Caracelli, 1989:259). An example is when statistical data collected from quantitative method shapes interview questions (Hesse-Biber, 2010:4).

The findings of the study may raise questions or contradictions that will require clarification, thus initiating a new study (Hesse-Biber, 2010:4).

Expansion is intended to extend the breadth and range of inquiry (Greene and Caracelli, 1989:259). Producing detailed findings helps enable future research endeavours and allows researchers to continuously employ different and mixed methods in their pursuit of new or modified research questions (Hesse-Biber, 2010:4).

As this study was conducted within a qualitative and quantitative research paradigm, the mixed methods approach applied.

Qualitative research design applied to this study with respect to its focus of research which was to understand and interpret (Cooper and Schindler, 2008:165) CMA academics' opinions, attitudes and perceptions on research and was presented on the questionnaire in the form of open-ended questions and by semi-structured interviews. Quantitative research applied to this study with respect to the profile of academic staff in CMA and the measurement of their opinions, perceptions, and attitudes on research by using closed questions. Quantitative research design also applied to measure the strength of relationships between influencing factors on research and research output.

As qualitative and quantitative data was obtained from German and South African academics, this study may be deemed cross-cultural research.

### 3.2.3 Cross-cultural research

Cross-cultural research studies are done across two or more cultures to understand, describe, analyze, or predict phenomena (Sekaran and Bougie, 2009:437). They add that researchers engaged in cross-cultural research also endeavour to trace the similarities and differences in the behavioural and attitudinal responses at various levels in different cultures. Sekaran and Bougie (2009:219) note that certain issues need to be addressed while designing instruments for the collection of data from different countries. Language is the first matter of concern in cross-cultural researchers. As this questionnaire was administered in South Africa and Germany it was made available in English and German. It was firstly designed in English and then

translated to German by the researcher. To ensure that the translation is absolutely correct Sekaran and Bougie (2009:219) recommend it be translated from English to German by a local expert and then back to English by another translator.

For the cross-cultural data collection, Sekaran and Bougie (2009:219) mention two issues that the researcher must be aware of, namely: response equivalence and timing of data collection. They explain that response equivalence is ensured by adopting uniform data collection procedures in the different cultures. The same online-based questionnaire was therefore administered to South African and German academics. As an online survey was used, the timing of data collection sent to academics in both countries was exactly the same. Questionnaires were sent to South African and German respondents on the same day. To maintain response equivalence on the questionnaire, the term 'Cost and Management Accounting' was replaced by 'Accounting' as it is known in Germany.

All forms of empirical analysis require data (Ethridge, 2004:154). The types of data sources are explained in the next paragraph.

### 3.3 DATA SOURCES

There are two main types of data sources: primary and secondary sources. According to Wilson (2010:134) primary data is information gathered for the purposes of a researcher's study and secondary data is data that has already been published. Wrenn, Stevens and Loudon (2006:73) mention four disadvantages of secondary data, namely: a poor fit; accuracy; age - old information, and quality. They explain poor fit as, secondary data collected for some other research objective or purpose which may not be relevant to the research question at hand; accuracy refers to whether the secondary data came from a primary or secondary source. They add that secondary sources of secondary data should be avoided and that age-old information is not necessarily bad information but in many dynamic markets up-to-date data

is absolute necessity. Regarding quality, they caution that sometimes the quality of data is unknown.

The decision for the use of a primary data source in this study was due to the poor fit of secondary data to the research purpose.

According to Schmidt and Hollensen (2006:18), primary data can be collected in the development of totally new research, yield more precise data and the questions can be reflected directly towards the research problem. Houser (2008:272) explains that primary data collection is time-consuming. She also states that some respondents may not be able to communicate clearly or language barriers may be present that distort reporting, therefore those doing data recording must be carefully trained in data collection techniques.

### 3.4 DATA COLLECTION

A survey is a systematic method for gathering information from (a sample of) entities (Groves, Fowler, Couper, Lepkowski, Singer and Tourangeau, 2011:2). According to Schmidt and Hollensen (2006:139), there are four ways of collecting survey information from respondents, namely: personal; telephone; online; and postal.

A personally administered questionnaire is a good way to collect data when the survey is confined to a local area, and the organization is willing and able to assemble groups of employees to respond to questionnaire at the workplace (Sekaran and Bougie, 2009:197). They add that the advantages of a personally administered questionnaire is: the presence of the researcher when the questionnaire is handed out so that: the researcher can establish rapport and motivate respondents; doubts can be clarified; and almost 100% response rate is ensured while the anonymity of respondents is high. The disadvantage of personally administered questionnaires is that organizations may be reluctant to give up company time for the survey with groups of employees assembled for the purpose (Sekaran and Bougie, 2009: 212).

As this study's target population extended from South Africa to Germany, the personally administered questionnaire was not selected as the data collection instrument.

A postal survey constitutes a specific form of a self-administered survey. The questionnaires are posted to the respondent who complete the questionnaires and return them to the researcher. A stamped and addressed envelope is usually included for posting the completed questionnaire back to the organiser (Fourie, 2010:450). The possibility of reaching a geographically wide-spread sample is an advantage of postal surveys and actually speaks for the application of it for this study. On the other hand, postal surveys are cost intensive in consideration of post stamps for sending the questionnaires out and a stamped and addressed envelope to send them back. Particularly when viewing the online possibility to administer questionnaires the postal survey does not seem to be the right choice.

An online survey according to Baskharan and LeClaire (2009:25) is a survey that collects data electronically from your target audience over the internet. Morgan and Summers (2005:121) note that internet-based online surveys are cheap, easy to create and the data can be quickly gathered and presented. According to Churchill and Lacobucci (2005:218), the respondent will be informed *via* e-mail and will visit a website on which the survey is published. Sekaran and Bougie (2009:213) explain that electronic questionnaires are easy to administer, can reach globally, are very inexpensive, deliver fast and respondents can take more time to respond at convenience. The disadvantage being noted by Sekaran and Bougie (2009:213) is that respondents must have access to the facility.

All the advantages of an online survey speak for employing it for this study. The disadvantages can be neglected as the sampling process (as described later in this chapter) ensured that all respondents had access to computer facilities. As the advantages clearly overlay the disadvantages, the online survey in terms of an online-based questionnaire was chosen for this study.

## 3.4 ONLINE QUESTIONNAIRE

As an online-based questionnaire was one of the data collection instruments used in this study, this section deals with its design, layout and question types used.

### 3.4.1 Design of the questionnaire

Designing the questionnaire is an important part of the research process. Churchill and Lacobucci (2005:215) indicate that the questionnaire has to be developed carefully in order to minimise inaccurate answers and response errors. Brace (2008:35) concurs that a questionnaire that is going to provide accurate, good-quality information needs to be thought about and planned before a single question is written.

The questionnaire construction involves the following steps: determining questionnaire content; type of questionnaire to be used; organizing and assembling of the items; pretesting the questionnaire; evaluating the research instrument; and finalization of the instrument (Catane, 2002:61).

### 3.4.2 Layout of the questionnaire

In order to introduce the respondents to the purpose of the study and the researcher, a covering letter (*Appendix* C) was attached to the questionnaire. The covering letter introduced the researcher and the study, explained the aim of the study and what was expected of the participant, and provided the researcher's contact details.

A Letter of informed Consent (*Appendix* D) was also attached to the questionnaire. The consent form assured the participant of their anonymity, confidentially, and the protection of their rights and welfare. After reading the consent from, the respondent had to demonstrate agreement to take part in this study by placing tick in the box of the consent form.

Once the respondents had read the covering letter and the consent form he/she was guided to the questionnaire (*Appendix* B) which contained

instructions on how to answer the questions. The first section sought biographical data.

According to Sekaran and Bougie (2009:204) biographical data determines personal information like age; educational level; marital status, and income. Whether questions seeking personal information should appear at the beginning or at the end of the questionnaire is a matter of choice for the researcher (Sekaran and Bougie, 2009:204). Some researchers ask for personal data at the end rather than the beginning of the questionnaire (Oppenheim, 2005:109). Their reasoning may be that by the time the respondent reaches the end of the questionnaire he or she has been convinced of the legitimacy and genuineness of the questions framed by the researcher and hence, is more inclined and amenable to share personal information (Sekaran and Bougie, 2009:204). This questionnaire was designed with the biographical data at the beginning as the researcher opined that once respondents have shared some of their personal history, they may have psychologically identified themselves with the questionnaire, and may feel a commitment to respond (Sekaran and Bougie, 2009:204).

Questions 1-10 of the questionnaire intended to gather biographical data. The purpose of the biographical data was to gather information about the profile of CMA academics with regard to: gender, age, lecturing experience, qualifications, job tasks, and job title. It also asked if the respondent was currently registered for a postgraduate qualification.

Section B of the questionnaire, which contained questions 11-19, dealt with the attitudes and opinions of CMA academics on research. The purpose was to get a picture of the academics personal view on research and their personal research behaviour.

Questions 20-24 which formed Section C of the questionnaire, dealt with influencing factors on research. The purpose was to find out which factors impact and how they affect the research activity and output of CMA academics.

Questions 25-48 were scaled response questions employing a Likert-Type Scale and contained questions on the importance of research (questions 25-27) as well as their view on the relationship between teaching and research as educator's tasks (questions 28-31). The next four questions (32-36) dealt with the role of research at universities, furthermore questions 37-43 dealt with the role of research in CMA. Questions 44-48 dealt with more factors that influence research output. Because the intention was to summarise all Likert-Type Scale questions in one section, this segment dealt with different issues.

Question 49-60 dealt with the academic's perceptions on obtaining postgraduate qualifications, this range formed Section E.

Section F, which was an extension of questions 61-67 dealt with the influence of the masters' programme structure on research output.

The last section (questions 68-70) included open-ended questions where the respondents were encouraged to add comments or give advice. Question 70 asked them to indicate personal data, such as their: name, email address, and telephone number if they were willing to participate in an interview.

In summary, this questionnaire consisted of 70 questions and was divided into six sections. Out of the 70 questions, nine of them were open-ended, 37 of them were rated response questions using the Likert-Type Scale and the remaining 26 questions were closed ones.

### 3.4.3 Question types

There are a variety of question types and forms.

Open-ended questions allow respondents to answer them in any way they choose. An example of an open-ended question is asking the respondent to state five things that are interesting and challenging in their job (Sekaran and Bougie, 2009:200). Open-ended questions are also known as free-response questions, where the participant records his or her ideas in his or her own

words in the space provided on a questionnaire (Cooper and Schindler, 2008:340).

A closed question, in contrast, asks respondents to make choices among a set of alternatives given by the researcher (Sekaran and Bougie, 2009:200).

Closed questions on the questionnaire in this study appeared as dichotomous questions, multiple choice, single response questions, multiple choice, multiple response questions and scaled response questions (Cooper and Schindler, 2008:340-341). Figure 3.1 (below) presents the question types used on the questionnaire with an example of the question types.

| RESPONSE FORMAT | EXAMPLE OF QUESTION |
|---|---|
| Open-ended question | What do you think is most beneficial to the development of a student's research ability? |
| Dichotomous Question | Are you engaged in research?<br>a) Yes b) No |
| Multiple Choic, Single Response | What is your highest qualification in CMA?<br>a) lower than a master's b) a master's c) doctorate |
| Multiple Choice, Mulitple Response | For what purposes are you doing research?<br>a) It is part of my job description<br>b) Teaching is informed by research<br>c) Doing research gives me personal fulfillment<br>d) I believe that research enhances my possibility to be promoted |
| Scaled Response Question | Research is essential to generate new knowledge.<br>a) strongly disagree b) disagree c) neutral d) agree e) strongly agree |

*Figure 3.1: Question types*

*(Adapted from: Cooper and Schindler, 2008:340-341.)*

A dichotomous question suggests opposing responses (Cooper and Schindler, 2008:340). The dichotomous scale was used to elicit a Yes or No answer (Sekaran and Bougie, 2009:149).

Multiple choice, single response question are appropriate when there are more than two alternatives or when we seek gradations of preference, interest or agreement they request that the participant make a single choice (Cooper and Schindler, 2008:342). Multiple choice, multiple response questions are the same in structure as mulitple choice, single response questions. The difference is that more than one category can be chosen (Nargundkar, 2003:59). A problem occurs when the list of choices is not exhaustive as participants may want to give an answer that is not offered as an alternative (Cooper and Schindler, 2008:342). To counteract this problem the answering possibility called 'other' was added to multiple choice single response questions and space was provided for the answer.

A scaled response question is a closed question designed to measure the intensity of a respondent's answer (Lamb, Hair and McDaniel, 2008:249). In order to measure the intensity of a respondent's answer the Likert-type scale was employed. Stacks (2010:56) explains that the Likert-type scale was developed in 1932 by Rensis Likert and that Likert-type scales, also known as summated rating-scales, are composed of a series of item statements that are reacted to on a continuum of pre-designated responses. A Likert-type scale consists of several items (usually between 2 and 10 per underlying dimension reacted to on a 5-point scale-usually 'strongly disagree', 'disagree', 'neutral', 'agree' and 'strongly agree' (Stacks, 2010:56).

All the questions independent of their type were designed based on the research's objectives. The goal was to fulfil the research objectives with the developed questionnaire in the most accurate manner possible.

In addition to the questionnaire, semi-structured interviews were employed as data collection instrument.

## 3.5 SEMI-STRUCTURED INTERVIEWS

A semi-structured interview is a type of interview, in which the researcher uses a written list of questions as a guide, while still having the freedom to digress and probe for more information (Mackey and Gass, 2005:173).

As the telephone survey offered the advantage of reaching a sample which is geographically spread this survey method was employed for the semi-structured interviews. Telephone surveys are widely used in consumer research. It is a very inexpensive method to collect survey data, several interviews can be completed quickly, and a wide sector of the population can be reached easily (Burns and Bush, 2006:247). Telephone surveys are best suited for asking structured questions where responses need to be obtained quickly from a sample that is geographically spread (Sekaran and Bougie, 2009:217).

In this study semi-structured interviews were conducted where responses were either incomplete, difficult to understand or required more explanation. Only those respondents who agreed to participate in an interview were contacted and quantitative as well as qualitative data was collected, this was added to the questionnaire data, and analysed accordingly.

## 3.6 SAMPLING

Sampling is the process of selecting a sufficient number of the right elements from the population (Sekaran and Bougie, 2009:266) or as Lohr (2009:3) notes, sampling is a subset of the population.

### 3.6.1 Sampling framework

Sekaran and Bougie (2009:266) describe five dependent steps of sampling as: definition of the population; construction of a sampling frame; selection of a sampling design, determine the appropriate sample size and execute the sampling process.

Sampling begins with precisely defining the target population. The target population is the set of all individuals relevant to a particular study (Burt, Baber and Rigby, 2009:259) and must be defined in terms of elements, geographical boundaries, and time (Sekaran and Bougie, 2009:267).

The target population for this study was defined by the study's purpose and delimitations. This study was therefore limited to UoTs in South Africa and UoAs in Germany that offer a master's programme in CMA.

There are four UoTs in South Africa and six UoAs in Germany offering a master's in CMA.

Only two UoTs in SA offer a DTech in CMA and UoAs in Germany are not permitted to offer doctoral qualifications.

Consequently the target population was all CMA academics at UoTs in SA and UoAs in Germany teaching and/or supervising at master's level.

Now that the target population is determined it is necessary to construct the sampling frame. A sampling frame (also called a population frame) is an ordered list of the individuals in a population (Burt *et al.*, 2009:258) or a physical representation of all the elements in the population from which the sample is drawn (Sekaran and Bougie, 2009:267). Following Sekaran and Bougie's (2009:267) recommendation, the university registry of the relevant faculty/department containing a listing of all students, faculty, administrators, and support staff in the university during the 2011 academic year or semester served as the sampling frame for this study.

The next step was to select a sampling design. Burt *et al.* (2009:266) cite various reasons for sampling. Firstly, they note that it is usually not necessary to take a complete census. Valid reliable generalizations about the characteristics of a population can be made with a sample of a modest size – if the sample is properly taken.

Another reason is time, cost and effort for collecting data from a sample which are usually substantially less than to collect the same information from a larger population (Burt *et al.*, 2009:266). In summary it is sometimes impossible and impractical to involve the whole population in a research. This method saves costs because the data collection instrument does not have to be sent out to the entire population and data can be collected and analysed more quickly (Stevens, Wrenn, Sherwood and Ruddick, 2006:182).

### 3.6.2 Sampling design

There are two main types of sampling design: probability and non-probability sampling (Sekaran and Bougie, 2009:267; Jackson, 2011:117-118).

