

## **The influence of research collaboration and networking (RECON) on research productivity at an accredited tertiary education institution in South Africa – a case study**

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### **Abstract**

Across the globe, academic staff members of accredited tertiary education institutions are expected to perform tasks pertaining to teaching and learning, research, and community engagement. Particularly in a South African dispensation, research shows that many accredited tertiary education institutions' academic staff members have excessive teaching and learning workloads which, in turn, adversely affect their research productivity – their abilities to publish research outputs (e.g. articles, conference papers, and books). It should be noted that for every accredited research output produced by a South African accredited tertiary education institution, it is entitled to subsidy income from the Department of Higher Education and Training. Regardless of the foregoing, there is a reported decline in research productivity of South African accredited tertiary education institution academic staff members. As such, for this study, the phenomenon of Research Collaboration and Networking (RECON) was explored as an intervention to overcome this problem. Empirical research was conducted through means of mixed-method research from where data were collected from a RECON group attached to the Faculty of Business and Management Sciences at an accredited South African tertiary education institution. Stemming from the results, RECON appeared to have a positive influence on the research productivity of sampled academics; alluding to the recommendation that dedicated time should be allocated for RECON-related tasks on individual teaching and learning timetables of South African accredited tertiary education institutions' academic staff.

**Keywords:** Research, collaboration, networking, South Africa, tertiary education, tertiary education institution, RECON

### **1. Introduction**

In order for a South African tertiary education institution to be accredited, be it a public institution or private institution, it should conform to particular, regulatory criteria (SAQA, 2015; CHE, 2019; DHET, 2019). Once accredited, such an institution has the primary mandate to offer a qualification(s) to eligible students<sup>1</sup> to, in turn, graduate. Fundamentally, the foregoing is realised through the appointment of academic staff members.

South African academic staff members are generally expected to render academic services to those accredited tertiary education institutions who appointed them. More often than not, such academic services pertain to the performing of 1) teaching and learning initiatives (transferring discipline-specific knowledge to students while simultaneously remaining up to date with developments related to a specific discipline), research initiatives (supervising of postgraduate students, conducting

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<sup>1</sup> This depends on the admission criteria of an accredited tertiary education institution.

research and publishing of research) and community engagement initiatives (giving back to community and adding value to immediate-based communities) (Houston et al., 2006; Strydom, 2011; Poalses & Bezuidenhout, 2018). Although all of the foregoing initiatives are important this study emphasised the academic services of research initiatives.

The term 'research' can be viewed as the investigation of a real-life problem through means of a systematic approach(es) with the main intent to better understand it, solve it and/or mitigate it (Ögeyik, 2013; Bruwer, 2019). Once a research study has been completed the general intent is to get it published. The 'publish or perish mantra' that follows South African academic staff members is essentially rooted in the research publishing dispensation (Miller et al., 2011). According to the Department of Higher Education and Training's (DHET's) *Research Outputs Policy*, research that has been published by academic staff members associated with accredited tertiary education institutions, garners research subsidies<sup>2</sup> for such institutions. The policy states the following:

*The purpose of this policy is to encourage research productivity by rewarding quality research output at public higher education institutions. The policy is not intended to measure all output, but to enhance productivity by recognising the major types of research output produced by higher education institutions and further use appropriate proxies to determine the quality of such output (South Africa, 2015).*

Furthermore, in order for academic staff members to be promoted and to develop professionally, the number of research outputs generated is often used as evaluation criteria (Subbaye, 2017; Sadiq et al., 2019). According to Miller et al. (2011) the pressure to publish affects all academic staff members<sup>3</sup>. In some instances academic staff members are also motivated by the prospects of enhancing their professional reputation, leaving a permanent mark on their profession, and increasing their salary and job mobility. Burdened with academic teaching loads, administration responsibilities and community-driven projects, this often leaves little time for research and the writing up of results, let alone publication (Wadesango, 2014).

