



IMB Institute of Management Berlin

# Research Output of Management Accounting Academics at Universities of Applied Sciences in Germany and Universities of Technology in South Africa

A Comparative Study of Input Determinants

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Carsten Baumgarth | Gert Bruche |

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RESEARCH PAPER

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## **Abstract:**

German Universities of Applied Sciences and South African Universities of Technology are vocation-oriented higher education institutions with a particular focus on applied research. Due to comparable educational tasks and research focus of the institutions in both countries, this paper presents findings of a study that investigated factors influencing research output of management accounting academics in Germany and South Africa. Academics in both countries showed a positive attitude towards research and obtaining postgraduate qualifications. Findings revealed that time available for research, and institutional support systems, influenced academics in both countries. Although there was only a difference of half a unit in the overall average of published articles between the two countries, there were big differences in the publication of articles in accredited and non-accredited journals.

## **Zusammenfassung:**

Deutsche Fachhochschulen und südafrikanische Universities of Technology sind praxisorientierte Hochschulen, die sich auf Anwendungsforschung konzentrieren. Wegen vergleichbarem Bildungsauftrag und gleichem Forschungsfokus der Institutionen in beiden Ländern, beschäftigt sich dieses Paper mit Einflussfaktoren auf die Forschungsaktivität von Controlling Akademikern in Deutschland und Südafrika. Neben Einflussfaktoren, wie z.B. Zeit, Qualifikationsprofil, Struktur der Masterstudiengänge und der persönlichen Einstellung der Akademiker zum Thema Forschung, wurde die Rolle der staatlichen Forschungsförderung beleuchtet. Die Forschungsaktivität deutscher und südafrikanischer Controlling Akademiker wird von ähnlichen Einflussfaktoren bestimmt. Ein großer Unterschied zeigte sich in den Beiträgen von südafrikanischen und deutschen Akademikern zu akkreditierten und nicht akkreditierten Fachzeitschriften.

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## 1. Introduction

This paper draws on a study that investigated research output of cost and management accounting academics at Universities of Applied Sciences (Fachhochschulen) in Germany and Universities of Technology in South Africa. The New South African Funding Framework (SA, 2004) provides funding to higher education institutions based on research outputs. It is therefore a matter of concern that only a few institutions in South Africa (SA) account for the national research output (De Villiers and Steyn, 2009:43), and that the research output of accountancy academics in South Africa seems 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, being in contrast to the nature of universities. South African 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).

The above also seems to apply to German Universities of Applied Sciences (UoAs) as Lepori and Kyvik (2010:300) confirm that UoAs only account for 4.1% of the total research expenditure in the public higher education sector, thus indicating a low contribution to higher education research. They add that UoAs face challenges to develop research in a context where universities and public research institutes have long established research traditions. Macharzina, Wolf and Rohn (2004:337) tried to evaluate quantitative German research output in business administration which embraces research output in management accounting. They ranked the institutions according to the number of publications in selected journals. They found that not a single UoA was listed among the 101 higher education institutions investigated.

Given the above, this paper investigates the determinants of research output of cost and management accounting academics at German UoAs and SA UoTs, the academics' qualifications, and their quantitative research output. The role of each country's research funding policy on academics' research output has been considered, and other influencing factors on research output such as time, supervision, and support systems have been analysed.

An online-based questionnaire was administered to academic staff in cost and management accounting at four SA UoTs and six German UoAs, of which 35 were returned. In a bid to increase participation, two more academics (from institutions which were already part of the sample) led to an increase in participation by these institutions with 46.7% of South African respondents working for the Durban University of Technology, and 33.3% working for the Berlin School of Economics of Law. While these shares of increased participation could possibly have caused a bias in terms of representation, a significant value for Cronbach's alpha was observed, which indicates a high degree of internal consistency, as well as reliability and validity of this study's results.

The data analysis revealed that time available for research, and institutional support systems influences academics in both countries. SA respondents show a lack of qualifications among their staff which reflects on their research skills and therefore, output. Although there was only a difference of half a unit in the overall average of published articles between the two countries, there were big differences in the publication of articles in accredited and non-accredited journals.

This paper commences with a presentation of the study's background, which is the historical development of SA UoTs and German UoAs. The introduction of the current higher education landscapes and the research funding policy in both countries form the latter part of the study's background. This is followed by a discussion of the research design and methodology employed. Hypotheses underlying this study are illuminated and the most significant findings are presented. This article concludes with a summary and implications for further research.

## **2. Background**

### **2.1. Universities of Applied Sciences and Universities of Technology**

The present German public higher education sector is dominated by three kinds of higher education institutions, namely: universities, Universities of Applied Sciences, and colleges of music, art, or film. There are also special types of German higher education institutions, which are vocational colleges (Berufsakademien). These higher education institutions offer study programs in co-operation with partners in business. The Berlin School of Economics and Law (Hochschule für Wirtschaft und Recht Berlin) has integrated such a vocational college under the Department of Cooperative Studies. In some German states these vocational colleges are granted the status of a University of Applied Sciences.

UoAs are the outcome of the endeavours of the German authorities to deal with a dramatic increase in student numbers in the 1960s (Ash, 2006:254; Onestini and Scheck, 2004:151). On this account, about 100 UoAs were founded (Wolter, 2004:76). This was supposed to unburden the research-oriented universities from the high number of students (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.

Although the UoAs were initially not intended to carry out research, research at UoAs has nowadays been integrated into institutional strategies, and they are explicitly recognised as research actors on a national level (Lepori and Kyvik, 2012:301). Today, UoAs offer application-based research that provides transfer of knowledge and technology to companies (see Sichler and Heimerl, 2012). The development of a research mission at these institutions has been interpreted differently by various authors. Burgess (1972:105) and Neave (1979:134-159) state that the development of research at



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, and state that the development of research at UoAs was driven by the need for improving professional practice in occupations for which universities do not train students. Jongbloed (2010:104) counters that the need to strengthen the role of UoAs as regional knowledge providers was a reason for the development of research at UoAs.

Besides their application-oriented research, UoAs also cater for a more practice-oriented education by offering scientifically-based education, tailored to the demands of professional life (Higher Education, 2013). The German Federal Ministry of Education (Bundesministerium für Bildung und Forschung [BMBF], 2013) explains that UoAs offer a wide range of subjects in the engineering, natural, economic, social, and health sciences.