Jackson (2011:117) explains when researcher use probability sampling, each member of the population has an equal likelihood of being selected to be part of the sample. Whereas, non-probability sampling is used when individual members of the population do not have an equal likelihood of being selected to be a member of the sample. This means that the findings from the study of the sample cannot be confidently generalized to the population (Sekaran and Bougie, 2009:276). Sekaran and Bougie (2009:276) state that sometimes non-probability sampling is the only way to obtain data. Non-probability sampling designs fit in the broad categories of convenience sampling and purposive sampling (Sekaran and Bougie, 2009:276).

The sample for this study is confined to specific types of people who can provide the desired information, because they are the only ones who have it, and conform to some criteria set by the researcher (Sekaran and Bougie, 2009:276). Sekaran and Bougie (2009:276) explain, that this sampling design is called purposive sampling. The above mentioned specific types of people in this study are these academics of the population, who directly deal with Cost and Management Accounting and not with for example, law or management. Clear distinctions are therefore made to academics all CMA academics teaching/or supervising in Cost and Management Accounting

Sekaran and Bougie (2009:268) summarize six factors affecting decisions on sample size, namely: The research objective; the extent of precision desired (the confidence interval); the acceptable risk in predicting that level of precision (confidence level); The amount of variability in the population itself; the cost and time constraints; and the size of the population itsels.

The latter applies to this study as whole target population consisted of 68 academics, whereof only 35 were directly involved in Cost and Management Accounting and hence, used as actual sample. Sample sizes larger than 30 and less than 500 are appropriate for most research (Sekaran and Bougie, 2009:296).

In order to gather contact details for administering the questionnaire, every UoT and UoA offering a master's in CMA was consulted *via* email. In this email (*Appendix* A) the title and the purpose of the research was explained. The sample was therefore built on the universities' responses which included email addresses and names of all CMA academics who deal with CMA and are involved in master's programmes at their institution.

According to Babbie (2010:272-273) it almost never happens that 100% of the sample response to a survey. He explains that because of that non-response bias become a matter of concern, but if a high response rate is achieved there is less chance of non-response bias.

Babbie (2010:273) explains that a 70% response rate is necessary to ensure reliability and to minimize non-response bias. Out of the sample size of 35 academics, 25 responded which is a response rate of 71.43% and hence, reliability of the survey was ensured.

### 3.6.3 Administration of the questionnaire

In order to collect the required data the questionnaire for the main study was administered *via* email on 31 October 2011 to the whole population. A few introductory words, the link, which leads to the online-based questionnaire

and the request to fill in the questionnaire within two weeks, were presented in the email. A covering letter and a Letter of Informed Consent were attached to the questionnaire. The questionnaire was made available for the German academics in German language and for the South African academics in English.

## 3.7 PRELIMINARY WORK

Preliminary work was done before the questionnaire was administered for the main study. The preliminary work included a pilot study and seeking ethical clearance.

### 3.7.1 Pilot study

After the designed questionnaire had been checked for spelling, grammar and comprehensibility by South African and German experts, a pilot study was conducted.

The pilot study is a tryout of the questionnaire to see how it works and whether change is necessary before the start of the full-scale study (Catane, 2002:69) and is sent out to people who will be taking part in the main survey (Dawson, 2009:98).

Light, Singer and Willett (1990:213) state that no design is ever so complete that it cannot be improved by a prior, small-scale exploratory study. Pilot studies are almost always worth the time and effort. McMillan and Schuhmacher (2006:202) and Oppenheim (2005:48) also highly recommend piloting before using the questionnaire in the main study.

The purpose of a pilot study is to find out whether some questions need to be modified, eliminated or if there is a need for additional questions. It also determines the reliability and validity of the questionnaire (Catane,2002:69).

For exactly the above mentioned purposes the questionnaire was handed out to eight elements of the target population. In order to pre-test the South

African as well as the German version of the questionnaire, four South African and four German academics participated in the pilot study.

### 3.7.2 Findings of the pilot study

Four South African academics and two German academic responded to the pilot study. The responses were analysed accordingly.

The pilot study confirmed the validity and reliability of the questionnaire. The reliability was determined by the use of 'Cronbach's Alpha'. According to Andrew, Damon, Paul and McEvoy (2011:202), Cronbach's Alpha is a popular method for measuring the internal consistency and reliability of a group of items. It measures how well a set of variables or items measures a single, unideminsonal latent construct. Using Cronbach's Alpha the statistician who analysed the questionnaire confirmed that reliability scores were high and acceptable and that the questionnaire could be administered to a wider sample.

To ensure validity, first frequencies were undertaken in order to investigate whether the instrument measured what the researcher wanted to measure. The validity of the questionnaire was proved as analysis of the questionnaire provided answers to all of the study's research objectives.

### 3.7.3 Ethical considerations

Ethics are generally considered to deal with beliefs about what is right or wrong, proper or improper, good or bad. Since most research deals with human beings, it is necessary to understand ethical and legal responsibilities of conducting research. Ethics in research is meant in terms of conducting research and protecting the rights and welfare of the subjects at the same time (McMillan and Schuhmacher, 2006:142; Saunders *et al.*, 2009:183-184). This means that it is essential to ensure that the research design is both methodologically sound and morally defensible to all those who are involved (Saunders *et al*, 2009:184). In order to fulfil a researcher's ethical responsibility, ethical issues as mentioned by Saunders *et al.* (2009:185)

were taken under consideration. A consent form was therefore attached to every questionnaire and the agreement to participate had to be indicated by the respondent. Furthermore, the participant was assured of anonymity and confidentiality. Participants were also informed that pseudonyms would be used in any write-up or reporting of findings. Ethical clearance for the questionnaire was sought and granted by the Durban University of Technology. Ethical clearance and permission to conduct research was granted all the UoTs and UoAs that participated in this study (Appendix E).

### 3.8 DATA ANALYSIS

The method being used to analyse the data depends on the research design (Dawson, 2009:114). Quantitative methods are used when the data have been collected in or are soon converted into numbers for analysis, while qualitative methods are used when data are in words and remain in words throughout the analysis (Blaikie, 2003:47). As this study was conducted within a mixed-method approach, qualitative and quantitative data analysis methods had to be employed. In order to analyse the qualitative data, gained through open-ended questions in the questionnaire on the questionnaire and from the semi-structured interviews, content analysis was employed.

According to Cohen, Manion and Morrison (2007:475), content analysis is the process of summarizing and reporting written data – the main contents of data and their messages. Flick (1998:192) narrows it down to a strict and systematic set of procedures for the rigorous analysis, examination and verification of the contents of written data. As recommend by Dawson (2009:122) the researcher worked through each transcript assigning codes, using numbers and words to specific characteristics within the text. He explains that the categories can either be determined before the collection of the qualitative data or emerge from the collected data. In this study, categories were determined by reading through the responses to open-ended questions.

After illuminating the qualitative side of data the focus is now on quantitative data by describing the data preparation which included the transformation of the questionnaire to an online-based version and the processing and analysing of the quantitative data processing with Statistical Package for Social Sciences (SPSS).

### 3.8.1 Data preparation

As the questionnaire was first designed in Microsoft Office Excel, it had to be transformed to an online version.

The online tool chosen by the researcher was Google Docs as it provides a tool to create online surveys. The advantages of this tool are easy handling, the freedom from cost and an Excel sheet produced by this tool including all responses. The excel Sheet is produced as soon as the respondent submits the completed in questionnaire. The Excel sheet can then be used as input for the data analysis in SPSS.

The researcher experienced two problems with this tool. Firstly it was impossible to guide the respondent automatically to the next question where the next question was dependent on the former question's answer. To solve this problem further instructions were placed after the answering possibilities/options. Figure 3.2 (below) shows such a case.

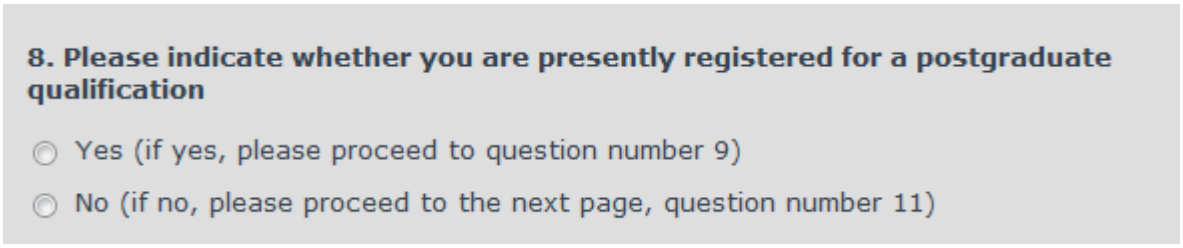


*Figure 3.2: Further instructions after answer options*

Another problem emerged as the English and the German version of the online questionnaire were developed within the same Google Docs account. The language-settings of the account affect the survey creating tool, so that it

was impossible to add the answering possibility ‘other’ in the German version. Figure 3.3 (below) illustrates the problem.

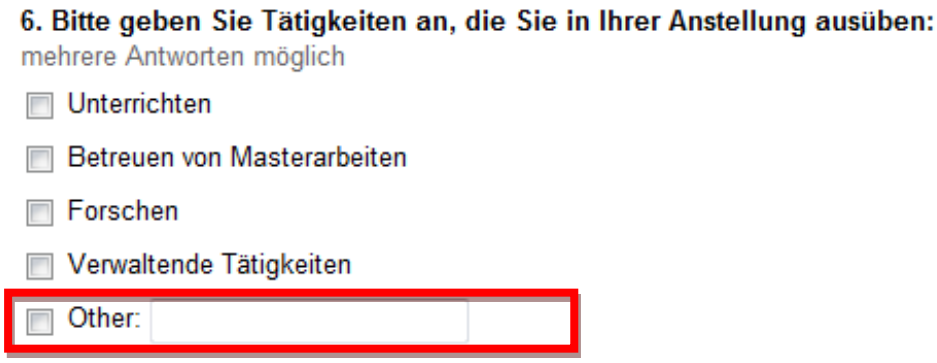


*Figure 3.3: The 'other' problem*

As the expression ‘other’ is not a German one, a new Google Docs account with German language settings was created in order to get the right wording.

*3.8.1.1 Data coding*

In order to analyse the data with SPSS the questionnaire had to be transformed into a numeric form. Except for the open-ended questions, all other questions were given numbers and the answering possibilities were numbered as well. The coded questionnaire and the associated responses were provided on an Excel sheet to the statistician.

### 3.8.2 Data processing

The data for this study was analysed using version 18.0 of the Statistical Package for Social Sciences (SPSS) and a statistician was consulted.

Dawson (2009:115) states that the use of statistical software is the easiest and most efficient method to analysis data, as most software packages produce well presented graphs, pie charts and tables which can be used for the final report.

Quantitative research relies heavily on numbers in reporting results and sampling (McMillan and Schuhmacher, 2006:149). For quantitative data there

is a wide variety of data-analysis techniques from which to choose (Blaikie, 2003:47). In this study quantitative data were analysed in terms of a descriptive statistics. According to McMillan and Schuhmacher (2006:152) descriptive statistics are used to summarize, organize, and reduce large numbers of observations. Descriptive statistics can be divided into two types: univariate descriptive analysis and bivarate descriptive analysis (Blaikie, 2003:47; McMillan and Schuhmacher, 2006:152).

Univariate descriptive analysis is concerned with summarizing the characteristics of some phenomenon in terms of distributions on variables, whereas the bivariate descriptive analysis is concerned with describing the form and strength of associations between variables, as well as comparing the characteristics of the same variable in different populations (Blaike, 2003:47; Babbie, 2010:426-436). The most basic format for presenting univariate data is to report all individual cases, that is, to list the attribute for each case under study in terms of the variable in question, which is called frequency distribution (Blaike, 2003:47).

Bivariate analysis however, determines relationships between the variables itself (Babbie, 2010:438). The bivariate analysis in SPSS was carried out by cross tabulations and T-tests.

A cross tabulation is a table that shows the number of cases falling into each combination of the categories of two or more variables (Muijs, 2011:99). Cases are the people or things data is collected from, whereas a variable describes any characteristic of the unit we are interested in and want to collect (e.g. gender, age, lecturing-experience) (Muijs, 2011:8).

A T-test compares the means of two groups (Muijs, 2011:111). In this study, for example, the importance of publishing research in journals regarded by German and South African academics could be compared.

### 3.8.3 Reliability and validity

Issues of validity and reliability are important for quantitative data-analysis (Dawson, 2009:114; McMillan and Schuhmacher, 2006:149). Reliability and validity are the two criteria used to judge the quality of all standardized quantitative measures (Lodico, Spaulding and Voegtle, 2010:93).

Validity asks the question: are we measuring what we want to measure? (Muijs, 2011:56; Lodico *et al.*, 2010:93). McMillian and Schuhmacher (2006:130) state that validity is a judgement of the appropriateness of a measure for specific inferences, decisions and/or consequences. Validity is situation-specific concept, it is dependent on the purpose, population, and a situational factor in which measurement takes place (McMillan and Schuhmacher, 2010:130).

Reliability refers to the extent to which test scores are free of measurement error (Muijs, 2011:61). McMillan and Schuhmacher (2006:130) add that reliability refers to the extent to which the scores are similar over different forms of the same instrument or occasions of data collection.

#### *3.8.3.1 Ensuring measurement validity*

There are two ways to ensure validity of a survey. One way is to base it on an already-validated survey and the other way is to conduct a pilot study (Fink, 2006:31).

In this study a pilot study was conducted and as suggested by Fink (2006:31) the actual circumstances in which the survey was to be conducted were anticipated and respondents were chosen similar to the ones who would eventually complete the survey. It also tried to enlist as many people as possible.

#### *3.8.3.2 Ensuring measurement reliability*

Whenever something is measured, there is some element of error, called measurement error (Muijs, 2011:61). As Dzansi (2004:190) points out, an

instrument can never be 100% reliable because it is just impossible to completely eliminate threats to reliability ensuring measurement reliability focuses on minimizing errors.

Saunders, Lewis and Thornhill (2009:156) mention three types of errors threatening reliability of measurement: subject or participant error; subject or participant bias and observer error/bias.

They explain that subject errors usually refer to the situation whereby the respondents are not representative of the population under investigation. In order to minimize subject error academic staff in accounting was clearly identified and the questionnaire was send to their personal email addresses.

Subject or participant error can occur when subjects deliberately provide inaccurate responses, refuse to answer certain questions or when the response rate is very low (Saunders *et al.,* 2009:156). Care was taken to frame questions so that respondents do not view them as intrusive. The respondents were assured of anonymity and confidentially, follow-up emails were sent to avoid a low response rate.

Different approaches used by different interviewers are the main cause of observer error. As the questionnaire was online-based and the same questionnaire was sent out to all participants and the researcher conducted the interviews only, the observer error/bias did not apply to this study.

Cronbach's Alpha was used to ensure reliability of this study. Cronbach's Alpha measures the so-called internal consisitency reliability which relates to the extent to which all the variable that make up the scale are measuring the same thing (Muijs, 2011:217) in other words it indicates the extent to which a measure is bias free (error free) (Sekaran and Bougie, 2009:161). As a guideline, it is said that a Cronbach's alpha above 0.7 is acceptable for research purposes. The results for this study are presented in table 3.1 (overleaf).

| Section | | Cronbach's Alpha |
|---|---|---|
| Section D: | Q23 | .685 |
| | Q24 | .655 |
| | Q25 – Q40 | .901 |
| | Q41 – Q48 | .637 |
| SECTION E: ATTITUDES AND OPINIONS ON OBTAINING POSTGRADUATEQUALIFICATIONS IN CMA | | .654 |
| Overall | | .855 |

*Table 3.1: Reliability scores by Cronbach's Alpha*

The reliability scores for each section indicates a high degree of acceptable consistent scoring for the different categories for this research. All of the categories have (high), acceptable reliability values.

The overall reliability for the study was 0.855. It is noted that the value is high, which indicates consistent and reliable scoring for the research.

## 3.9 SUMMARY

This research was conducted within a mixed-methods approach. Qualitative as well as quantitative data was gathered by the use of an online-based questionnaire and semi-structured interviews. The data source was primary and located in two countries which made this study cross cultural research. The sample method used was purposive sampling. After a pilot study was carried out to ensure reliability and validity of the measuring instruments, the main study was administered online and in German and English. To ensure that the research was conducted in an appropriate ethical manner, ethical clearance was sought and granted by all institutions that participated in this study.

The next chapter presents the findings of this study.

# CHAPTER FOUR

# RESEARCH FINDINGS AND DISCUSSIONS

## 4.1 INTRODUCTION

Chapter Three presented this study's research methodology and described how the data gathered from the questionnaires and semi-structured interviews were analysed. This chapter discusses the findings of this study. As semi-structured interviews were only conducted where answers were incomplete or difficult to understand, the findings of the questionnaires and interviews are presented together.