Similar to Germany, South Africa's higher education landscape is divided into three kinds of higher education institutions, namely universities, Universities of Technology, and comprehensive universities (Council on Higher Education [CHE], 2013).

UoTs have their roots in former technikons. The Department of National Education (South Africa, 1988:22) explains that 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 mid and high-level personnel who possess particular skills and technological and practical knowledge to ensure that they practice their occupation effectively and productively. In an attempt to overcome a complex and discriminatory higher education system, which was a result of more than two decades of apartheid policies, and in order to reduce duplication between institutions closely located to one another, mergers in higher education were introduced in SA's higher education system (Goldman, 2011:38). A merger's meaning embraces the combination of historically disadvantaged institutions with historically advantaged institutions (Wyngaard and Kapp, 2004:186 Hay and Fourie, 2002; see also Habib and Perekh, 2000). Technikons were usually considered a second or third choice after universities, or when membership to international university associations was denied, as technikons were not known as degree-awarding institutions of higher education (CHE, 2010:7-8). This led to a change in designation of technikons to UoTs to enable them to place themselves firmly in the minds of government, industry, parents, and students as regular institutions of higher education (CHE, 2010:8).

Like German UoAs, SA UoTs were never meant to carry out research (Graham, 2002:60), but with the shift in designation from technikon to Institute of Technology and finally to University of Technology, the focus shifted from teaching to applied research, the development of research capacity, postgraduate qualifications, and published research (Singh, 2011:1191). These changes also include the right of UoTs to confer a doctorate, whereas German UoAs are not allowed to award a doctoral degree. Nowadays, UoTs are career-oriented institutions which concentrate on problem-solving in their research and engagement with the community (Backhouse, 2009:3).

Given the above, German UoAs and SA UoTs not only have the same educational task, which is the provision of a career-oriented education, but they also focus on an application-oriented research task. However, comparative studies measuring research output in both countries show a low contribution of German UoAs and SA UoTs to national and international research output.

Chan, Chen, and Cheng (2005), and West (2006) concluded that SA research output in accounting has yet to increase significantly in order to keep up with international research output in the field. SA UoTs in particular seem to occupy the lower ranks when compared to research output of other SA higher education institutions (Singh, 2011; De Villiers and Steyn, 2009). Niewouldt and Wilcock (2005), and Van der Schyf (2008) found that research output in accounting at SA higher education institutions is poor in comparison to research output in other business related disciplines.

Lepori and Kyvik (2010:300) ranked research expenditure in the German higher education sector and found that German UoAs contribute little to German higher education research. Sichler and Heimerl (2012:100) state that research output at UoAs in the social and business sciences has yet to reach the level of research output in the technical disciplines, such as engineering. Macharzina et al. (2004:350-352) showed in their study that UoAs occupy ranks lower than 101 when ranking research output of German higher education institutions according to the number of publications in selected journals in the field of business administration.

## **2.2. Funding research**

The SA and German government try to enhance higher education research by developing different research funding policies.

The German Ministry of Education and Research (FRG, 2010:22) explains that both central and local government have the opportunity to fund German research in their respective areas of responsibility (Wixforth, 2012). 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: The FHprofUnt (FHprofUnt - Forschung an Fachhochschulen mit Unternehmen [FHprofUnt – Research at UoAs in co-operation with enterprises], 2013), ProfilINT (Förderlinie ProfilINT [Funding ProfilINT], 2013), SILQUA-FH (Soziale Innovationen für Lebensqualität im Alter [Social innovations for life quality for the elderly], 2013), and IngenieurNachwuchs (IngenieurNachwuchs [Young engineers], 2013).

Industry is an important player in the German research landscape, with more than two thirds of annual funding invested in research coming from the private sector. These funds are spent both on companies' own research, as well as on joint projects with partners from higher education such as UoAs (FRG, 2010:21).

Jaeger and In der Smitten (2012:40) state that the 16 local governments of the Länder fund their higher education institutions on the basis of a ‘three pillar principle’, where the first pillar provides a fixed amount for running costs and necessary investments for the institution. The second pillar is of a performance-oriented nature and provides funding based on output criteria such as teaching, research, organisation, human resources/diversity, and further education (Jaeger and In der Smitten, 2012:27-28). They explain that it is difficult to determine the extent of funding linked to performance-oriented indicators in the different Länder. Berlin, for example, introduced a performance-oriented funding pillar in 2002 that allocates funds in the areas of teaching (60%), research (20%) and gender equality (20%) (Leszczensky and Orr, 2004). The awarding of the research grant is further determined by internationality, publications, and gender equality (Jaeger and In der Smitten, 2009:9). Funding for publications is allocated according to the ratio of the number of publications to the number of lecturers. A provision for innovations made by the Länder for their higher education institutions completes the three pillar principle.

Different research funding regulations in the German Länder make it difficult to point out a common research funding principle applicable to all UoAs in Germany, whereas the South African research funding policy is very specific and applicable for every type of higher education institution. Higher education research is provided according to a funding formula introduced in 2004 by the Department of Education (South Africa, 2004). Figure 1 illustrates the funding formula.

$$F_{(n)} = \begin{array}{|c|} \hline \text{Teaching Input} \\ \hline \text{Block Grant} \\ \hline \end{array} + \begin{array}{|c|} \hline \text{Teaching Output} \\ \hline \text{Block Grant} \\ \hline \end{array} + \begin{array}{|c|} \hline \text{Research Output} \\ \hline \text{Block Grant} \\ \hline \end{array} + \begin{array}{|c|} \hline \text{Block Grant for} \\ \hline \text{Institutional Factors} \\ \hline \end{array}$$

Figure 1: New funding framework for SA Higher Education Institutions  
 (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 for 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): The lower the research output, the higher the research development grant allocated to these institutions; this is done to bolster research development and output.

### 3. Research methodology

As stated earlier, the aim of this study was to investigate the determinants of research output of cost and management accounting academics at German UoAs and SA UoTs. Based on the above aim and the background of the study, four hypotheses (H) have been established.

H1: Staff at SA UoTs and German UoAs are equally qualified.

H2: SA academics' research output is higher than the German academics' research output because of the supportive SA research funding policy.

H3: Supervision of master's thesis promotes research output of academics in both countries as staff can publish together with students.

H4: There is a shortage of critical research resources such as time and support systems in both countries.

The target population for this study was all academics at UoTs in SA and all UoAs in Germany teaching and/or supervising cost and management accounting at master's level.