## 4.2 RESPONSE RATE

Of the fifty online-based questionnaires administered to CMA academics in Germany and South Africa thirty-five unspoilt questionnaires were returned. Five questionnaires had to be disregarded as there were huge parts left out by respondents. A possible reason was the extent of the questionnaire as a German respondent stated the questionnaire was too long. However, thirty-five returned questionnaires make up a 70% response rate which ensures reliability and minimizes non-response bias (Babbie, 2010:273). Sousa-Brown (2008:118) adds that a 40% response rate is a good estimate for an online survey.

The good return rate in this study is attributed mainly to the following reasons: four follow-up mails were sent to respondents over a period of four months, and the involvement of one German and one South African academic in the questionnaire administration process. Both academics sent out the link to the questionnaire *via* email to the sample and encouraged potential respondents to participate. The fact that two academics from institutions which were part of the sample (namely: DUT and Berlin School of

Economics and Law) were actively involved in the data collection process reflected positively on their institutions' participation in this study because a little less than half of the South African respondents (46.7%) were from DUT and amongst the German respondents, a third (33.3%) were from the Berlin School of Economics and Law. Eleven of the German respondents did not indicate the name of their institution. A possible reason could be to maintain anonymity. After the targeted 70% response rate was achieved, data were handed in for analysis.

## 4.3 PRESENTATION OF THE FINDINGS

In order to provide an overview of the academic staff profile in both countries, presentation of the findings starts with an analysis of biographical data arising from section A of the questionnaire. This is followed by the results arising from the questionnaire and semi-structured interviews. The presentation of the findings follows the division of the questionnaire. Adapting Bui's (2009:180) recommendation that results or findings should be organized around major themes or patterns, the data is divided and presented in themes based on the division of the questionnaire.

To provide rich information on the themes, analysis of quantitative data is combined with analysis of qualitative data (where applicable) to provide a fuller understanding of quantitative findings (Grenne and Caracelli, 2010:4).

## 4.4 BIOGRAPHICAL DATA

This section presents the descriptive statistics based on the demographic information of the study. To gain a broad picture of the South African and German CMA respondents, data were obtained regarding their age, qualification level, job title, and their job tasks.

### 4.4.1 Age and qualification level of academics

Analysis of the age of respondents revealed that most of the German respondents (80%) were between the ages of 41 to 60 years, whereas a little

more than half of the South African respondents (66.7%) were under the age of 41. Among the German respondents, only 10% were under the age of 41 and none were younger than 31 years, while 26.7% of the South African academics were younger than 31, and 40% were between the ages of 31 to 40.

All in all, the South African academics were younger than the Germans. The Germans appointment policy may explain why their academics are older than their South African counterparts as German UoAs usually require a minimum of a doctorate plus five years of postdoctoral work to be appointed as an academic (Enders, 2001:10). A cross-tabulation of qualification level and age of academics (Table 4.1 overleaf) divided by country supports the statement that the UoAs appointment policy may be the reason for older academics in Germany.

In Germany 89.5% of respondents had a doctorate and only 2.9% were qualified at a level lower than a doctorate. Out of the 18 academics (90%) older than 41, 16 academics (80%) held a doctorate. One respondent (10%) was qualified as a chartered accountant and the remaining respondent (10%) was qualified at levels lower than a master's. The average age of a person finishing his/her doctorate is between 33 to 35 years in Germany (Meckhat, 2003), thereafter academics still need to do five years of postdoctoral work, which explains an age of around 40 years when appointed as an academic. Out of the two German academics younger than 41, one held a doctorate and the other was qualified at a master's level. Unfortunately it cannot be explained why they were appointed without meeting the requirements as these two respondents were not willing to participate in an interview.

| Country | | | | Age in years | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 20 - 30 | 31 - 40 | 41 - 50 | 51 - 60 | 60+ | |
| South Africa | Highest academic qualification in CMA/Accounting | Lower than a master's | Count | 4 | 2 | 0 | 1 | | 7 |
| | | | % of Total | 26.70% | 13.30% | 0.00% | 6.70% | | 46.70% |
| | | Master's | Count | 0 | 3 | 1 | 2 | | 6 |
| | | | % of Total | 0% | 20% | 6.70% | 13.30% | | 40% |
| | | Doctorate | Count | 0 | 1 | 1 | 0 | | 2 |
| | | | % of Total | 0% | 6.70% | 6.70% | 0% | | 13.3 |
| | Total | | Count | 4 | 6 | 2 | 3 | | 15 |
| | | | % of Total | 26.70% | 40% | 13.30% | 20.00% | | 100% |
| Germany | Highest academic qualification in CMA/Accounting | Lower than a master's | Count | | 0 | 1 | 0 | 0 | 1 |
| | | | % of Total | | 0.00% | 5.00% | 0% | 0% | 5% |
| | | Master's | Count | | 1 | 0 | 0 | 0 | 1 |
| | | | % of Total | | 5.00% | 0.00% | 0% | 0% | 5% |
| | | Chartered Accountant | Count | | 0 | 1 | 0 | 0 | 1 |
| | | | % of Total | | 0.00% | 5.00% | 0% | 0% | 5% |
| | | Doctorate | Count | | 1 | 6 | 8 | 2 | 17 |
| | | | % of Total | | 5.00% | 30.00% | 40% | 10% | 85% |
| | Total | | Count | | 2 | 8 | 8 | 2 | 20 |
| | | | % of Total | | 10.00% | 40.00% | 40% | 10% | 100% |

*Table 4.1: Cross tabulation of qualification level and age by country*

Historically the appointment policy of UoTs in South Africa did not require a doctorate. This is supported by the fact that the majority of South African master's graduates (76%) are under the age of 39 (CHE, 2012b:14). In 2009 the DoHET decreed that academics must improve their qualifications to a minimum of a master's degree by 2012 (Singh, 2011:1191) further indicating that academics were previously appointed with levels lower than a master's. West (2006:123) adds that doctoral qualifications have not been the norm for appointments as academics in South Africa as there is a massive shortage of highly qualified academic accountants. The above is reflected in the age/qualification profile of South African academics at UoTs as out of the five academics (33.3%) older than 41, only one had a doctorate, three were qualified at a master's level and another was qualified at levels lower than a master's. One out of ten South African academics younger than 41 had a doctorate whereas six academics (60%) younger than 41 were qualified at levels lower than a master's. This adds up 46.7% of South African

respondents qualified at levels lower than a master's and 13.3% had a doctorate. There is still big potential for South African academics to upgrade qualifications.

### 4.4.2 Job tasks of respondents

The job tasks of the respondents are illustrated in Figure 4.1 (below). The values are per country.

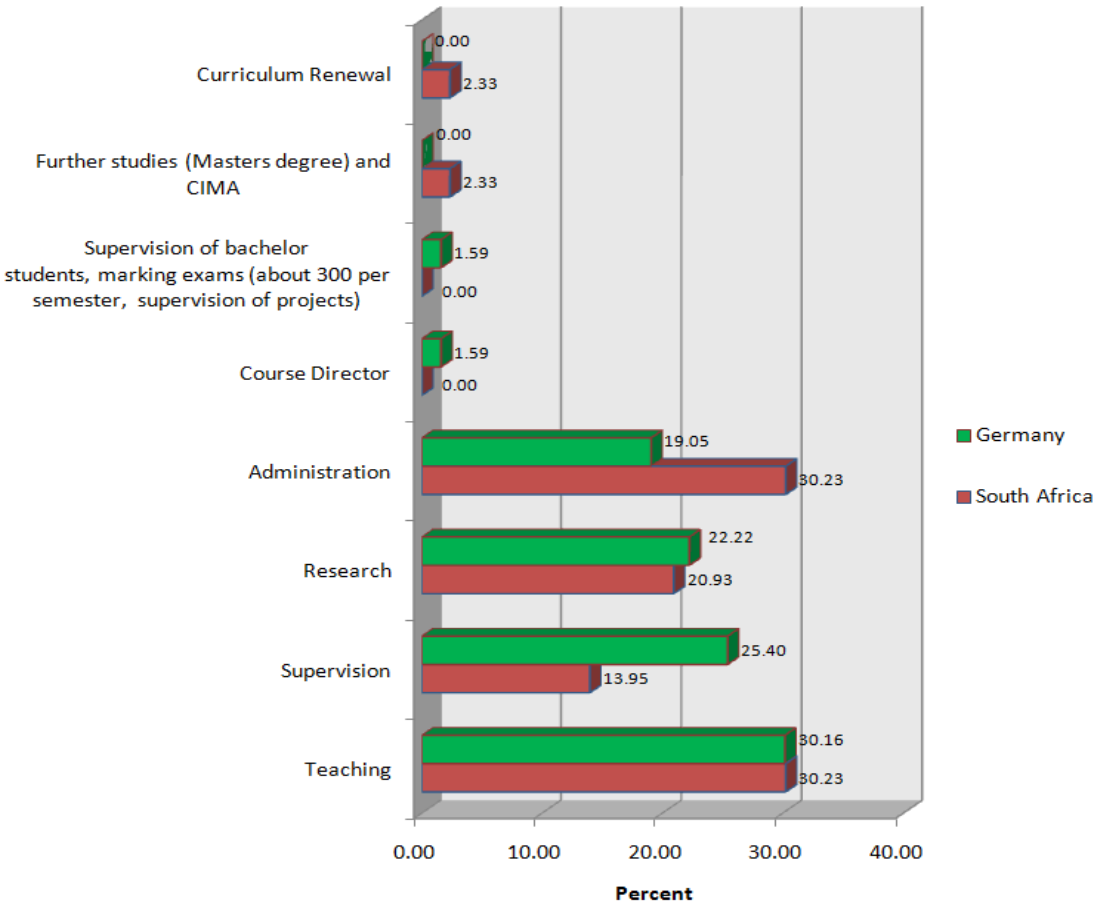


*Figure 4.1: Job tasks of academics by country*

Over half of the South African academics (60.46%) indicated teaching and administration as their job tasks, followed by research (20.93%) and supervision (13.95%). Small portions (4.66%) of South Africans indicated curriculum renewal (2.33%) and further study (2.33%) as job tasks.

A third (30.16%) of the German academics indicated teaching as their job task, followed by supervision (25.40%), research (22.22%) and administrative duties (19.05%). It is noted that for the factors of teaching and research, similar numbers were obtained in both countries.

South Africans only spent 13.95% of their time on supervision, this is almost half of the time Germans spent on supervision (25.40%). The difference in time spent on supervision may be explained by the qualification levels of academics in both countries as the share of doctorates (13.3%) correlates with the number of academics indicating supervision (13.95%) as their job task in South Africa.

According to the DoHET (2007:26-29), research capability is a characteristic of master's and doctorate's and a person with a doctorate must be able to supervise and evaluate the research of others in the area of specialisation concerned (DoHET, 2007:29). As 56.3% of South African respondents were qualified at or above levels of a master's, the same proportion should be able to do research as their job task. However, only 20.93% of South African stated research as a job task indicating that not every respondent is involved in research. A possible reason may be time spent on other job tasks like administrative work as this is the second biggest time consuming factor in South Africa. South African respondents spent as much time on administrative work as they did on teaching and this was 10% more time than their German counterparts spent on the same tasks.

Although 85% of German respondents had a doctorate and all of them were appointed at a professorial level, only 22.22% indicated research as a job task. This may be due the so-called *Hausberufungsverbot* (literally: House appointment ban) which prohibits promotion within the same HEI (Langer, 2011). He explains that the *Hausberufungsverbot* aims to prevent nepotism. In other words, there is little chance of promotion for a German academic, whereas South African qualifications and job titles still indicate potential for promotions among academic staff.

### 4.4.3 Job title and qualification

Table 4.2 (below) shows a cross-tabulation of job title and qualification by country.

| Country | | | | Job title | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Junior Lecturer | Lecturer | Senior Lecturer | Associate Professor | Professor | Deputy Dean | |
| South Africa | Highest academic qualification in CMA/Accounting | Lower than a master's | Count | 3 | 4 | 0 | | 0 | 0 | 7 |
| | | | % of Total | 20.0% | 26.7% | 0.0% | | 0.0% | 0.0% | 46.7% |
| | | Master's | Count | 0 | 3 | 2 | | 0 | 1 | 6 |
| | | | % of Total | 0.0% | 20.0% | 13.3% | | 0.0% | 6.70% | 40.0% |
| | | Doctorate | Count | 0 | 0 | 1 | | 1 | 0 | 2 |
| | | | % of Total | 0.0% | 0.0% | 6.7% | | 6.70% | 0% | 13.3 |
| | Total | | Count | 3 | 7 | 3 | | | | 15 |
| | | | % of Total | 20.0% | 46.7% | 20.0% | | | | 100.0% |
| Germany | Highest academic qualification in CMA/Accounting | Lower than a master's | Count | | | | 1 | 0 | | 1 |
| | | | % of Total | | | | 5.0% | 0.0% | | 5.0% |
| | | Master's | Count | | | | 1 | 0 | | 1 |
| | | | % of Total | | | | 5.0% | 0.0% | | 5.0% |
| | | Chartered Accountant | Count | | | | 1 | 0 | | 1 |
| | | | % of Total | | | | 5.0% | 0.0% | | 5.0% |
| | | Doctorate | Count | | | | 15 | 2 | | 17 |
| | | | % of Total | | | | 75.0% | 10.0% | | 85.0% |
| | Total | | Count | | | | 18 | 2 | | 20 |
| | | | % of Total | | | | 90.0% | 10.0% | | 100.0% |

*Table 4.2: Cross-tabulation - Job title and qualification by country*

More than half of the South African respondents (66.7%) were Junior Lecturers or Lecturers, followed by 20% who were Senior Lecturers. Full Professors and Deputy Deans made up a total of 13.4%, of this 6.7% on the rank of professor were qualified at doctorate level. This is contrary to West's statement (2006:125) that there are a number of Professors in South Africa without PhDs. He explains that in South Africa a Chartered Accountant with a master's degree may be eligible to apply for the position of Associate Professor. The findings of this study revealed that there were no respondents who obtained a position higher than a Senior Lecturer without a doctorate. Out of the 20% Senior Lecturers in this study, one (6.7%) was qualified at a doctorate level and another two (13.3%) had master's. Less than half (20%) of the respondents appointed as Lecturers (46.7%) were qualified at a level

of a master's. All Junior Lecturers (20%) were qualified at levels lower than a master's.

Amongst the Germans, all of the respondents were at professorial level, 90% at Associate and 10% at Full Professor status. In Germany, 75% of Associate Professors and 100% of Full Professors had a doctorate. Most of the German respondents (85%) thus confirmed West's (2006:125) statement that in developed countries at the very least a PhD is required to be appointed as an Associate Professor or Full Professor. The remaining 15% (3 respondents) were contrary to West's assertion as they were Associate Professors without a doctoral qualification. The researcher tried to investigate the anomaly in job title and qualification but the three participants in question were not willing to participate in an interview.

## 4.5 RESEARCH OUTPUT

Research output in this study was defined as the number of published research articles in accredited and non-accredited journals by the respondents (Govender, 2011:12).

### 4.5.1 Importance of publishing research in journals

SCT explains that the link between individual and behaviour reflects the interaction between thought, affect and action (Bandura, 1989:3) or in other words what people think, believe, and feel, affects how they behave. Therefore, respondents were asked how important they considered publishing research in journals. Figure 4.2 (overleaf) shows the findings by country. Similar percentages of respondents by country (80% of South Africans and 75% of Germans) thought that publishing research in journals was important or very important, with similar percentages indicating that it was less important (6.67% of South Africans and 5% of Germans). The number of respondents amongst the South Africans who considered it important was evenly split in the two categories of importance, that is 40% important, and 40% very important. However, the Germans showed a

different scoring pattern within the category of 'important'. Whereas more than two-thirds of the Germans (65%) considered publishing research in journals important, only 10% thought that it is very important. One possible reason for the low percentage in the category of 'very important' could be the German research funding policy as it does not provide for research publications in journals because there are no special research funding laws in Germany (Lepori and Kyvik, 2010:304).