This study was conducted in 2011. At the time of the study, a review of the UoAs and UoTs programs revealed that four UoTs in SA and six UoAs in Germany offered master's degrees in cost and management accounting. The sample for this study was confined to specific types of people who could provide the desired information, as they are the only ones who have it and they conformed to set criteria by the researcher (Sekaran, and Bougie, 2009:276). Therefore, purposive sampling was used to identify the academics at the four UoTs in SA and six UoAs in Germany that offer a master's degree in cost and management accounting, so that they could provide the desired information in order to test hypotheses and answer the research question.

Due to the cross cultural nature of this research, two issues had to be addressed, namely response equivalence and timing of data collection. Sekaran and Bougie (2009:219) explain that response equivalence is ensured by adopting uniform data collection procedures in the different cultures. Therefore, the same online-based questionnaire was administered to SA and German academics. As an online survey was used, the timing of data collection was synchronised by sending out the questionnaire to academics in both countries on 3 November 2011. The questionnaire was available in German and English.

In Germany and SA, thirty-five questionnaires were returned. Five questionnaires had to be disregarded, as there were vast sections left unanswered by respondents, or they did not indicate whether they teach/supervise at master's level in cost and management accounting.

One German and one SA academic were involved in the questionnaire administration process. Both academics sent out the link to the questionnaire via email to relevant colleagues, and encouraged potential respondents to participate. Four follow-up e-mails were sent to respondents over a period of three months to remind and encourage them to participate, The fact that two academics from institutions which were part of the sample (namely Durban University of Technology and Berlin School

of Economics and Law) were actively involved in the data collection process reflected 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 for this could be that they wished to maintain anonymity. Data were handed in for analysis by the end of January 2012.

The data was analysed using version 18.0 of the Statistical Package for Social Sciences (SPSS), and a statistician was consulted. Quantitative data were analysed in terms of a descriptive statistic using frequency distribution, cross tabulations, and T-tests. Cronbach's alpha was determined to ensure reliability of this study. As a guideline, it is said that a Cronbach's alpha value above 0.7 is acceptable for research purposes. While the increased participation of two institutions might have biased results in terms of representation, the overall reliability score for this study was 0.855. A content analysis was carried out to analyse qualitative data. Semi-structured interviews were conducted telephonically with respondents where answers were either incomplete, difficult to understand or where further information was required. Only participants, who had indicated on their questionnaire that they were willing to participate in a follow-up interview, and who provided their contact details, could possibly be interviewed. Findings arising from the semi-structured interviews were added to the questionnaire data and analysed accordingly.

## **4. Findings**

### **4.1. Age and qualification level of academics**

As shown in Figure 2, most of the German respondents (80%) were between the ages of 41 and 60 years, whereas a little more than half of the SA 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 SA academics were younger than 31, and 40% were between the ages of 31 to 40.

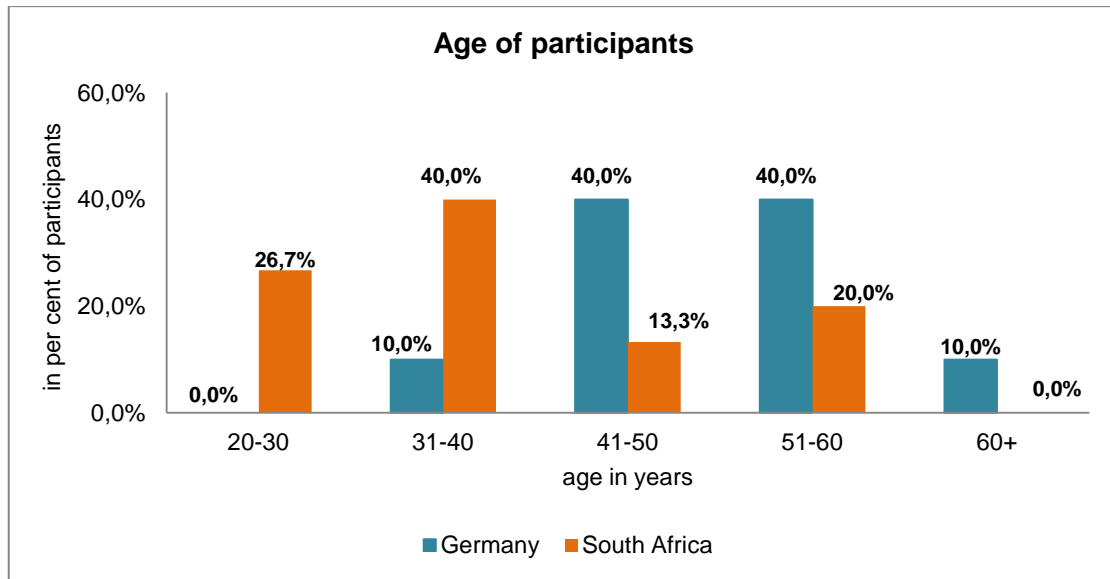


Figure 2: Age of participants

All in all, the SA academics were younger than the Germans. Different appointment policies may explain the difference in the age profile of staff. German UoAs usually require a minimum of a doctorate plus five years of postdoctoral work to be appointed as a full professor (Enders, 2001:10). Historically, the appointment policy of UoTs in South Africa did not require a doctorate. This is supported by the fact that the majority of SA master's graduates (76%) are under the age of 39 (CHE, 2012:14). In 2009, the Department of Higher Education and Training 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 to academics in SA, as there is a massive shortage of highly qualified academics in the field of accounting.

The different appointment policies also reflect on the qualification profile of academics. Figure 3 shows that 85% of German respondents had a doctorate. Almost half (47%) of SA respondents were qualified at levels lower than a master's, another 40% held a master's degree and only 13% held a doctorate.

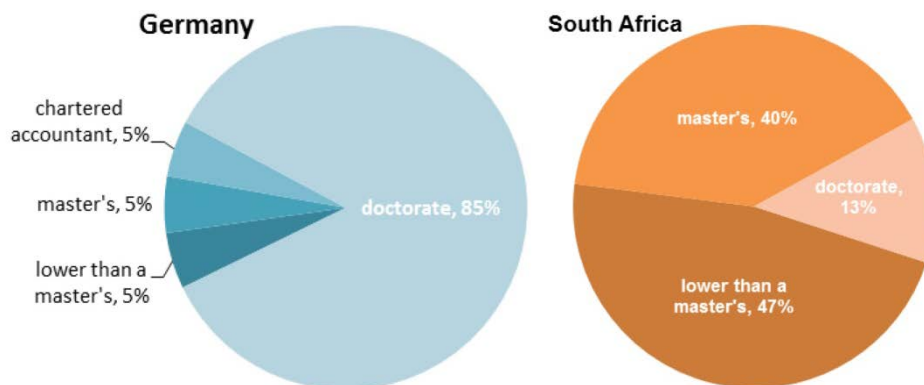


Figure 3: Qualification profile of respondents in Germany and South Africa

Hence, the first hypothesis which stated that academics in both countries are equally qualified could not be maintained. However, almost half (46.7%) of the SA respondents were registered for a postgraduate qualification indicating a movement towards upgrading qualifications among the SA academics.

#### 4.2. Research output

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, 2009:73). Findings of this research revealed that of those SA respondents who engaged in publishing, 2.3 articles per year on average were published in accredited and non-accredited journals. Overall SA respondents published half a unit less than the average of 2.8 articles published by the German respondents. Against the background of the specific SA research funding policy applicable to all UoTs, which provides for funding to be allocated according to a higher education institution's research output, it was assumed that SA cost and management accounting academics at UoTs produce more research output than German cost and management accounting academics at UoAs. As shown in Table 1, hypothesis 2 could not be verified.

	Average publications per year and academic		
	Accredited journals	Non-accredited journals	Overall
Germany	0.7	2.1	2.8
South Africa	1.1	1.2	2.3

Table 1: Quantitative research output

Although there is only a difference of half a unit in the overall average of published articles, there were big differences in the publication of articles in accredited and non-accredited journals. The SA Department of Higher Education published a list of accredited journals (SA, 2004), which includes journals that appear in the ISI indexes, the International Bibliography of Social Sciences (IBSS), and a list of approved SA journals (Department of Higher Education and Training – List of accredited journals, 2013). The researchers applied the same list and metrics (with the exception of the list of SA journals approved by the SA Department of Higher Education) to determine publication in accredited journals for the German academics.

The South Africans publish almost twice as many articles (1.1 units per year) in accredited journals as the Germans who published on average 0.7 units in accredited journals. Figure 4 presents the reasons for publishing in accredited journals as stated by the respondents. 36.4% of the SA and 58.3% of the German respondents indicated that their main motive for publishing was that publishing research in accredited journals was the mark of a good academic. None of the Germans stated that it

is a university requirement or that it brings revenue, whereas 18.2% of the South Africans specified these reasons as their motive. This can be explained by the SA funding policy, since the government drives higher education institutions towards self-sufficiency in terms of income generation through output, and therefore provides subsidy per unit of research output (Singh, 2011:1192; De Villiers and Steyn, 2009:62). Similar percentages of respondents (9.1% SA and 8.3% Germans) thought that publishing in accredited journals looks good on their CV. 16.7% of the German respondents indicated that they thought that their article was good if accepted for publication - none of the South Africans gave this response as a motive for publishing in accredited journals.

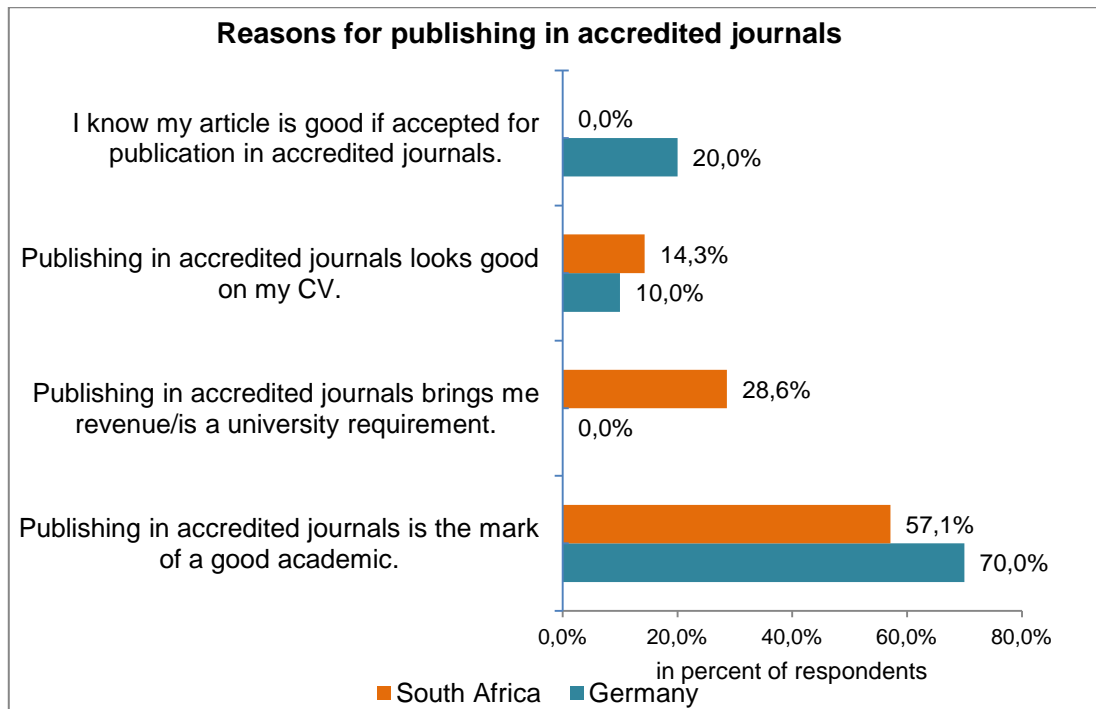


Figure 4: Reasons for publishing in accredited journals

German respondents publish 2.1 units on average per year in non-accredited journals. This is almost twice the amount (on average 1.2 units per year) published by SA 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 answer was not provided as an option on the questionnaire; the 33.3% stated this under the option 'other'. More information on this answer was gathered via the semi-structured interviews. It was found that UoAs focus on applied research, which is mainly relevant to practitioners. According to the interviewees, accredited journals are not read by practitioners, as they are too scientific. Hence, it would be advisable to publish in non-accredited journals, in order to reach the right audience in the field of applied research. Sichler and Heimerl (2012:109) concur, as they suggest that research conducted by UoAs should be published in so-called open-access journals which are less stringent in their methodical requirements but which have a strong emphasis on accessibility for the general public, and thus enable the findings to be



discussed and widely spread. They add that this would eventually allow UoAs to manifest their role as providers of application-oriented research in the higher education sector.