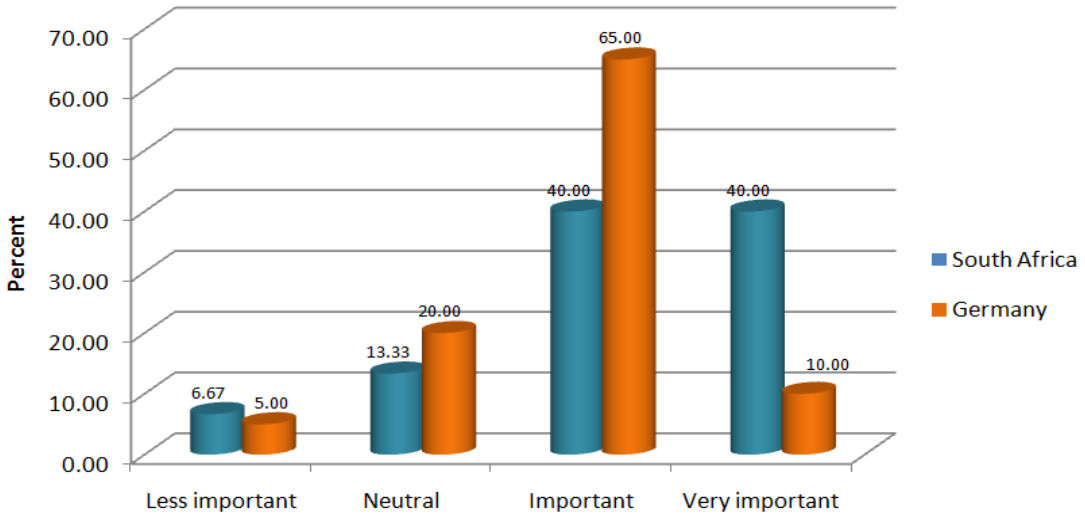


*Figure 4.2: Importance of publishing research*

Thus, German academics do not earn further funds for their research publications in journals. Another reason for not considering publishing research in journals as 'very important' could be the role that books play in Germany as they are more important than in many other countries and publishing findings of dissertations in journals is still the exception (Wagenhofer, 2006:2). He explains further that dissertations and habilitation theses are commonly written in the form of monographs and are usually published as books and that after publication of research in a book, the same research cannot appear in a journal.

Once respondents indicated their opinion on the importance of publishing research they were asked to explain their choice of importance in an open-ended question. The answers were then divided in three categories as

follows: making research visible; fulfillment of the institutional and academic research mission; and earning of financial resources.

Making research visible: Reasons stated by the respondents for the importance of making research visible were to prevent other researchers from using the same (possibly incorrect) approach for conducting research; to stimulate further discussion and research on the published research findings; to contribute to a body of knowledge; and to announce the current state of science. South African as well as German respondents explained their choice of importance by stating the answers applicable to the category ‘making research visible’.

Fulfillment of the institutional and academic research mission: Answers stated in this category were mostly simple statements made by respondents like: ‘academics need to be involved in scholarly work and publishing in research journals’; or ‘it is important for an academic to engage in research and thereafter publish your research’; or ‘we are researchers; we want to be a university (not only a university of technology)’; or ‘a university has to do research’. It must be noted, that this category was only stated by South African respondents. A possible explanation may be the strong emphasis on applied research, the development of research capacity, postgraduate qualifications and published research at UoTs (Singh, 2011:1191). None of the German respondents felt that it is important to publish research in journals because of reasons displayed earlier and because German UoA sector is still, concerning their research function, between an experimental phase and the integration of research missions into institutional strategies (Lepori and Kyvik, 2010:301).

Earning financial resources: The last category only found among the South African responses was the earning of subsidy for both the university and the researcher. This is due to the South African funding policy as research articles published in accredited journals attract funding (CHE, 2009b:49) (for detailed explanation *see* section 2.2.3.1).

### 4.5.2 Research output

Although the importance of publishing research in journals was ranked as either ‘important’ or ‘very important’ by the majority in both countries, 45% of the German respondents and 73% of South African respondents had not published in accredited journals.

Those who are publishing in South Africa, publish on average 2.3 articles a year, that is in accredited and non-accredited journal. This is half an article less than what the German respondents publish on average a year (2.8 articles) in non-accredited and accredited journals. Although there is only a difference of half an article in the overall average of published articles, there are big differences in the contribution of articles in accredited and non-accredited journals.

*4.5.2.1 Publication in accredited journals*

The South Africans publish almost double as much articles (1.1 per year) in accredited journals as the Germans who published on average 0.7 articles in accredited journals.

Publishing research in accredited journals is the mark of a good academic, this was indicated as the main motive for publishing by 36.4% of South African respondents and 58.3% of German respondents. None of the Germans stated that it is a university requirement or that it brings revenue, whereas 18.2% of the South African specified these reasons as their motives. This can be once more explained by the South African funding policy since the government drives HEIs towards self-sufficiency in terms of income generation through output and provides therefore subsidy per unit of research output (Singh, 2011:1192; De Villiers and Steyn, 2009:62). Similar percentages of respondents (9.1% of South African and 8.3% of Germans) thought that publishing in accredited journals looks good on their CV and 16.7% of German responses indicated that they think there article is good if

accepted for publication. None of the South African gave this response as a motive for publishing in accredited journals.

*4.5.2.2 Publication in non-accredited journals*

German respondents publish on average 2.1 articles a year in non-accredited journals. This is almost double the amount (on average 1.2 articles per year) published by South African respondents in non-accredited journals.

Over a third (33.3%) of the Germans stated that non-accredited journals are the most suitable tool to reach practitioners. This finding was very surprising since this particular option or answering possibility was not provided on the questionnaire. The 33.3% stated this under the option 'other'. More information on this answer was gathered *via* the semi-structured interview. It was found that the focus of a UoA is applied research which is mainly relevant to practitioners, and accredited journals are not read by practitioners as they are too scientific. Hence, in order to reach the right audience for results in applied research it is advisable to publish in non-accredited journals.

The majority of the South African respondents (71.42%) thought that publishing in non-accredited journals is a good way to gain experience in publishing. Only 8.3% of the Germans thought the same way. Similar percentages of respondents in South Africa (14.28%) and Germany (16.67%) indicated that there are only few accredited journals publishing research in CMA. A study of the South African Department of Higher Education and Training list of accredited journals, that is the Institute for Scientific Information (ISI), International Bibliography of the Social Sciences, and South African Department of Higher Education and Training (ISI, IBSS and DHET – FOR 2012 SUBMISSION, 2012:105) revealed that there is only one accredited journal including the word 'management accounting' in its title, namely: Management Accounting Research. Also the view of the 16.67% Germans is supported by Wagenhofer (2006:2) who states that there are specialist German Management Accounting journals but their target

readership tends to be practitioners rather than academics which hints that these specialised CMA journals are non-accredited.

The high rejection rate of accredited journals was indicated by 14.28% of South Africans and 8.3% of Germans as a reason for opting to publish in non-accredited journals. Another 16.67% of the Germans indicated that emerging authors' work are seldom accepted for publication in accredited journals, and the same percentage of German respondents found that the requirements are less stringent than the accredited journals. In summary a high rejection rate, rare acceptance of novice researchers, and stringent requirements speak against publishing research in accredited journals for 47.62% of the German respondents. Thus, 47.62% of the German respondents do not see a positive outcome of their attempts to publish in accredited journals, which may keep these respondents away from doing so. Bandura (1988:287) supports that people regard errors and mistakes as indications they are not smart and people prefer tasks that minimise errors and permit them to demonstrate proficiency at the expense of new skills.

*4.5.2.3 Areas of research articles*

The majority (69.23% of South African and 57.14% of Germans) of the respondents in both countries indicated that they published in the field of Cost and Management Accounting. Small portions of respondents indicated other fields of investigation as shown in Figure 4.3 (overleaf). In Germany almost one third (28.57%) published in the area of Financial Accounting, while only 7.69% of the South Africans do. One German respondent published in the field of Auditing, and another in Management. There was one South African respondent each who indicated that he/she publishes in any field of Accounting, Financial Management, or Education.

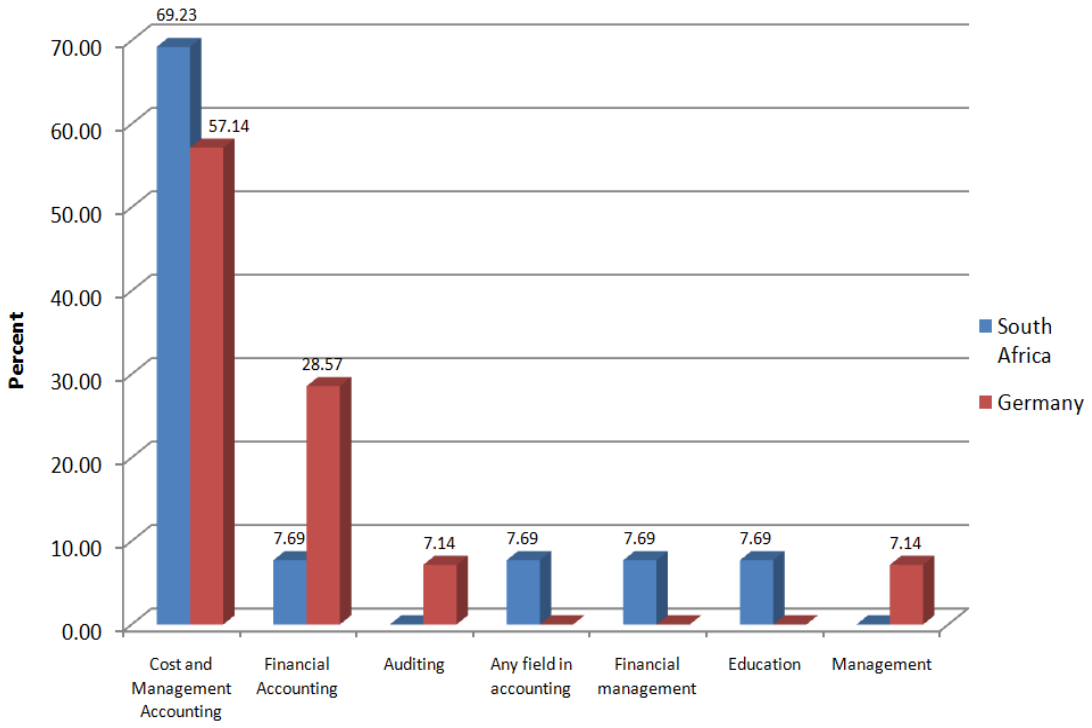


*Figure 4.3: Area of research articles by country*

As master's and doctorate graduates in CMA contribute research output, the relevance of postgraduate qualifications in CMA is presented in the next section.

## 4.6 POSTGRADUATE QUALIFICATIONS IN CMA

Postgraduate qualifications enhance research output in three different ways: they prepare a person to carry out further research (DoHET, 2007:24-29); a postgraduate degree enables one to supervise the next generation of researchers and there is an urgent demand for research staff (Chetty, 2003:50); and postgraduate dissertations contribute to an institution's research output if transferable into a research publication unit (de Villiers and Steyn, 2009:66). This section therefore deals with the respondents' perceptions on the role of postgraduate qualifications in CMA.

As indicated in section 4.4.1, 86.7% of South African respondents were qualified at a level lower than doctorate. There seems to be a movement towards upgrading qualifications since 46.67% of South African respondents

were registered for a postgraduate qualification. None of the Germans were registered for a further degree, a possible reason could be that 89.5% of the German respondents were qualified with a doctorate. Figure 4.4 (below) shows the degrees for which South African respondents were registered.

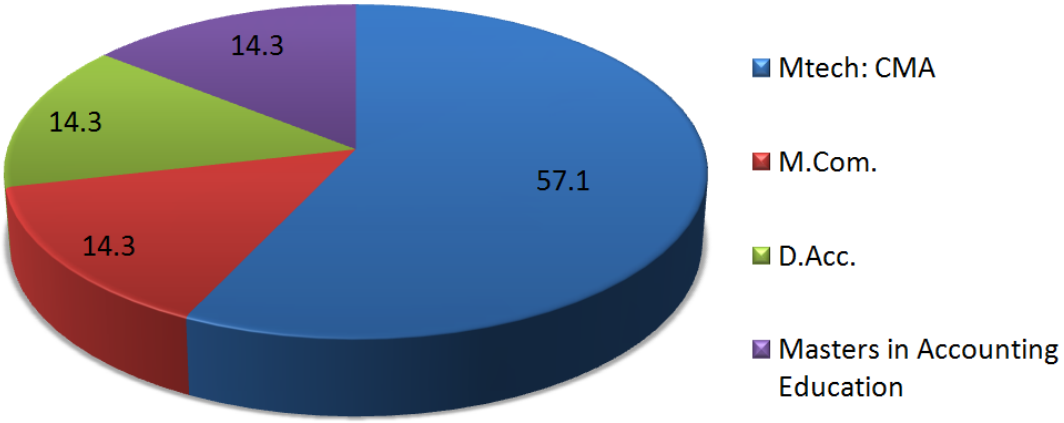


*Figure 4.4: Higher degree registration among SA respondents*

One South African respondent (14.3%) was registered for a master's in Accounting Education, another for a master's of commerce and 14.3% was registered for a doctorate in Accounting. The majority (57%) were registered for a master's degree in Technology (MTech) in CMA. This means that they were registered at a UoT as these are the institutions that offer a technology degree. When asked why they registered for a postgraduate degree, most of the respondents (62.5%) cited personal ambition to upgrade their qualifications.

Bandura (1988:280) explains that decisions such as the decision to register for a further study, are determined by judgements of personal efficacy. Wood and Bandura (1989:366) add that the stronger the personal efficacy, the higher the goals people set for themselves and the firmer their commitments to these goals. They state further that from the fulfilling of such a goal people seek satisfaction and they are motivated by discontent with substandard performances. This means that the taken action by respondents (to register for a further study) is an outcome of the self-regulation of motivation and

action through people's internal standards and evaluation of own behaviour (Bandura, 1988:280). The high numbers of MTech degree registration can be explained by the incentives given to staff from UoTs to improve their qualifications. According to Bandura, providing positive incentives and rewards is one method to get an individual to perform a certain behaviour which in this case is the attainment of a postgraduate qualification in CMA (Kritsonis, 2004-2005:4). He concludes that such reinforcement processes make individuals change due to rewards and positive incentives. Bandura (1989:24) adds that performance is influenced by incentives and people are more likely to exhibit behaviour if it results in valued outcomes than if it has unrewarding or punishing effects.

Five out of six UoTs indicate incentives on their websites for their staff: CUT offers bursaries for staff registered for a postgraduate degree (Research and Development at the CUT 2009, 2012:16-17); TUT and VUT provide funding opportunities for staff wishing to upgrade their qualifications (Research Capacity Development Programmes, 2012; Research Support, 2012); CPUT provides research project running costs for staff members and study fees are waived (Postgraduate student funding, 2012; University Research Funding, 2012); DUT provided an incentive scheme for staff registered for postgraduate qualifications up to 2010. Presently master's students are awarded an amount of R10 000 and doctoral students get R15 000 (The award structure, 2012).

Odendaal and Joubert (2011:30; *see* also Chen, Jones and McIntyre, 2008) state that career opportunities serve as indicators for the relevance of CMA postgraduate qualifications. This is in alignment with Bandura's Social Cognitive Theory as outcome expectations are considered as major influences on behaviour (*see* Bandura, 1982; Bandura, 1986; and Bandura, 1997; Igbara and Iivari, 1995). Career opportunities in industry do not seem to be the reason for the high share of MTech degree registration since the South African respondents drew a pessimistic picture of career opportunities of CMA postgraduates. Almost half of the South African respondents

(46.15%) disagree that there is a demand for a master's qualification in CMA in industry, whereas 100% of the Germans see a demand in industry indicating agreement with the statement. Similar percentages were obtained when asked for the demand of a doctorate qualification in CMA in industry, as 46.15% of South Africans did not see a demand while the majority (68.75%) of German respondents saw a demand for a doctorate qualification in CMA. Moreover, a third (38.46%) of South African respondents thought that there are no job opportunities for CMA master's or doctorate graduates other than those of an academic.

None of the German respondents felt this way. The majority (76.9%) of South Africans saw a qualification as CA mostly in demand in industry. This correlates with Odendaal and Joubert's (2011:23) findings that there is a shortage of 22 000 accountants to fill currently vacant posts. In Germany the situation seems to be different since only 26.3% of respondents think that a CA is mostly in demand in industry. Over half of the Germans (57.9%) indicated that a master's in CMA is mostly in demand in industry. A possible explanation for the distinguished career opportunities may be explained with regard to different master's programme structures and contents offered in both countries.

## 4.7 MASTER'S PROGRAM STRUCTURE

A course-worked based master's with completion of a minor dissertation seems to be the norm in Germany as a 100% of German respondents indicated that the master's programme offered at their institution is structured this way. All of the South African respondents (100%) stated that the master's degree at their institution is obtained by writing a dissertation only. When asked why the offered master's programme is structured this way, almost half of the South Africans (45.5%) chose development of students' research skills as the reason. This is in alignment with the Higher Education Qualification Framework (HEQF) which states that the primary purpose of a master's degree is to educate and train researchers who can contribute to

the development of knowledge at an advanced level, or prepare graduates for advanced and specialised professional employment (DoHET, 2007:27).