As shown in Figure 5, the majority of the SA respondents (71.4%) thought that publishing in non-accredited journals was a good way to gain experience in publishing. Only 8.3% of the Germans felt the same way. Similar percentages of respondents in SA (14.3%) and Germany (16.7%) indicated that there are only few accredited journals publishing research in cost and management accounting. Therefore, 47.6% of the German respondents did not see a positive outcome of their attempts to publish in accredited journals, as it may only serve to discourage academics from publishing.

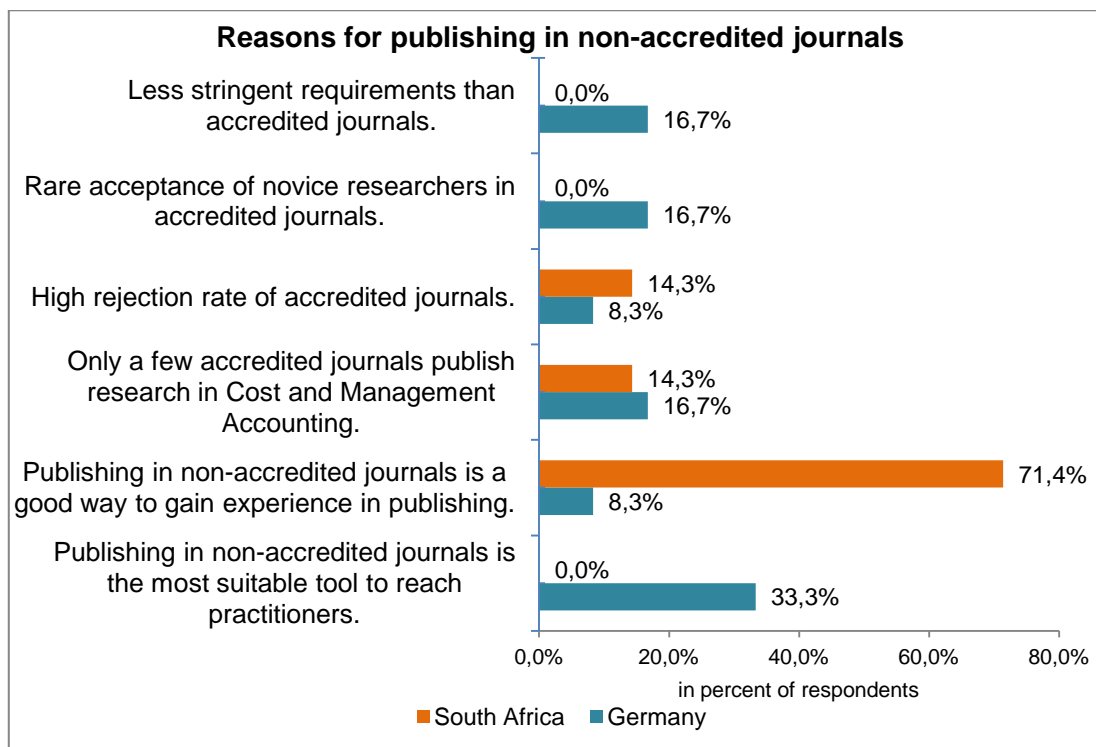


Figure 5: Reasons for publishing in non-accredited journals

### 4.3. Importance of publishing research in journals

In order to determine another influencing factor on research output of cost and management accounting academics, a section of the questionnaire asked respondents how important they considered publishing research in journals. Figure 6 presents the findings.

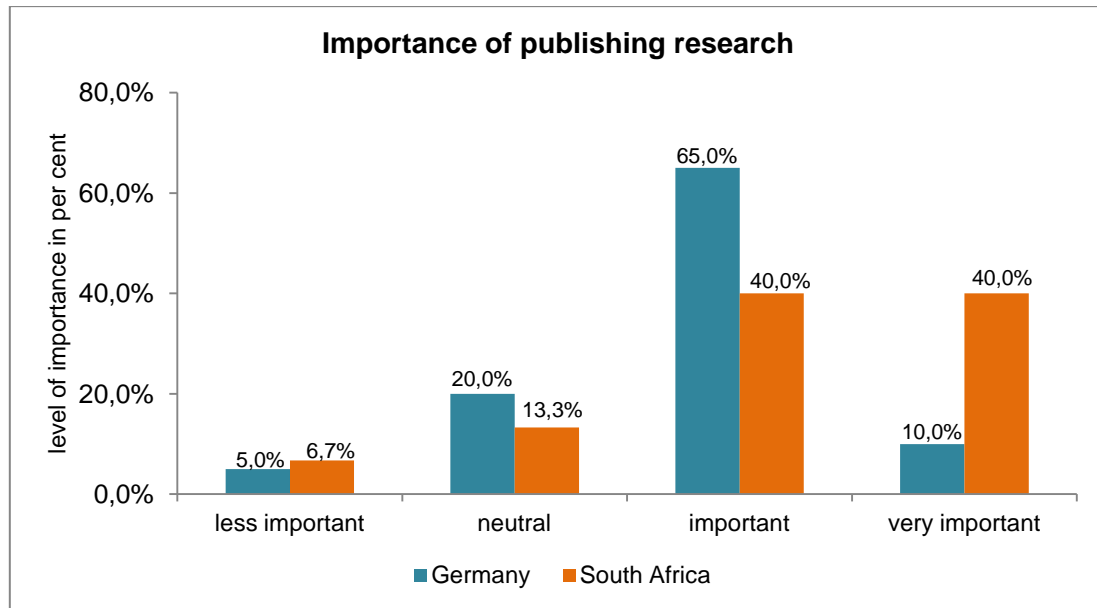


Figure 6: Importance of publishing research

Similar percentages of respondents in both countries (80% SA and 75% Germans) thought that publishing research in journals was important or very important, with similar percentages indicating that it was less important (6.7% of SA and 5% of Germans). The number of South African respondents who considered publishing in journals important, was evenly split between the two 'important' categories (40% important and 40% very important), whereas the Germans showed a different scoring pattern. Almost two-thirds (65%) of the German respondents considered publishing research in journals important and only 10% thought publishing research in journals was very important. 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 into the three following categories: making research visible, fulfillment of the institutional and academic research mission, and earning of financial resources. Table 2 presents the findings.