Over half of the German respondents (52.9%) indicated that the structure of the master's programmes offered at their UoAs complies with the demand of industry. The emphasis on preparating master's students for industry is displayed on every UoA's website. The Berlin School for Economics and Law (Accounting and Controlling, 2012) states for example, that the master's degree enables students to take over demanding professional and managerial tasks at international operating enterprises. Münster UoA states that their master's programme caters for those students who seek managerial positions in an enterprise (Accounting and Finance [Master], 2012).

The aim of the master's program at Nürtingen-Geislingen University is to obtain excellent professional skills in the fields of Accounting, Auditing and Taxation (Masterstudiengang Accounting, Auditing and Taxation [M.A.], 2012). The Erfurt UoA states that the general aim of the study is to prepare students to obtain executive postitions in the following divisions of an enterprise: corporate finance, accounting, and controlling (Master of Arts Finance and Accounting, 2012). In summary it seems like the master's programmes in both countries cater for different purposes, in South Africa to prepare the next generation of researchers, and in Germany to prepare for a professional career in industry.

Although the purposes of the programmes are different, 82.4% of the German and 76% of the South African respondents believe that their master's programme adequately develops the student's ability to conduct research. When asked in an interview how the master's programme develops student's ability to conduct research, the German interviewee stated that the written Bachelor's dissertation lays the foundation for research activity in the master's study. He stated further that the Bachelor's dissertation is a crucial

step to research work and that the dissertation written during the master's study deepened already existing research skills.

The South Africans found that close guidance of a supervisor and the completion of a dissertation how their master's programmes develop students' research ability. This correlates with Drennan and Clark's (2009:484) findings that the completion of a thesis is most benefecial to develop students' research skills. Of the same opinion as Drennan and Clark are 22.67% of the German respondents. Further findings to the question regarding what is most beneficial to develop students research ability are illustrated in Figure 4.5 (below).

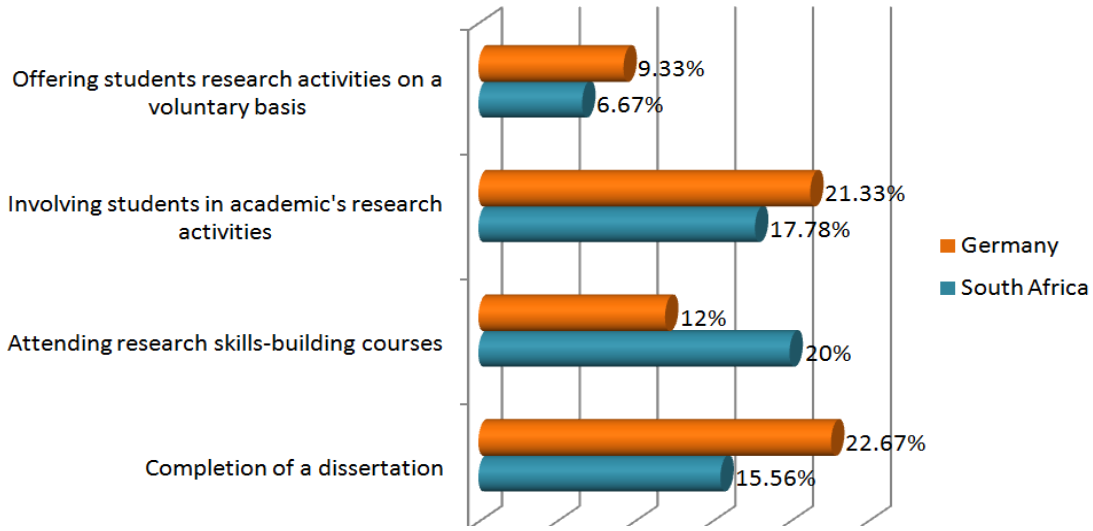


*Figure 4.5: Activities most beneficial for the development of research abilities*

South African respondents (20%) found that attending research-skills building courses are most beneficial to develop students' research ability. Second most beneficial for 21.33% of the Germans and 17.78% of the South African's is the students' involvement in academic research. South African's (15.56%) felt that the completion of a dissertation is the third most beneficial for the development of research abilities, whereas the German respondents (12%) rated attending research-skills building courses on rank three. Offering research activities on a voluntary basis was not seen as very beneficial for the development of research abilitites in both countries, as only 9.33% of the

German respondents and 6.67% of the South African respondents chose this answering possibility.

The South African respondents also indicated that research by full dissertation earns a higher subsidy from the DoHET as compared to the coursework master's (*see* SA, 2004).

## 4.8 FACTORS INFLUENCING RESEARCH OUTPUT

Nieuwoudt and Wilcocks (2005:49) found in their study that time, support systems, financial factors, and research abilities, are the main limitations to research output of Accounting academics. Besides these limitations this study also considered supervision of postgraduate students, public recognition, promotion and own motivation as influencing factors.

### 4.8.1 Time

Time is one of the critical factors to research output most discussed in literature (Bland and Schmitz, 1986:26; Creswell; 1986:90; Nieuwoudt and Wilcocks, 2005:58; Schulze, 2008:651; Geertsema and van Niekerk, 2009:924). South African respondents (20.45%) as well as German (20%) respondents in this study cited that time available for research is the factor that affects research activity the most. Respondents were asked how much time they have available for research (assuming their whole workload is 100%). Figure 4.6 (overleaf) presents the answers to this question.

The majority of respondents in both countries (Germany 78.95% and South Africa 53.33%), have less than 20% of their workload time available for research. A quarter (25%) of German respondents has much less time for research than their South African counterparts. Only 33.34% of the South Africans and 21.06% of the Germans had between 20 to 40% of their workload time available for research, which would be ideal (Bland and Schmitz, 1986:26).

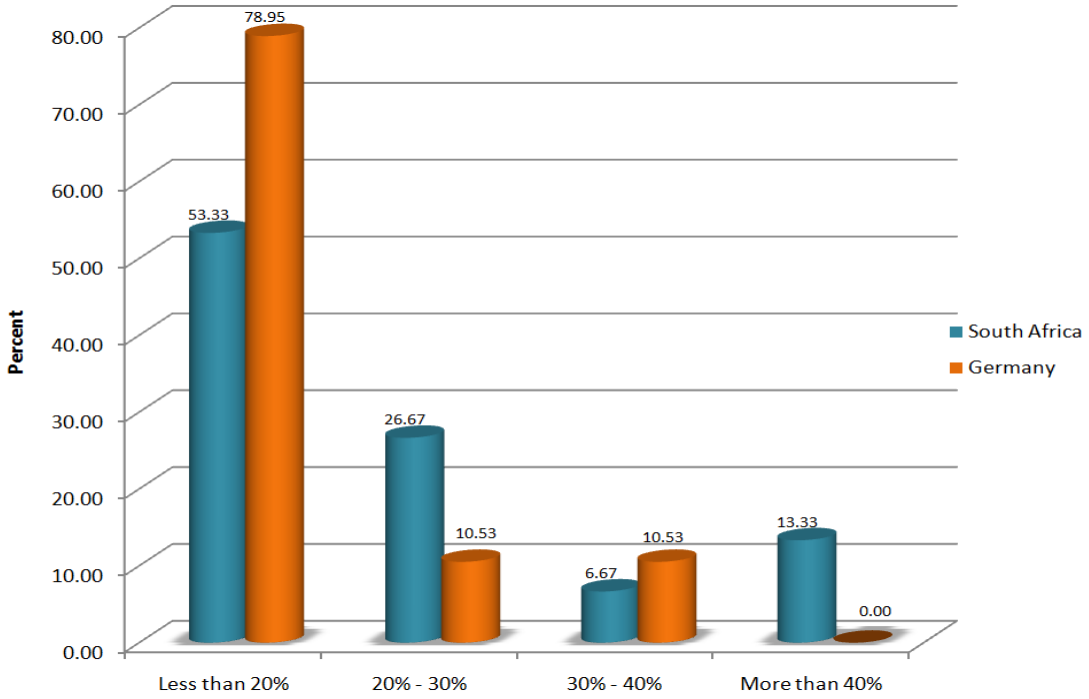


*Figure 4.6: Time available for research by country*

The ideal percentage of whole workload spent on doing research is according to Bland and Schmitz (1986:26) between 30 to 40% or at least 20% (Creswell, 1986:90). More than 40% of worktime allocated to research was only indicated by 13.33% of South African respondents and none of the German respondents.

The above indicates that there are other time related factors that determine academics workload, like teaching and administrative work (*see* Demski and Zimmerman; and 2000; Parker, 2005). How academics should juggle their time among research, teaching and administrative work is one of the most debated issues (Nieuwoudt and Wilcocks, 2005:51). This study revealed that South African respondents as well as German respondents experienced negative influence on their research activity by spending time on teaching, administrative duties and attending meetings. Time spent in class teaching affects 20% of German respondents in their research activities by time spent in class teaching as 20% of respondents counted for this factor. Only 10.20% of South African respondents felt the same way. These findings correlate with

Demski and Zimmerman's (2000:349) statement that teaching and research are opposing choices and an hour spent on teaching is an hour that cannot be devoted to research. A possible reason for the distinguished findings in both countries may be the impact the Bologna Process had on teaching workload of German academics. Dysthe and Webler (2010:259) explain that the Bologna Process resulted in an enormous increase in the amount of teaching, mainly lectures. They add that because a professor's income is partly dependent on teaching load and they have tried to retain the same teaching load as before the Bologna process, although the former Diplom programme (8 to 10 semesters) was shortened to a Bachelor's programme with only six semesters.

20.41% of the South African respondents indicated that they spent time on attending meetings, while only 15% of the German respondents indicated that time spent on attending meetings negatively influenced research.

Both countries rated time spent on administrative duties with almost equal percentages (18.33% of German respondents and 18.37% of South African respondents) as negatively influencing their research activities. In his study Schulze (2008:657) also found that many of his participants believed they spent probably half of their time in meetings and administrative issues of various kinds which resulted in a lack of uninterrupted time for research.

In South Africa rank three of the negative influencing factors to research activity was obtained by time spent preparation for teaching (13.33%), and supervision of postgraduate students with the same percentage.

### 4.8.2 Supervision of postgraduate students

Geertsema and van Niekerk (2009:924) suggest that more postgraduate students should be involved in research in order to improve research output but this requires supervision by academic staff. In order to supervise academic staff need not only adequate qualifications and skills but a self-belief of efficacy (Wood and Bandura, 1989:364). The stronger the people's

self-beliefs of efficacy, the better they prepare themselves educationally for different occupational pursuits, such as supervision (Wood and Bandura, 1989:364; *see* also Betz and Hackett, 1986; Lent and Hackett, 1987; Miura, 1987). A question on the questionnaire asked if and how supervision of postgraduate students affects respondents' research activity. The South African respondents (13.33%) indicated that supervision of postgraduate students influences their research activity negatively as it left them with reduced time to focus on their own research, whereas only a very small percentage of German respondents (4.08%) felt the same way. Moreover, 13.33% of the German respondents indicated that supervision of postgraduate students affects their research positively.

Only 4.55% of the South African academics felt the same way. The same pattern was revealed when asked for the respondents' level of agreement with the following statement: 'Being a promoter of master's or doctoral studies enhances my research output'. Over a third (38.46%) of South African respondents disagreed with this statement, while only 16.67% of the German respondents disagreed.

Those Germans who disagreed stated that master's dissertations are only transferable to research output units in exceptional cases due to bad quality and no new insights are gained from these works. They state furthermore, that the quality of dissertation was better ten years ago, this is due to the increase in students to supervise. Hence, a supervisor does not have sufficient time for intensive and high quality supervision. However, almost half of the Germans (44.44%) believed that being a promoter of master's or doctoral studies enhances their research output. They explained that they publish together with their master's students. One South African respondent who selected 'neutral' explained that on the one hand, it needs quite a lot of time if you want to be a good supervisor, on the other hand you get input which you can use for research as well. Those South Africans who did believe that their research output is enhanced by being a promoter of postgraduate students stated that the more you are involved in students

research, the wider you read and the more you learn in the process and at the end you have more publications as you publish together with them.

### 4.8.3 Financial factors

Nieuwoudt and Wilcocks (2005:52) state that time is money and therefore financial reward systems for research output has to be taken into account when evaluating South African Accounting academics' perceptions and attitudes regarding research. In response to the statement: 'Publishing research brings me personal financial benefit', 38.46% of South African respondents agreed and 33.33% of German respondents disagreed indicating that there is a lack of financial research support at German UoAs. Moreover, a third of the Germans (33.33%) indicated that they would do research if they had sufficient funding. Lepori and Kvyrik (2010:300) contribute that reports from UoAs are full of complaints about lack of financial resources to conduct research.

Over half (57.14%) of the South respondents disagreed with the statement that publishing research does not benefit me personally in any way, whereas only a third (33.33%) of the German respondents felt the same way. This may be due to the South African funding policy for published research. As indicated in sector 2.2.4.2 universities try to promote research output by providing monetary incentives for postgraduate students and their staff. This is reflected by 57.14% of South African respondents who agree with the statement: My university provides generous research support to academics. The institution and institutional research support in this study were regarded as environmental factors as they formed part of the organisational climate. Based on the SCT, institutional research support should have an influence on the individual's behaviour (Tsai and Cheng, 2010:8480). Bonner and Sprinkle (2002:34) caution although there to be sufficient financial support among South African UoTs to promote research, Accounting academics must first have the requisite research skills before a reward system will have an impact on research productivity.

### 4.8.4 Research skills

Only 3.33% of the German respondents and 4.08% of the South African respondents indicated that their research skills or lack thereof affect their research activity negatively. On the other hand, only a quarter of the South African respondents and 15% of German respondents indicated that their knowledge of research and of the research process affects their research activity positively. South African respondents (11.36%) indicated further that a research skill-building course at their institution would affect their research activity positively which corelates with over a third of South African respondents (37.92%) indicating that they would do research if: they knew how (10.4%); understood the research process (13.79%); and could write academically (13.79%). This is in alignment with Nieuwoudt and Wilcocks (2005:63) who found that methodical difficulties related to inadequate knowledge of research methodologies, poor or inappropriate levels of research skills, and a lack of scientific writing skills may account for the lack of Accounting research output in South Africa. Bandura (1988:280) supports that people who perform poorly may do so because they lack skills. Furthermore, he states that people's beliefs about their capabilities affect their motivation as well as the activities they undertake. He adds that not only the beliefs about their capabilities affect an individual's motivation and activity but that environmental influences also partly determine which forms of behavior are developed and activated (Bandura, 1988:5). This study therefore also considered support systems.

### 4.8.5 Support systems

As a result of the interplay between self-system and external environmental sources of influence such as support systems enable individuals to learn from each other, plan alternative strategies, regulate individual's behaviour and engage in self-reflection (Inman, 2012:2). Mouton (2001:7-8) is of the opinion that in order to succeed in research, a researcher has to have a support system both at home and at work. Demski and Zimmerman

(2000:350) concur with this view, and they list support by colleagues as one of the four main contributors to research production and consumption. Figure 4.7 (below) shows respondents' opinion on support systems.

In alignment with Mouton's statement are 71.43% of the South African respondents who indicated that a support system at home motivates them to do research. Only 21.05% of the German respondents indicated the same. Over two-thirds of the German respondents (68.42%) indicated that a support system neither motivates nor demotivates them as they engage in research out of self motivation and interest and not for financial or other reward.

The South African respondents said that support systems at home centred around family. Members of their family benefitted directly from any rewards or benefits to the researcher. They understood the benefits in terms of (the researcher's) job security promotion prospects and the financial rewards that go with promotions. They were also aware of the financial, leave, and other rewards offered by the institution for members of staff engaged in research. Moreover, they wanted to see their family member succeed.

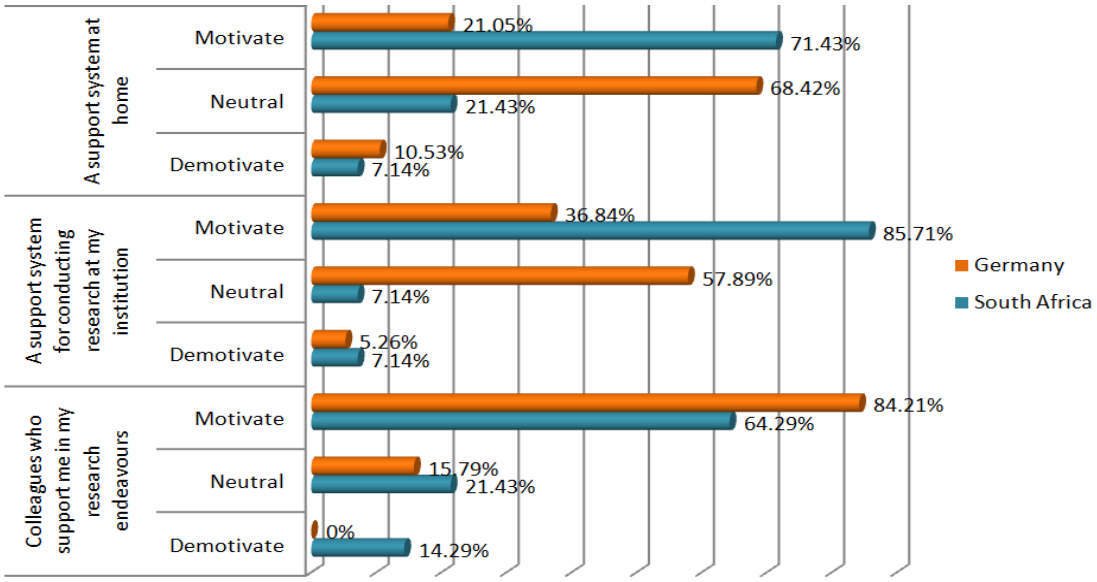


*Figure 4.7: Support systems*

Whereas the majority (85.71%) of South African respondents felt that a support system at their institution motivated them to do research, only a third (36.84%) of the German respondents felt the same way. Likewise, a support system at home almost two-thirds of the German respondents (57.89%) found an institutional support system neither motivating nor demotivating. Support from colleagues, however, was motivating for 84.21% of German respondents and 64.2% of South African respondents.

South African and German respondents indicated that colleagues who were involved in research were usually supported each other in their research endeavours. The interaction with supportive colleagues is especially beneficial to the development of an individual's belief in their capabilities to perform certain behaviours as individuals gain self-efficacy beliefs through social persuasions they receive from others (Wood and Bandura, 1989:363). Another benefit that arises from collegial support is explained by Wenger's social theory of learning (Wenger, 2000:235) which states that researchers learn how to do research through their research-related interaction with one another and with different researchers' work. Bandura (1986:45) supports that vicarious learning which is learning through observation of others' behaviour, permits individuals to learn a novel behaviour without undergoing the trial and error process of performing it.

### 4.8.6 Public recognition and promotion

Epstein, Kenway and Boden (2005:54-55) state that publishing research helps to build your profile as an academic and researcher in your field, and it enhances your reputation. In other words the public recognizes a researcher's publications. In response to a question on the effect of public recognition as a motivating factor to publish, both countries showed similiar patterns, with the majority (85.71%) of South African respondents and German respondents (78.95%) indicating that it had a motivating effect.

Besides public recognition a researcher may be able to secure a new job or a promotion through publication work (Raju, 2009:2), thus career opportunities

and being promoted had a motivating effect on the majority of South African respondents (78.57%). An expected benefit is a construct utilized from established cognitive-based theories to understand activity at the individual level (Tsai and Cheng, 2010:8480).

The majority of the German respondents felt that career opportunities and promotion had no effect on their level of motivation for doing research as 78.95% indicated 'neutral' for career opportunities and 73.68% indicated 'neutral' for promotion. A possible explanation may be the UoAs appointment policy, since an academic is commonly only appointed with a doctorate and at professorial level, hardly leaving any chance for promotion (Enders, 2001:10).

### 4.8.7 Personal interest

Most motivating to do research seems to be the personal interest in generating new knowledge indicated by 100% of South African respondents and 94.74% of German respondents as having a motivating effect on research output. According to Bandura (1989:40) people influence their own motivation by the positive and negative consequences they produce for themselves, in other words and applied to this study what respondents think about generating new knowledge through research influences their motivation to do research. Wanner, Lewis and Gregorio (1981:250) add that publication performance is highly influenced by an individual's motivation and attitude, therefore, respondents were asked about their attitudes and opinions on research.

## 4.9 ATTITUDES AND OPINIONS ON RESEARCH

### 4.9.1 Importance of research

There seems to be a wide understanding among South African and German respondents of the importance of research. The majority of South African (86.67%) and German respondents (94.44%) agreed with the statement that research is essential to generate new knowledge. Furthermore, 85.8% of

South African and 88.2% Germans respondents agreed with the statement that is important to generate new knowledge through research. Nieuowoudt and Wilcocks (2005:63) came to the same conclusion in their study as they state that it is clear that Accounting academics have a positive attitude towards the importance of research.

It also seems as respondents in both countries adapt the change of their workplace from teaching skills to a researched-focused institution (Singh, 2011:1191) as more than two-thirds of South African (64.3%) and German respondents (61.1%) indicated agreement with the statement: 'Every academic at a University should be engaged in research'. German as well as South African respondents seems to understand the contribution higher education research makes to a countrys' economy as 87.50% of German respondents and 80% of South African respondents agreed that a country's economy benefits from research done at higher education instiutitons. This correlates with the essence of a higher education institution by Rossouw (2006:2) who states that a HEI should be an insitution that pursues scientific knowledge trough learning, teaching and research.

### 4.9.2 Teaching versus research

According to Koornhof (2004:7) the combination of teaching and research is the gist of a university and teaching that is divorced from research would rob institutions of their basic impetus. In order to find out how South African and German CMA academics at UoTs and UoAs think about the combination of teaching and research they were asked for their level of agreement to several statements. Figure 4.8 (overleaf) shows the findings by country.

Research and teaching seem to be equally important to 78.57% of South African respondents and 72.22% of German respondents. This is supported by the findings for the statement: 'I am more interested in doing research than participating in teaching activities' as only 16.67% of Germans and 21.43% of South African's agreed.

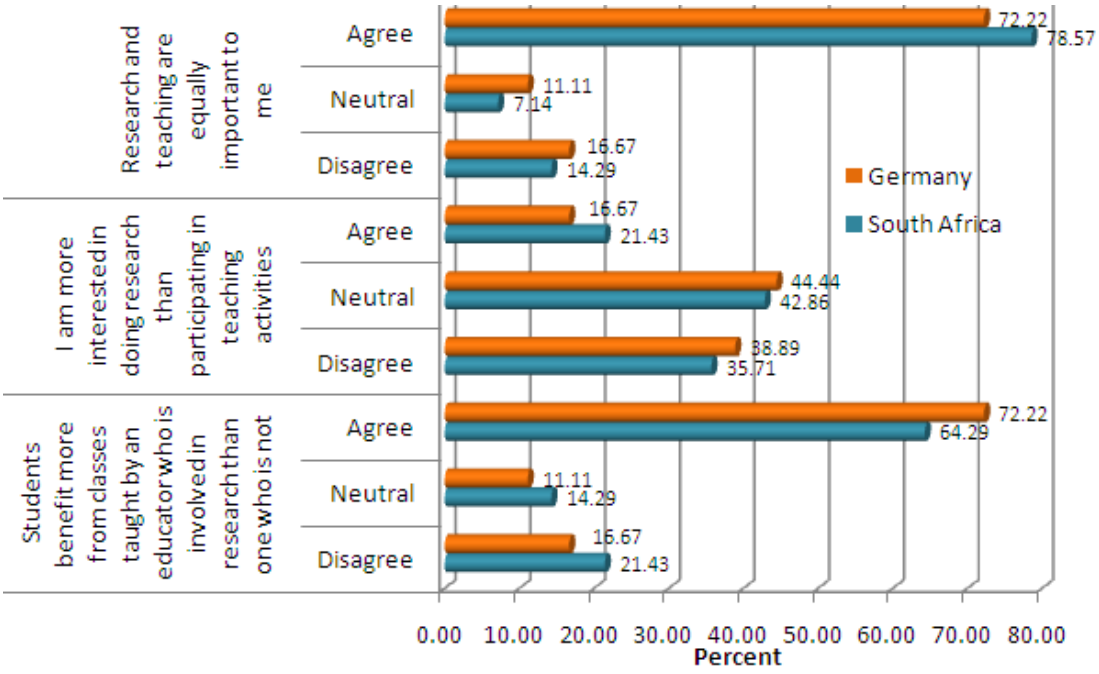


*Figure 4.8: Research vs Teaching*

More than half of the German (72.22%) and South African respondents (64.29%) agreed that students benefit more from classes taught by an educator who is involved in research than one who is not. Half of South African respondents (50%) and a third (33.33%) state that a CMA academic cannot teach without research. Similar percentages (57.14% of South Africans and 33.33% of Germans) also felt that research is necessary to teach in CMA.

### 4.9.3 Research in CMA

There seems to be a thoroughly positive opinion on research in CMA. More than half 64.29 % of South African and 77.78% of German respondents indicated that reading articles published in CMA journals served as inspiration to educators to publish. This reflects on their view that even if one does not publish, it is important to read journal articles with 100% agreement on the German side and 78.60% agreement from the South Africans.

German (64.29%) and South African respondents (70.59%) did not feel that course content in CMA is determined by Accounting standards and therefore

does not require research by indicating disagreement. This is in line with the International Education Standards for Professional Accountants (Internatioal Federation of Accountants, 2003) who require that students that have completed their studies at any Department of Accounting should have research skills and, second, that these students should have been exposed to accounting theory.

Furthermore, it did not seem like the non-negotiability of Accounting standards is a limitation to research as majority of the respondents in South Africa (64.29%) and Germany (77.78%) disagreed with the statement: 'CMA academics do not need to engage in research because Accounting standards are not negotiable'. Research output does not seem restricted by difficulties in finding an area/topic to do research in CMA as 66.67% of the German and 57.14% of the South Africa respondents disagreed with the statement that it is very difficult to find an area/topic to do research in CMA.

## 4.10 SUMMARY

Overall the South African respondents were older than their German counterparts, which is due to different appointment policies. While in Germany the majority had a doctorate and were appointed at a professorial level almost half of the South African respondents were qualified at a level lower than a master's. A shortage of highly qualified academic accountants in South Africa may be responsible for this.

Teaching dominates an academic's workload in both countries. South African's had to deal with more administrative duties than their German counterparts. While South African and German respondents spent equal time on research, German respondents allocated twice as much time to supervision than South Africans.

When it comes to publishing research the South African respondents publish almost twice as much articles than the German respondents in accredited journals due to the South African funding policy. The German respondents

seemed to focus on non-accredited journals, as these are more practice-oriented and relevant for applied research.

Having analysed the results in this chapter, chapter five presents the research conclusions and recommendations.

# CHAPTER 5

# CONCLUSIONS AND RECOMMENDATIONS

South Africa's higher education funding policy aims to strengthen research by providing funding based on research outputs (De Villiers and Steyn, 2009:46). Since higher education institutions are dependent on government funding, every institution and department needs to focus on research production, this embraces UoTs and their CMA departments as well. UoTs with their roots in technical education do not have a strong research culture and there seems to be a lack of South African Accounting research (West, 2006:121). He adds that it seems like South African Accounting academics are underqualified and therefore lack the ability to conduct research.

Given the above, CMA academics at UoTs are required to change their behaviour in terms of focussing their efforts on engagement in research in order to generate funding for their institution.

Change is a real phenomenon, which can be analyzed, conceptualised, encouraged, and facilitated for long-term success (Kritsonis, 2004-2005:1). The Social Cognitive Theory, which underpinned this study explained academics' psychological functioning in terms of the triadic reciprocal interplay of personal factors, environmental events and behaviour (Bandura, 1988:275). Since these three factors influence each other bi-directionally, changes in personal factors and environment will lead to changes in behaviour.

According to Bandura (1988:276), Bandura and Wood (1989:362) and Kritsonis (2004-2005:4-5) the change in personal factors in terms of developing competencies or skills, needs necessary support like: provision of models from which desired behaviour can be observed; positive

reinforcement; incentives; and attention and realistic encouragement. In order to transform these types of support into effective instruments to change behaviour, it is necessary to investigate the status quo. South African CMA academics at UoTs and their German counterparts at UoAs were therefore asked about their attitudes as well as influencing factors on their research activities. The findings of this study revealed that South African CMA academics at UoTs have a positive attitude toward research, indicating awareness on the importance of research production. However, other factors like qualifications, time, and support systems play a significant role in individual's research productivity. Although the surveyed South African academics publish 1.1 articles on average a year in accredited journals and 2.3 articles in total, there is still potential for publication output as almost half of the respondents were qualified at levels lower than a master's.

The study revealed that the surveyed German Accounting academics publish on average half an article more a year than their South African counterparts that is without the background of an intensive funding policy for published research. A possible explanation for the higher research output is the high level of qualifications among the German respondents as 98% were qualified at doctoral level.

Despite differences between South Africa and Germany concerning funding policies and qualification levels it would appear as if academics in both countries are challenged by similar factors influencing their research activities, like time and support systems. These findings are the outcome of investigations which addressed the research objectives.

## 5.2 ACHIEVEMENT OF THE OBJECTIVES

### 5.2.1 Objective one: To ascertain the attitudes and opinions of CMA academics at UoTs in South Africa and at UoAs in Germany on research

An overall positive opinion was stated by respondents on the importance of research as the majority in both countries showed a high level of agreement with questions regarding the necessity for research and the contribution research makes to a country's economy. The findings also revealed that research and teaching complement each other and that they are equally important. Participants thus felt that every academic should be involved in research. Answers to questions on their attitude toward research in CMA also revealed a favourable outcome. The majority in both countries stated that journal articles in CMA serve as inspiration for own research and even if one does not publish, it is important to read articles. Arising from interaction with academics prior to commencing the research, the researcher expected academics to say that they could not pursue master's or doctoral qualifications in CMA/Accounting because of the rigidity of Accounting standards which did not allow for deviations or alterations. Surprisingly, though, respondents said that they did not feel restricted in their research activity by Accounting standards and that they did not experience difficulties in finding a research topic.

### 5.2.2 Objective two: To ascertain the attitudes and opinions of CMA academics at UoTs in South Africa and at UoAs in Germany on obtaining postgraduate qualifications in CMA.

Almost half of the South African respondents were registered for a postgraduate qualification in CMA. Two thirds of these were registered for a Master of Technology degree in CMA. Over half of these respondents, stated that they were driven by personal ambition to register. The above indicates a positive attitude towards obtaining postgraduate qualifications in CMA among South African CMA academics. The problem was that some of the institutions

did not offer doctoral qualifications in CMA/Accounting thus requiring academics to register at other institutions. As many wanted to take advantage of the incentives offered by their institutions they did not pursue qualifications at other institutions. None of the German respondents were registered for a postgraduate qualification as the majority of respondents were already qualified at doctorate level.

### 5.2.3 Objective three: To determine the factors that influence research among CMA academics in SA and Germany.

It was found that research activities of CMA academics in both countries were mostly affected by time. The majority in both countries had less than 20% of their whole workload time available for research. Most negatively affected were the South African respondents who spent time on attending meetings, administrative duties and teaching. German respondents felt that time spent on teaching negatively impacted on their research activities, they also stated administrative duties and attending meetings to a lesser extent had an impact.

South African respondents also indicated that time spent on supervision negatively impacted on their research activities as it left them with less time to focus on their own research. The Germans on the other hand, indicated that supervision contributed to their own research activities as it afforded them the opportunity to co-publish with their students.

Financial factors restricted German CMA academics in terms of their research activities since a third of the respondents stated that there were no financial benefits linked to research and another third indicated that they would do research if they had sufficient funding. South African respondents felt that financial factors enhanced their research. 57.14% indicated that their institution provided generous support for research and 38.14% said they benefitted financially by publishing research.

Research skills or rather the lack of it seemed to influence the research activities of South African respondents as over a third of South African respondents indicated that they would do research if: they knew how; understood the research process; and could write academically.

The study revealed differences among South African and German respondents in terms of the influence of support systems on research. South African respondents felt motivated by a support system at home, by at their institution and by supportive colleagues. The financial incentives, study leave benefits and other rewards offered by their institution were alluring to academics. Colleagues were supportive as research output was a requirement at their institutions and those who were themselves engaged in research, opted to support each other in their research endeavours. Support systems at home centred mainly around family who possibly realised the benefit of research for the academic in terms of job security, financial reward and promotion possibilities. The Germans only felt motivated by supportive colleagues. Possible explanation could be a lack of support systems at their institutions and at home, and because they were intrinsically motivated.

Public recognition which included recognition by their institution and peers through publication influenced German and South African respondents positively as the majority in both countries felt motivated when their articles were accepted for publication, as the rejection rate of most journals is very high. Only the South African respondents were motivated by the chance of being promoted. Personal interest and self-efficacy in terms of engaging in research intrinsically motivated German and South African respondents.

### 5.2.4 Objective four: To determine the effect of the CMA master's program structure/s offered at UoAs in Germany on research.

Respondents were asked about the structure of the master's programme offered at their institutions and whether it develops students' ability to do research. The responses indicated that master's programmes in Germany are course-work based with the completion of a minor dissertation. The

majority of respondents stated that their master's program adequately develops students' ability to conduct research. This was mainly due to the former written Bachelor's dissertation which laid the foundation for research activity in the master's study. The dissertation written for the master's study deepened already existing research skills. The course-work structure at the master's level strengthened research methodology skills already taught at the Bachelor's level.