Answer category	Respondents' country of origin	
	Germany	South Africa
Making research visible	x	x
Fulfilment of the institutional and academic research mission	x	X
Earning of financial resources		X

Table 2: Responses on the choice of importance of research

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 reveal the current state of science. Fulfillment of the institutional and academic research mission: answers stated in this category were mostly short statements made by respondents. Responses include: “academics need to be involved in scholarly work and publishing in research journals”, “it is important for an academic to engage in research and thereafter publish your research”, “we are researchers, we want to be a university (not only a university of technology)”, and “a university has to do research”. It must be noted that this category was only selected by the SA 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 was important to publish research in journals for the fulfilment of the institutional research mission. This correlates with Lepori and Kyvik (2010:301), who state that the German UoA research sector is still in between an experimental phase and the integration of research missions into their institutional strategies.

Earning financial resources was only stated as an important reason for considering publishing research in journals by the SA respondents, which might be due to the SA funding policy, as research articles published in accredited journals attract direct funding in the form of a monetary reward given to the institution. Depending on the policy of the institution, all or a percentage of this money (while the rest is maintained by the institution) is given to the academic, or the said amount is placed in the academics’ research account to be used by the academic for research purposes.

#### **4.4. 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 and attract more funding. However, this requires supervision by adequately qualified and skilled academic staff. One question on the questionnaire asked about 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 SA respondents disagreed with this statement, while only 16.67% of the German respondents disagreed (see Figure 9).

Those Germans who disagreed stated that master’s dissertations are only transferable to research output units in exceptional cases due to their limited quality, as no new insights are gained from these works. They added that it is especially rare that a student work is published in accredited journals. They stated further that the quality of dissertations was better ten years ago. They ascribe the drop in quality to the increase in the number of students they have to supervise. In other words, 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 students. The 38.5% of 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 more you read and the more

you learn in the process and at the end you have more publications as you publish together with them”.

Hypothesis 3 of this study suggested that supervision of master’s thesis promotes research output of academics in both countries as staff can publish together with students. Findings reveal that this hypothesis might be applicable for German respondents rather than for their SA counterparts, as 38.5% of German respondents agreed and 38.5% of SA respondents disagreed with the statement that being a promoter of master’s or doctoral studies enhances their research output. One SA respondent who selected ‘neutral’ explained that “on the one hand, it requires 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”.

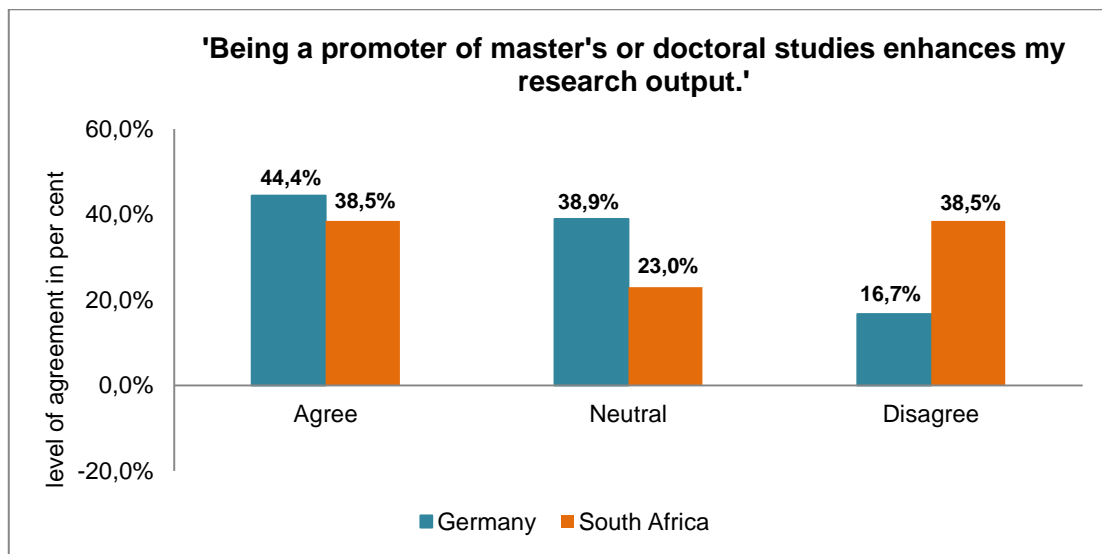


Figure 7: Level of agreement with the statement ‘being a promoter of master’s or doctoral studies enhances my research output’

#### 4.5. Co-operation for publications

Apart from gaining input for their research by supervising postgraduate students, academics might also co-operate with other academics, universities, or institutions to enhance their research output. Almost two thirds (64.7%) of German respondents publish on their own research, which suggests that they have sufficient material to do so. The majority (71.4%) of SA respondents stated that they did not publish on their own research, and hence co-operate for publications. They further indicated that they co-operate mostly with colleagues in the following order, from other institutions, their department and institution, academics from other countries, their research supervisors, and their students. The SA and the German respondents felt that co-operation for publications promotes collegiality, exposes them to new practices, and gives their research more credibility if published with more accomplished authors.

#### 4.6. Other influencing factors on research

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). 20.5% of SA respondents (20.5%) and 20% of German respondents cited that time available for research is the factor that most affects research activity. Respondents were asked how much time they had available for research (assuming their whole workload was 100%). Figure 10 shows that the majority of respondents in both countries (Germany, 79% and SA, 53.3%) have less than 20% of their time available for research.