### 5.2.5 Objective five: To determine the effect of the CMA master's program structure/s offered at UoTs in South Africa on research.

All South African UoTs offer a research based master's which means a master's qualification is obtained by writing a dissertation only. The majority of the respondents indicated that the master's programme offered at their institution adequately develops students' ability to conduct research as they work under very close guidance or supervision from their supervisors. They also stated that course-work based master's do not attract the same amount of funding or subsidy from the Department of Higher Education and Training (DoHET) as the full dissertation does. Institutions were therefore in favour of offering full research based master's and doctoral qualifications.

As in Germany the structure of the master's programmes at South African UoTs did not have a negative effect on research.

## 5.3 LIMITATIONS

This research was conducted at UoAs in Germany and UoTs in South Africa only. It did not embrace other comparable institutions in other countries, like former polytechnics in the United Kingdom or UoTs in Australia for the reasons explained in Chapter One.

An online questionnaire was preferred to a self-administered questionnaire because of the geographical spread of the sample for case of administration, and to reduce cost.

The questionnaire did not ask respondents about financial reward for engaging in supervision but a meeting with CMA academics (after the questionnaire responses were received) at a UoT (which formed part of the sample) conducted by the Executive Dean of the faculty regarding a call for staff to take on supervision duties revealed that supervision was not rewarded financially and that it only added to their workloads. Discussions indicated that they would have been more willing to take on supervision if they were paid per student to do so. A question in this regard could have elicited rich information that would have explained academics' reluctance to take on supervision duties.

The length of the questionnaire perhaps dissuaded many academics from responding. A shorter questionnaire would not have yielded all the data required, but it perhaps would have attracted responses from a more diverse academic population as the researcher is mindful of the fact that many of the respondents appeared to be interested in or engaged in research. Responses from academics who are not registered for postgraduate qualifications or who do not have research outputs to their credit, would likely have yielded a different slant on the findings. The data could have possibly revealed different perspectives to research in CMA/Accounting.

The study was limited to academics supervising/teaching at a master's level in CMA/Accounting. South African academics who supervise doctorate students in CMA were excluded because German UoAs are not allowed to award doctorates. Any significant results emerging from this study therefore may not reflect the situation at all UoTs or UoAs, but will undoubtedly prove useful in beginning to understand and address the issues around research output and productivity in CMA/Accounting.

## 5.4 RECOMMENDATIONS

The recommendations emanating from the research findings are presented below.

### 5.4.1 Upgrading qualification levels

Former investigations, for example those of Nieuwouldt and Wilcocks (2005), West (2006), and van der Schyf (2008) identified inadequate qualifications of Accounting academics as being critical to research. Nieuwouldt and Wilcocks (2005:57) concluded in their study that only doctorates are capable of publishing in locally accredited journals and that same research productivity or output cannot be expected from an educator with only a master's degree. They therefore stated that serious attention should be given to motivating and empowering academics to further their studies in order to obtain a doctorate. While this study acknowledges that the offering of a new qualification, in this case, a doctoral qualification in CMA requires a lot of paperwork and adherence to Quality processes and procedures, it recommends that UoTs recurriculate to offer DTech's in CMA. This would benefit: academics who want to upgrade their qualifications; the institution which would gain qualified academics, and attract funding; and the students who would be taught by highly qualified academics. It would also help the institutions to get the funding or subsidy for doctoral graduates who would otherwise have to register at other institutions.

In this study, the majority of South African CMA academics were qualified at levels lower than a doctorate with 46.7% at levels lower than a master's. Findings also revealed that South African CMA departments at UoTs are aware of their shortage of highly qualified staff and the importance of upgrading qualifications as five out of six UoTs provide incentives for their staff wishing to upgrade their qualifications. The positive reaction of staff to these incentives was reflected in the study's findings regarding higher degree registration among SA academics. Almost half of the South African respondents were registered for a further qualification, mainly for a Master of Technology degree which is offered at UoTs only. This suggests that staff who decided to upgrade their qualification registered at the institution he/she was employed at possibly in order to make use of the incentives offered.

Given the above, it is recommended that CMA departments in South Africa keep or extend their incentives for staff wishing to upgrade their qualifications in order to realise the potential of 86.7% members of staff qualified at levels lower than a doctorate.

The upgrading of qualifications among staff can improve research output in two ways. Firstly, staff that hold a postgraduate degree in CMA are deemed capable to conduct research. Secondly, UoTs could gain greater supervision capacity, thus enabling the institution to enrol more postgraduate students which in turn translates to subsidy for the institution and increased research output through authorship and co-authorship.

It is a given that providing financial incentives and other rewards will only serve to motivate academics to study further. It is therefore recommended that all UoTs develop structured incentives schemes to motivate or encourage staff to register for and complete their master's and doctorates within the minimum period to attract higher funding from the DoHET. The institutions will also have to ensure that the incentive schemes are sustainable. To do this, institutions should build in conditions and clauses to the incentives in the form of a contract between the student and institution. This may ensure that postgraduate students complete their studies in the minimum period.

### 5.4.2 Budgeting for more research time for staff

South African as well as German respondents indicated that there is not enough time available for research. Nieuwouldt and Wilcocks (2005:58) as well as Geertsema and van Niekerk (2009:924) found that time is one of the main limitations to research output. Like Geertsema and van Niekerk's study (2009:924) this study found that in both countries the average time spent on research was only 20 per cent, or even less.

It is therefore recommended that South African CMA departments as well as their German counterparts budget for more research time for staff. Creative time tabling and workload allocation could assist in this regard.

The adoption of the so-called '40:40:20' principle could benefit CMA academics in both countries by providing more uninterrupted time for research activities. The '40:40:20' principle provides for time to be allocated to teaching, research and other duties divided according to the ratio of 40%:40%:20% respectively (Geertsema and van Niekerk, 2009:924). In order to implement the '40:40:20' principle in South African CMA departments it is advisable to reduce administrative duties.

Time for research could also be created by allocating time of staff's weekly workload to research in terms of giving them half a day or a day off per week to focus on research. Workload sharing with other colleagues could be another possibility to free more research time.

The above mentioned suggestions could have impact for human resourcing issues but if HEIs are serious about increasing research output and thereby their subsidies, they will have to budget wisely and discard non profit ventures (to benefit the institution). Institutions' Research Policies should also acknowledge the importance of time as a factor in research activity and output.

Given that South African institutions are transforming to ensure equitable employment opportunities, employing junior lecturers from formerly disadvantaged groups to assist with workload re-allocation, may serve other purposes in terms of research. They could take on research assistant duties which could help to empower them and assist them to become familiar with research activities thus enabling them to upgrade their own qualifications.

Postgraduate students could be 'employed' to take on administrative duties in respect of research. This would have mutual benefit as it would free

academics to focus on their research, and it would assist the students to develop their research skills.

Research funding generated by academics would allow them to employ research assistants. These assistant could assist with data collection and other research duties thus assisting academics to improve their output.

### 5.4.3 Facilitating a platform for peer support

Schulze (2008:650) maintains that research networks with professional colleagues are vital to effective performance and offers researchers new 'thinking' partners. He states further that a researcher who is involved in a social group of learning develops an identity through lived experience of belonging or belonging to a community. Wenger (2000:239) supports that a healthy identity is highly linked to motivation to become a better researcher. The study's findings reflect this view as the majority of South Africans and Germans felt motivated in their research activities by supportive colleagues. It is therefore recommended that CMA departments in South Africa and in Germany facilitate platforms for researchers to engage and support each other. This could be in form of organised, regular meetings of researchers in the same institution, with other institutions, and/or international institutions. These meetings could be used to: strengthen researchers' networks; collaborate on projects, generate new research ideas; engage in research activities; and co-publications. Since isolation is one of the factors associated with the non-completion of a research project (Nieuwouldt and Wilcocks, 2005:63), such meetings could contribute to the improvement of research output.

### 5.4.4 Provision of incentives for Accounting academics at UoAs

The majority of German respondents felt that there is a lack of support systems at their institutions for conducting research and that research does not benefit them financially. Since there is no special research funding policy in Germany (FRG, 2010:22), UoAs and their academics are highly dependent

on third party research funding (Lepori and Kyvik, 2010:304) such as from industry and research institutions. Therefore, incentives schemes and workload reduction for academics in favour of research production are the exception at the surveyed UoAs. Only one institution, namely the Münster UoA states on its website that it rewards research output financially and allows for workload reduction for their academics in order to increase research output. The other institutions' research support and incentives are restricted to the provision of information on research funding opportunities. From interaction with German CMA academics prior to the commencement of this study, it arose that academics did not feel their research activities were adequately and appropriately acknowledged by their institutions. They stated that only in a few did their institutions recognise if one of their academics had published.

This study, therefore recommends that Accounting departments at UoAs increase incentives for staff engaged in research activities. Oher UoAs could follow Münster's example and allocate parts of third party research funding directly to researchers in order to support their research activities and reward output. This would reflect positively on the institutions' research output, as reward systems will have an impact on research productivity (Bonner and Sprinkle, 2002:34).

Sponsorship from industry and funding from government could also be solicited. Industry could reap benefits in terms of highly qualified graduates and government could ensure a highly skilled workforce which in term would strengthen the economy.

Research output could also be increased by the formal acknowledgement of individuals' research endeavors through the award of non-monetary praise. This could be in form of an official announcement of the researcher's achievement at institutions' internal meetings or simply through a verbal praise from HoDs, Deans, or Vice-Chancellors as social persuasions

strengthen individuals' self-beliefs, encourage and empower behavior and thus strengthen academics research endeavors (Pajares, 2002:7).

## 5.5 IMPLICATIONS FOR FURTHER STUDY

Several aspects emerged during the course of this study but were not discussed in detail as they were beyond the scope of this study but are certainly important for further research.

The recommendations above present different approaches to improve the research activities of CMA academics at UoTs and Accounting academics at UoAs, however, it was not possible to consider the individual, specific situation of each CMA department. Decisions regarding what would be applicable to individual departments and institutions are subject to the respective people in charge and require further investigation. It is therefore suggested that further research be conducted in the form of case studies at the different institutions to investigate which approach/approaches would work and benefit the institutions the most.

Since this study revealed time as being a factor for research, investigations into workload re-organisation could enhance research output by gaining more time available for research. This could be done by investigating possibilities of institutions' policy changes in order to incorporate workload re-organisation and the importance and necessity of time available for research. To illustrate the significance, emphasis and importance of research time at institutions, further research could also consider investigating changes in institutions' visions and missions. While it is common for universities to mention international recognition in their mission statements (van der Schyf, 2008) research needs to be firmly anchored in vision and mission. Further investigations could include the level of identification of their academics with the institutions' vision and mission and how the vision and mission could spur and influence goal setting for academics.

In order to build research capacity, further investigations should consider factors that contribute to academics' motivation to register for a further degree and how support systems and incentives could be made available for staff wishing to upgrade their qualifications. Likewise, investigations into academics' motivation to register for a further degree, further investigations should focus on factors that hinder academics to enrol for a postgraduate qualification.

Research tracking the success of cohorts of postgraduate students with strong group support could yield valuable data to increase research activity and output. This should be complemented by a study into differences in success of postgraduate students with and without strong group support.

Research into intrinsic motivators could assist institutions in providing academics with support and developmental workshops.

Study into the provision and impact of research skill-building courses on research productivity could also suite institutions in their endeavour to further increase output.

### 5.6 A FINAL WORD

According to Professor Max Price of the University of Cape Town, universities can be thought of as nodes in global networks of knowledge-creating institutions. A university that does not actively insert itself into these global networks in the areas of research, teaching and exchanges will rapidly slip into the second league (Sunday Times, 2007). To achieve this, Departments of CMA/Accounting must play their role and step up their research activities to enable them to participate in the global research and knowledge arena.

As Benjamin Franklin (1848:50) said, "an investment in knowledge pays the best interest". The South African higher education funding policy provides funding that aims to strengthen research which benefits HEIs who invest in research capacity and academics who engage in knowledge production. The

interest paid on the investment in knowledge does not only benefit academics financially but also develops them into well-read, self confident, successful and knowledgeable individuals which in turn benefits their students, their department and the institution. Knowledge therefore, if wisely invested, pays dividends for all concerned.

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# APPENDICES

## Appendix A – Email to academics at UoTs and UoAs in the sample

Dear Participant

I am studying towards a Master of Technology degree in Cost and Management Accounting at DUT.

The title of my research is:

*Towards improving research among Cost and Management Accounting academics at universities of technology: A study of South Africa and Germany.*

The aim of this study is make recommendations to Cost and Management Accounting (CMA) departments at universities of technology (UoTs) in SA in terms of improving research among CMA academics.

The purpose of this study therefore is to investigate research output among Cost and Management Accounting (CMA) academics at universities of technology (UoTs) in SA and Universities of Applied Sciences (UoAs) in Germany by examining their attitudes, qualifications and structure of their master's programs. To the best of the researcher's knowledge, no studies have been conducted on research output among CMA academics at UoTs in SA and UoAs in Germany.

My permission to conduct research at Durban University of Technology as well as my Ethics Clearance has been granted by the FRC: Faculty of Accounting and Informatics Durban University of Technology in which my study is registered.

In order to get relevant data for my study I would like to conduct a questionnaire to all academic staff in Cost and Management Accounting at universities of technology.

It would be great if you could help me with my research by providing a list containing names and email addresses of academic staff in Cost and Management Accounting from your university.

If you have any questions, please do not hesitate to contact me.

Many thanks

Best regards

Sandra Rosentreter

Student number: 21143655

MTech: Cost and Management Science

Faculty of Accounting and Informatics

Durban University of Technology

## Appendix B – Covering letter

# Towards improving research among Cost and Management Accounting academics at universities of technology: A study of South Africa and Germany.

Dear Participant

I am studying towards a Master of Technology degree in Cost and Management Accounting at the Durban University of Technology. The title of my research is: Towards improving research among South African Cost and Management Accounting academics at universities of technology: A study of South Africa and Germany.

Please complete this questionnaire to enable me to gather data for my research. The information you provide will be kept strictly confidential. Only my research supervisor and I will have access to the completed questionnaires. Please be assured that you will remain completely anonymous throughout the research process and in any reporting or write-ups related to my research.

Please read and complete the following Consent Form.

Thank you for your time and effort.

Ms Sandra Rosentreter
Email: Sandra.Rosentreter87@gmail.com
Student number: 21143655
MTech: Cost and Management Accounting
Faculty of Accounting and Informatics

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## Appendix C – Letter of Informed Consent

# Towards improving research among Cost and Management Accounting academics at universities of technology: A study of South Africa and Germany.

*Required

### CONSENT FORM

Thank you for agreeing to participate in this research study entitled: Towards improving research among Cost and Management Accounting academics at universities of technology: A study of South Africa and Germany.

This research intends to investigate research output among Cost and Management Accounting academics at Universities of Technology in SA and Universities of Applied Sciences in Germany by examining their attitude, qualifications and structure of their master's programs in order to make recommendations to Cost and Management Accounting (CMA) departments at universities of technology in SA in terms of improving research among CMA academics. It is hoped that lessons will be learned from CMA academics in Germany for application in South Africa and vice-versa.

The researcher undertakes to assure you of the following:

- to maintain your confidentiality
- to protect your rights and welfare, i.e to ensure that no harm comes to you as a result of your participation in this research;
- to present information and transcripts used in this research in such a way as to maintain your dignity, and if in doubt to first consult with you; and
- to make available to you the final copy of this research publication.

You are free to withdraw from this research at any time, if the need should arise. No manipulation or withholding of information is involved in this study.

Thank you for volunteering to add to a body of knowledge on improving research among South African Cost and Management Accounting academics.

Yours sincerely

Ms Sandra Rosentreter
Email: Sandra.Rosentreter87@gmail.com
Student number: 21143655
MTech: Cost and Management Accounting
Faculty of Accounting and Informatics
Durban University of Technology

Professor P Singh
Research Supervisor

**Please tick the box below to indicate your consent ***

☐ I HAVE READ THE CONSENT FORM AND HEREBY AGREE TO PARTICIPATE IN THIS STUDY

## Appendix D – Questionnaire

# Towards improving research among Cost and Management Accounting academics at universities of technology: A study of South Africa and Germany.

## SECTION A: BIOGRAPHIGAL DATA

PLEASE ANSWER THIS QUESTIONNAIRE BY TICKING THE CHECKBOXES NEXT TO THE OPTION/S THAT APPLY IN EACH CASE. WHERE YOU SELECT 'OTHER', PLEASE EXPLAIN IN THE SPACE PROVIDED.