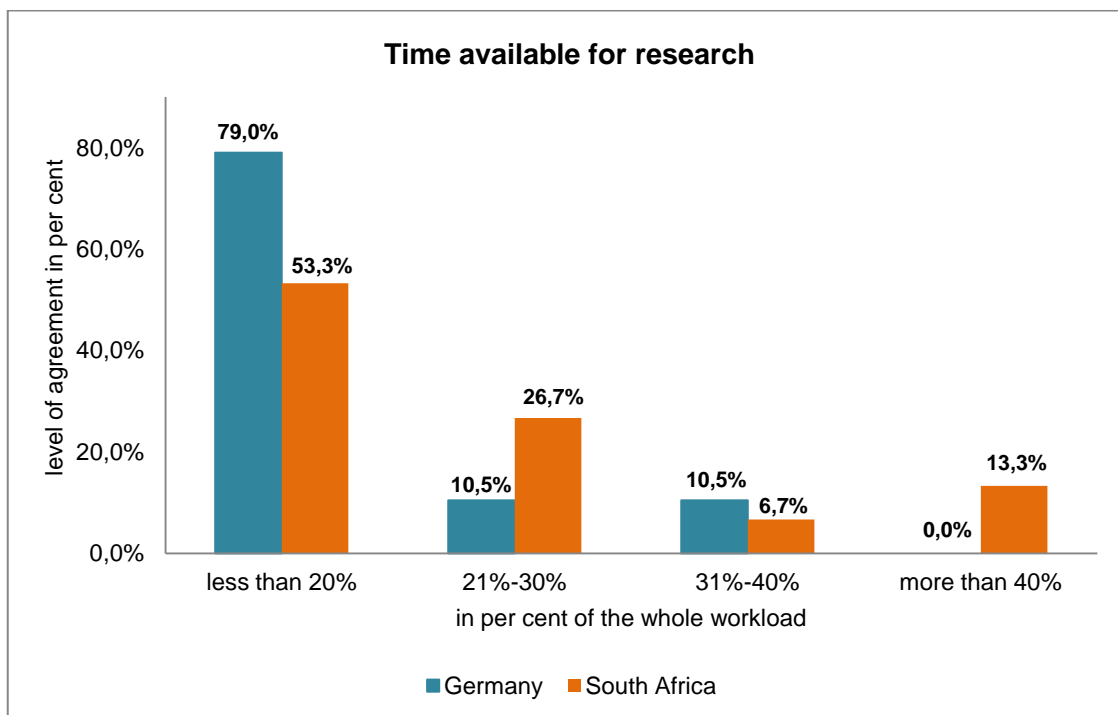


Figure 8: Time available for research

A quarter (25.7%) of German respondents had much less time for research than their SA counterparts. Only 33.34% of the South Africans and 21.06% of the Germans had between 20 to 40% of their time available for research, which would be ideal according to Bland and Schmitz (1986:26).

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 SA accounting academics' perceptions and attitudes regarding research. In response to the statement: 'Publishing research brings me personal financial benefit', 38.5% of the SA respondents agreed and 33.3% of the German respondents disagreed, indicating that there is a lack of financial research support at German UoAs. Moreover, a third of the Germans (33.3%) 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 the lack of financial resources to conduct research. That is in alignment with the study's findings as over two-thirds (68.4%) of the German respondents indicated that a support system for conducting

research at their institution neither motivated nor demotivated them, as they engaged in research out of self-motivation and interest, whereas the majority (85.7%) of SA respondents felt that a support system at their institution had a motivating effect on their research endeavours. SA respondents explained that they were aware of the financial, leave, and other benefits offered by their institution to members of staff engaged in research.

Given the above, this study confirms that there is a shortage of critical research resources such as time and support systems in both countries. Whereas both countries show similar patterns for time available for research, SA respondents felt better supported in their research endeavours by their institution than their German counterparts. Hypothesis 4 could therefore be substantiated.

#### **4.7. Additional findings**

The following section outlines additional findings of the study. Although the information provided did not directly serve to test hypotheses, it provides for a wider understanding of the issues underlying this research paper.

##### **4.7.1. Teaching versus research**

Although there seems to be a wide understanding regarding the importance of publishing research in journals in both countries, academics' workload is also determined by teaching.

In order to find out what the SA and German cost and management accounting academics think about the combination of teaching and research at their institutions, they were asked about their level of agreement to several statements. Figure 7 shows that research and teaching seem to be equally important to 78.6% of SA respondents and 72.2% of German respondents. 44.4% of the German respondents indicated that they were more interested in doing research than participating in teaching activities, while 42.9% of the SA respondents did not indicate a preference for teaching or research, choosing 'neutral' as answering possibility.

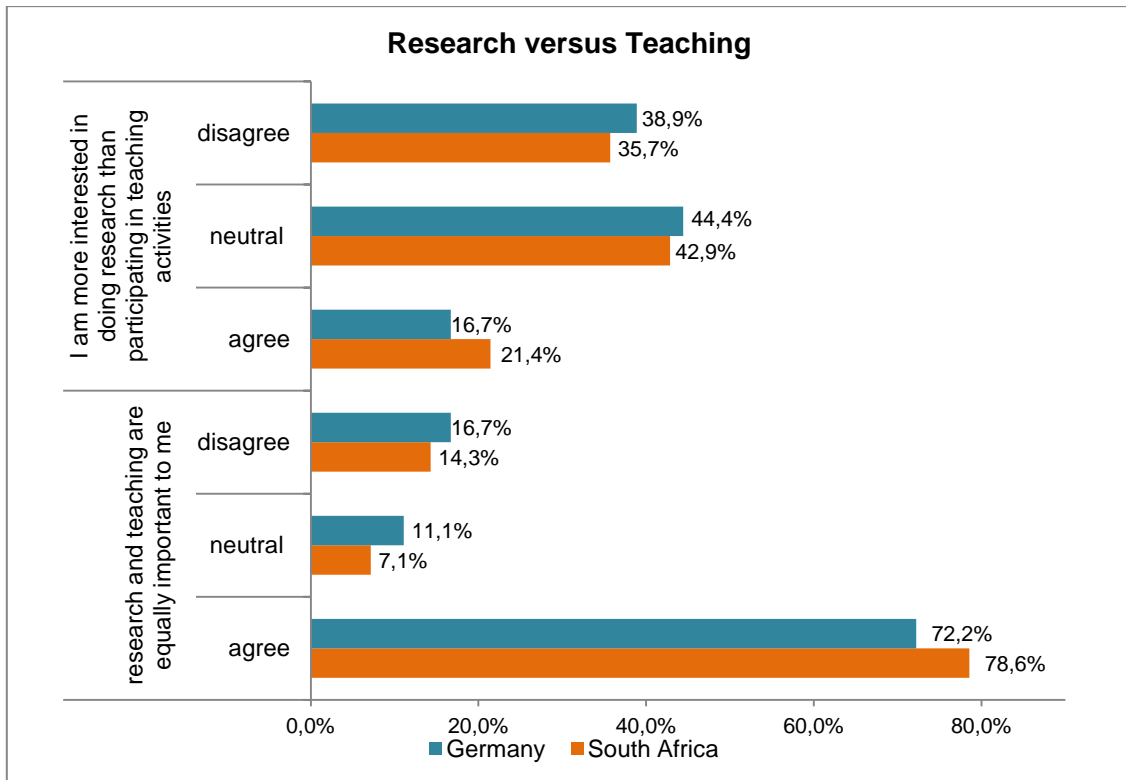


Figure 9: Research versus teaching

#### 4.7.2. Master's program structure

100% of the German respondents indicated that a course-worked based master's with completion of a minor dissertation was the norm in Germany. All of the SA respondents (100%) stated that the master's degree at their institution was obtained by writing a dissertation only. When asked why the offered master's program was 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 South African Higher Education Qualifications 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, and to prepare graduates for advanced and specialised professional employment (South Africa, 2007:27).