**1. Please indicate the name of the University at which you work:**

- ○ Cape Peninsula University of Technology
- ○ Central University of Technology
- ○ Durban University of Technology
- ○ Mangosuthu University of Technology
- ○ Tshwane University of Technology
- ○ Vaal University of Technology

**2. Please indicate your gender:**

- ○ male
- ○ female

**3. Please indicate your age:**

- ○ 20 - 30 years
- ○ 31 - 40 years
- ○ 41 - 50 years
- ○ 51 - 60 years
- ○ 60+ years

**4. Please indicate your job title:**

- ○ Junior Lecturer
- ○ Specialist Instructor
- ○ Lecturer
- ○ Senior Lecturer
- ○ Associate Professor
- ○ Professor
- ○ Senior Professor
- ○ Other:

**5. Please indicate your years of experience in lecturing:**

- ○ Less than 5 years
- ○ 5 - 10 years
- ○ 10 - 15 years
- ○ 15 - 20 years
- ○ More than 20 years

**6. Please indicate your job tasks:**

multiple answers possible

- ☐ Teaching
- ☐ Supervision
- ☐ Research
- ☐ Administration
- ☐ Other:

**7. Please indicate your highest academic qualification in CMA/Accounting:**

- ○ Lower than a master's
- ○ Master's
- ○ Chartered Accountant
- ○ Doctorate
- ○ Other:

**8. Please indicate whether you are presently registered for a postgraduate qualification in CMA or Accouting?**

- ○ Yes (if yes, please proceed to question number 9)
- ○ No (if no, please proceed to the next page, question number 11)

**9. Please indicate what qualification you are presently registered for:**

- ○ Mtech: CMA
- ○ Dtech: CMA
- ○ M.Acc.
- ○ M.Com
- ○ M.Compt.
- ○ D.Acc.
- ○ PhD
- ○ Other:

**10. Please indicate why you registered for a postgraduate qualification:**

- ○ It is a university requirement
- ○ I believe that it enhances my opportunity to be promoted
- ○ It is my personal interest to get a further qualification
- ○ There are financial benefits linked to a postgraduate qualification
- ○ Other:

## SECTION B: ATTITUDES AND OPINIONS ON RESEARCH

PLEASE ANSWER THIS QUESTIONNAIRE BY TICKING THE CHECKBOXES NEXT TO THE OPTION/S THAT APPLY IN EACH CASE. WHERE YOU SELECT 'OTHER', PLEASE EXPLAIN IN THE SPACE PROVIDED.

**11. How important do you consider publishing research in journals?**

| | Very important | Important | Less important | Not important at all |
|---|---|---|---|---|
| Publishing research in journals is... | ○ | ○ | ○ | ○ |

**11.1 Please explain briefly your reason/s for your choice in question 11 above.**

**12. How many journal articles on average do you read in a month?**

**12.1 How many journal articles on average do you read in a year?**

**13. How many articles on average do you publish per year in accredited journals?**

**13.1 Please explain your motivation for publishing in accredited journals.**

- ○ It is a university requirement
- ○ It brings me revenue
- ○ I know my article is good if it's accepted for publication
- ○ It looks very good on my CV
- ○ Publishing in accredited journals is the mark of a good academic
- ○ Other:

**13.2 Please explain the broad area of your research articles.**

- ○ Cost and Management Accounting
- ○ Financial Accounting
- ○ Tax
- ○ Auditing
- ○ Other:

**14. How many articles on average do you publish per year in non-accredited journals?**

**14.1 Please explain your motivation for publishing in non-accredited journals.**

- ○ It brings me revenue
- ○ It is a good way to gain experience on publishing
- ○ There are very few accredited journals that publish research in CMA
- ○ The rejection rate of articles in accredited journals is very high
- ○ Emerging authors' work are seldom accepted for publication in accredited journals
- ○ Other:

**15. Are you the sole author on your publications?**

- ○ Yes (if yes, please proceed to number 16)
- ○ No (if no, please proceed to number 17)
- ○ I don't publish any research (please proceed to number 18)

**16. I publish on my own because:**

- ○ It is difficult to work with others
- ○ Getting others to work with commitment is problematic
- ○ I have tried working with others, but it did not work out
- ○ I have sufficient material to publish on my own
- ○ Sole authorship brings me more revenue
- ○ It is difficult to get academics in CMA interested in collaboration
- ○ Other:

**17. Who do you work with on your publications?**

multiple answers possible

- ☐ Other members of my department
- ☐ My students
- ☐ Colleagues from my institution
- ☐ Colleagues from other institutions
- ☐ My research supervisor
- ☐ Academics from other countries
- ☐ Other:

**17.1 What is your reason/s for publishing with the co-authors in 17 above?**

multiple answers possible

- ☐ It is a university requirement
- ☐ It is a departmental requirement
- ☐ It promotes collegiality.
- ☐ It gives my research credibility to publish with more accomplished authors
- ☐ It introduces my students to the world of publishing
- ☐ Publishing with senior academics gives my work a better chance of being published
- ☐ Publishing with academics from other countries exposes me to new practices
- ☐ Other:

**18. Why don't you do research?**

multiple answers possible

- [ ] Doing research is not part of my job description
- [ ] I am not interested in research
- [ ] My university does not provide any support for research activities
- [ ] Research is not financially worthwhile
- [ ] My teaching workload does not permit me time to do research
- [ ] My administration workload does not permit me time to do research
- [ ] My family commitments do not allow me time to do research
- [ ] I do not see the value of research
- [ ] I believe that a teacher's main responsibility lies within teaching students and
- [ ] I don't know how
- [ ] Other:

**19. Are you engaged in research? (even if you have not published)**

- ( ) Yes (if yes, please proceed to number 19.1)
- ( ) No (if no, please proceed to number 19.2)

**19.1 For what purpose are you doing research?**

(multiple answers possible)

- [ ] It is part of my job description.
- [ ] Teaching is informed by research
- [ ] Doing research gives me personal fulfillment
- [ ] Research keeps me up to date with knowledge
- [ ] I believe that research enhances my ability to be promoted
- [ ] Without research, there can be no education
- [ ] My students can only benefit from my research
- [ ] There are sufficient personal financial benefits linked with research.
- [ ] Other:

**19.2 I would do research if...**

multiple answers possible

- [ ] I knew how
- [ ] I understood the research process
- [ ] I had someone to work with
- [ ] I could find a suitable area/topic to research
- [ ] I could write academically
- [ ] I had support from my university
- [ ] I had sufficient funding
- [ ] Other:

## SECTION C: FACTORS THAT INFLUENCE RESEARCH OUTPUT AMONG CMA ACADEMICS

PLEASE ANSWER THIS QUESTIONNAIRE BY TICKING THE CHECKBOXES NEXT TO THE OPTION/S THAT APPLY IN EACH CASE. WHERE YOU SELECT 'OTHER', PLEASE EXPLAIN IN THE SPACE PROVIDED.

**20. How much time do you have available for research?**

Assuming your whole workload is 100%

- ○ Less than 20%
- ○ 20% - 30%
- ○ 30% - 40%
- ○ More than 40%

**21. What factors affect your research activities positively?**

multiple answers possible

- ☐ Time available for research
- ☐ Teaching
- ☐ Supervision of students
- ☐ Financial implications linked to research
- ☐ Subject-related reading
- ☐ My knowledge of research
- ☐ My knowledge of research processes
- ☐ Research training programs at my tertiary institution
- ☐ The experience gained from the years spent as academic in the field of research
- ☐ Other:

**22. What factors affect your research activities negatively?**

multiple answers possible

- [ ] Time spent in class teaching
- [ ] Supervision of postgraduate students
- [ ] Time spent on administrative responsibilities
- [ ] Time spent on attending meetings
- [ ] Time spent on preparation for teaching
- [ ] My family responsibilities
- [ ] The finding of a suitable research topic in CMA to do research
- [ ] My research skills
- [ ] Available financial ressources to conduct research
- [ ] Other:

**23. Please indicate whether the following factors motivate (++), demotivate (--) or are neutral (++/--) to you to do research.**

| | ++ | -- | ++/-- |
|---|---|---|---|
| The possibility that an article may not be accepted for publication | ○ | ○ | ○ |
| Colleagues who support me in my research endeavours | ○ | ○ | ○ |
| A support system for conducting research at my institution | ○ | ○ | ○ |
| A support system at home | ○ | ○ | ○ |
| Career opportunities | ○ | ○ | ○ |
| Public recognition through publication of my research | ○ | ○ | ○ |
| Being promoted | ○ | ○ | ○ |
| My personal interest in generating knowledge | ○ | ○ | ○ |

**24. Please indicate whether research activities have a postive impact (++), negative (--) impact or no impact ++/-- on the following areas.**

| | ++ | -- | ++/-- |
|---|---|---|---|
| My family responsibilites | ○ | ○ | ○ |
| My personal life | ○ | ○ | ○ |
| My emotions | ○ | ○ | ○ |
| My work | ○ | ○ | ○ |

**PLEASE INDICATE WHETHER YOU STRONGLY DISAGREE (SD), DISAGREE (D), NEUTRAL (N), AGREE (A) OR STRONGLY AGREE (SA) WITH THE FOLLOWING STATEMENTS:**

| | SD | D | N | A | SA |
|---|---|---|---|---|---|
| 25. Research is essential to generate new knowledge | ○ | ○ | ○ | ○ | ○ |
| 26. Research is essential for succesful teaching | ○ | ○ | ○ | ○ | ○ |
| 27. A country's economy benefits from research done at universities | ○ | ○ | ○ | ○ | ○ |
| 28. Students benefit more from classes tought by an educator who is involved in research than one who is not | ○ | ○ | ○ | ○ | ○ |
| 29. I am more interested in doing research than participating in teaching activities | ○ | ○ | ○ | ○ | ○ |
| 30. Research and teaching are equally important to me | ○ | ○ | ○ | ○ | ○ |
| 31. An academic's main responsibility lies with teaching students and not with research | ○ | ○ | ○ | ○ | ○ |

| | | | | | |
|---|---|---|---|---|---|
| 32. Promotion among academics should be based on research output | | | | | |
| 33. Academics should be appointed on the basis of their research output | | | | | |
| 34. It is important to generate new knowledge | | | | | |
| 35. Every academic at a University should be engaged in reserach | | | | | |
| 36. It is right that subsidy for universities is based | | | | | |
| 37. An educator cannot teach without research | | | | | |
| 38. Research is necessary to teach in CMA | | | | | |
| 39. Even if one does not publish, it is important to read journal articles | | | | | |
| 40. The articles published in CMA journals serve as inspiration to educators to publish | | | | | |
| 41. Course content in CMA is determined by Accounting standards and therefore does not require research | | | | | |
| 42. CMA academics do not need to engage in research because Accounting standards are not negotiable | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 43. It is very difficult to find an area/topic to research in CMA | | | | | |
| 44. My department is very supportive of academics doing research | | | | | |
| 45. My university provides generous research support to academics | | | | | |
| 46. Publishing research brings me personal financial benefit | | | | | |
| 47. Publishing research does not benefit me personally in any way | | | | | |
| 48. Being a promoter of master's or doctoral studies enhances my research output | | | | | |

**48.1 Please explain briefly your answer in question 48 above.**

## SECTION E: ATTITUDES AND OPINIONS ON OBTAINING POSTGRADUATE QUALIFICATIONS IN CMA

PLEASE INDICATE WHETHER YOU STRONGLY DISAGREE (SD), DISAGREE (D), NEUTRAL (N), AGREE (A) OR STRONGLY AGREE (SA) WITH THE FOLLOWING STATEMENTS:

**Untitled Question**

| | SD | D | N | A | SA |
|---|---|---|---|---|---|
| 49. A CMA academic should have a minimum of a master's qualification to be appointed to teach in CMA | ○ | ○ | ○ | ○ | ○ |
| 50. There is a demand for a master's qualification in CMA in industry | ○ | ○ | ○ | ○ | ○ |
| 51. There is a demand for a doctorate qualification in CMA in industry | ○ | ○ | ○ | ○ | ○ |
| 52. A qualification as a Chartered Accountant leads to better career options in industry than a postgraduate qualification in CMA | ○ | ○ | ○ | ○ | ○ |
| 53. It is more financially viable for a CMA academic to study to become a chartered accountant than to do a master's or a doctorate in CMA | ○ | ○ | ○ | ○ | ○ |
| 54. Apart from academics, there are no job opportunities for CMA master's or doctorate graduates | ○ | ○ | ○ | ○ | ○ |

| | | | | | |
|---|---|---|---|---|---|
| 55. Academic staff at universities should be appointed on the basis of their qualifications | ○ | ○ | ○ | ○ | ○ |
| 56. The prospect of better earning influences my decision to obtain a postgraduate qualification in CMA | ○ | ○ | ○ | ○ | ○ |
| 57. I believe that a postgraduate qualification in CMA enhances my opportunity to be promoted | ○ | ○ | ○ | ○ | ○ |
| 58. I am employed at a university of technology and therefore do not see the need for me to have a master's or a doctorate | ○ | ○ | ○ | ○ | ○ |
| 59. Traditional universities (only) should offer master's and doctorate qualifications | ○ | ○ | ○ | ○ | ○ |
| 60. Academics at universities of technology should focus on developing technologicals skills and not research skills in their students | ○ | ○ | ○ | ○ | ○ |

## SECTION F: MASTER'S PROGRAM STRUCTURE OFFERED IN CMA

PLEASE ANSWER THIS QUESTIONNAIRE BY TICKING THE CHECKBOXES NEXT TO THE OPTION/S THAT APPLY IN EACH CASE. WHERE YOU SELECT 'OTHER', PLEASE EXPLAIN IN THE SPACE PROVIDED.

**61. How is the master's program in CMA at your university structured?**

- ◯ By dissertation only
- ◯ Coursework-based only
- ◯ Coursework-based with completion of a minor thesis
- ◯ Other:

**62. Please indicate why the offered master's program in CMA is structured in this way.**

- ◯ The structure complies with the demands of industry
- ◯ The structure develops students' research skills
- ◯ The structure enhances further research output
- ◯ The structure gains competitive advantages in comparison to other universities
- ◯ Other:

**63. Please indicate the focus of the master's program curriculum.**

multiple answers possible

- ☐ Problem-solving skills
- ☐ Analytical skills
- ☐ Capacity to plan work
- ☐ Application of research to professional practice
- ☐ Development of reserach capabilities
- ☐ Theory of reserach
- ☐ Collaborative learning
- ☐ Lifelong learning
- ☐ Working indepently
- ☐ Experiential learning
- ☐ Other:

**64. What qualification is mostly in demand in industry?**

- ◯ Chartered Accountant
- ◯ MBA
- ◯ MTech in Cost and Management Accounting
- ◯ DTech in Cost and Management Accounting
- ◯ Other:

**65. Do you think that the master's program in CMA at your institution adequately develops student's ability to do research?**

- ◯ Yes
- ◯ No

**65.1 Please explain your answer from 65 above.**

**66. What do you think is most beneficial to the development of a student's research ability?**

multiple answers possible

- ☐ Completion of a dissertation
- ☐ Attending research skills-building courses
- ☐ Involving students in academic's research activities
- ☐ Offering students research activities on a voluntary basis
- ☐ Other:

**67. How does the master's program offered at your institution develop students' ability to do applied research?**

multiple answers possible

- [ ] Dissertation is completed with a co-operative enterprise, public institution, etc.
- [ ] Dissertation deals with current problems experienced by the institution
- [ ] Virtual problem-solving tasks are given to the students
- [ ] Other:

## SECTION G: COMMENTS

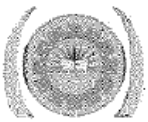
**68. Please add any comments (positive or negative) that you would like make regarding research outputs, qualifications; and/or structure of the master's program in CMA:**

**69. Please add any comments or advice to academics who wish to increase their research output:**

**70. Please indicate your name, email address and/or your contact telephone number if you are willing to participate in an interview. You will only be contacted for an interview if clarity/more information is required regarding your responses on this questionnaire.**

**THANK YOU FOR TAKING THE TIME TO COMPLETE THIS QUESTIONNAIRE.**

## Appendix E – Permission to conduct research



DURBAN
UNIVERSITY of
TECHNOLOGY

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*Fax: 031-3732946*
*E-mail: moyos@dut.ac.za*

16th September 2011

Ms. S. J. Rosentreter
c/o Cost and Management Accounting
Durban University of Technology

Dear Ms. Rosentreter

**PERMISSION TO CONDUCT RESEARCH AT THE DUT**

Your email correspondence dated 3rd September 2011 in respect of the above refers. I am pleased to inform you that the Institutional Research Committee (IRC) will grant permission to you to conduct your research at the Durban University of Technology.

We would be grateful if a summary of your key research findings can be submitted to the IRC on completion of your studies.

Kindest regards.
Yours sincerely

[redacted]

**PROF. S. MOYO**
**DIRECTOR: RESEARCH MANAGEMENT AND DEVELOPMENT (ACTING)**