Over half of the German respondents (52.9%) indicated that the structure of the master's programs offered at their UoAs complied with the demands of the industry.

Although the purposes of the programs are different, 82.4% of the German and 76% of the SA respondents believe that their master's program adequately develops students' ability to conduct research. When asked in an interview how the master's program develops student's ability to conduct research, the German interviewees stated "the written Bachelor's dissertation lays the foundation for research activity in the master's study". They further stated "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 believed that close guidance of a supervisor and the completion of a dissertation developed students' research ability. This correlates with Drennan and Clark's (2009:484) findings that the completion of a thesis is most beneficial to develop students' research skills. 22.67% of the German respondents share the same opinion as Drennan and Clark. Further findings to the question regarding what is most beneficial to develop students research ability are illustrated in Figure 8.

SA respondents (20%) found that attending research skills building courses are most beneficial to develop students' research ability. The second most beneficial aspect for 21.3% of the Germans and 17.8% of the South Africans is the students' involvement in academic research. South Africans (15.6%) felt that the completion of a dissertation was the third most beneficial aspect for the development of research abilities, whereas the German respondents (12%) rated attending researchskills building courses on rank three.

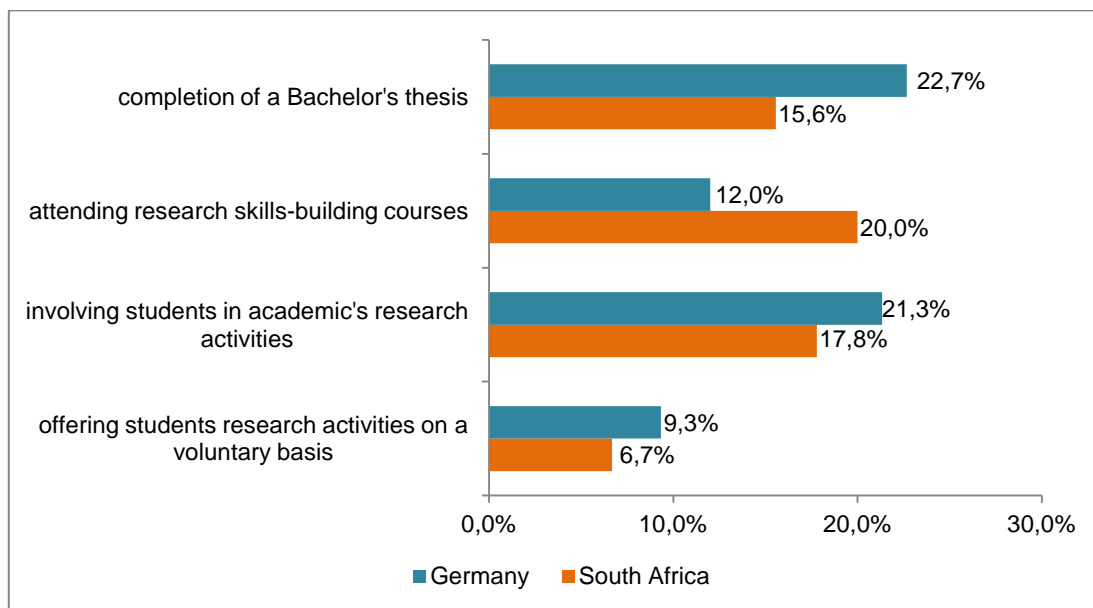


Figure 10: Activities most beneficial for the development of research abilities

Offering research activities on a voluntary basis was not seen as very beneficial for the development of research abilities in both countries, as only 9.3% of the German respondents and 6.7% of the SA respondents chose this answer possibility.

The SA respondents also indicated that research by full dissertation earned a higher subsidy from the Department of Higher Education and Training, as compared to the coursework master's (see SA, 2004).



## 5. Conclusions

German UoAs and SA UoTs are both vocational-oriented higher education institutions that carry out applied research. Despite comparable educational and research tasks, both higher education institutions find themselves placed in different research funding environments. Whereas SA tries to steer towards a research intensive higher education sector by providing for funding to be based on the institutions' research output, there are no research funding laws commonly applicable to all higher education institutions in Germany. Findings of this study revealed that SA's research funding policy led to a higher proportion of publications in accredited journals by cost and management accounting academics at SA UoTs, whereas German cost and management accounting academics at UoAs clearly prefer to publish in non-accredited journals, as they believe that non-accredited journals are the appropriate vehicle to reach their target readers, who are practitioners rather than scientists.

Apart from the difference in the qualification profile of academic staff, UoAs are not allowed to confer a doctorate as opposed to their SA counterparts, and whereas German master's programs are by course-work and the completion of a minor thesis, SA master's programs are by research only. However, research and teaching was considered equally important in both countries.

German respondents felt that supervision of master's students had a positive effect on their research output, while acknowledging that students' work can seldom be transferred to a publication in accredited journals due to the quality of master's dissertations. They also prefer to publish on their own work, as they have sufficient research material. SA respondents were undecided about the effect of supervision on their research output. The majority of SA respondents co-operated with colleagues from other institutions or their own institution for the purposes of publishing.

Time was one of the factors that equally affected German and SA respondents, as academics in both countries claimed that time is critical to their research output and the majority only had less than 20% of their whole working time available for research. However, SA respondents felt better supported in their research endeavours in this regard by their higher education institution than their German counterparts.

Further study into the provision and impact of institutional support on research productivity could benefit institutions in their endeavour to further increase their research output by providing their academics with research funding, a research-friendly working environment, research incentives, and developmental workshops. Since this study revealed time as being a critical factor to research output, 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.

This research was conducted at UoAs in Germany and UoAs in SA only. Further research embracing comparable institutions to the SA UoTs in other countries, like the former polytechnics in the United

Kingdom or the UoTs in Australia, could highlight significant findings which would also shed light on the overall development of the academic systems in different countries.

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