It is not surprising that South African academic staff members actively request time-off in order to become involved in research initiatives (Snyman & Du Plooy, 2004; Bezuidenhout, 2015). This is especially supported by the increased pressure for South African academics to conduct research over the years, particularly due to national government's limited spending on research and development initiatives - 0.77% of the Gross Domestic Product (GDP) in 2014, and 1.5% of the GDP in 2015 (Campbell, 2017). The efforts of South African academics are evident in a recent 12 year review of academic research and publication in South Africa, where it was found that research productivity in respect of the number of publications stemming from completed research studies increased year on year (South Africa, 2019). Regardless of the latter, established academic staff members responsible for driving research initiatives are aging while younger academic staff members are mostly burdened with substantial teaching and learning workloads and community engagement tasks (Habib & Morrow, 2007). Hence, there is a need to address the problem of potential declines in South African scholarly publications.

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<sup>2</sup> The most recent subsidy per accredited research unit output for 2017/2018 was estimated at R107 222 (CPUT, 2019).

<sup>3</sup> Academic staff members who are appointed on contract are significantly under more pressure to perform in terms of research than those academic staff members who are appointed permanently.

One manner in which research productivity can be enhanced is through means of creating a platform for research collaboration and networking (RECON) for academic staff members across various disciplines (see Section 2). Thus, the main objective of this study read as follows:

*To what extent does RECON influence research productivity of academic staff members attached to the Faculty of Business and Management Sciences of an accredited South African tertiary education institution?*

This paper aims to empirically investigate and illustrate the influence of RECON in an informal RECON group attached to the Faculty of Business and Management Sciences at an accredited South African tertiary education institution. For the remainder of this paper, discussion takes place under the following headings: 1) literature review, 2) research design, methodology and methods, 3) research findings and discussion, 4) recommendations, and 5) conclusion.

## **2. Literature review**

For this section, relevant discussion takes place in order to conceptualise relevant terms (i.e. “research productivity”, “collaborating” and “networking”) and to better understand the inter-relation of these terms in a global dispensation. Therefore, discussion continues under the following sub-headings: 1) research productivity in accredited South African tertiary education institutions, 2) RECON in accredited tertiary education institutions, and 3) the inter-relatedness of research productivity, collaborating and networking.

### **2.1 Research productivity in accredited South African tertiary education institutions**

When placing emphasis on the DHET’s *Research Outputs Policy* the aspect of ‘research integrity’ is highlighted. This term boils down to the fact that completed research which is submitted for publication should be peer-reviewed (by fellow academic staff members), aimed at peers, and contribute to existing bodies of knowledge (South Africa, 2015). Thus, a published research output (e.g. journal article, conference paper and book) that possess research integrity is deemed as an accredited output by the DHET; allowing for affiliated accredited tertiary education institutions to claim research subsidies from the DHET for their academic staff members’ efforts (Habib & Morrow 2007; ASSAF 2018; Tregoning, 2018).

Following suit, the term ‘research productivity’ has to do with the quantitative measurement of research output generation by accredited tertiary education institutions (Barkhuizen & Rothman, 2008; South Africa, 2019). With research productivity being driven by academic staff members of accredited tertiary education institutions, this term can be analogised as the quantitative measurement of the number of accredited research outputs produced by a researcher over a specific period of time. The foregoing term should not be confused with ‘research impact’ with pertains to the number of citations a researcher receives on published research outputs (Abramo & D’Angelo, 2014).

Notwithstanding the foregoing, according to a study conducted by Hu and Gill (2000), it was found that although academic staff members share the need to become more involved with research their respective workloads seldom allow them to actively pursue research initiatives. The foregoing is particularly true in the case in South Africa as teaching and learning initiatives are regarded as the most important tasks of academics (Habib & Morrow, 2007). Alternatively stated the teaching and learning workloads of academics adversely influence their research productivity (Hu & Gill, 2000; Lee & Bozeman 2005; Ukwai et al., 2013). In order to improve the research productivity of academic staff members, RECON may be a possible intervention.

## **2.2 RECON in accredited tertiary education institutions**

Over the past few years, globally, the performing of research initiatives have transformed from a solo-act to a conjunct-approach where RECON is evident (Iglič et al., 2017). This is especially the case since research, while using the conjunct-approach, can generate new knowledge at a rapid pace, generate new ideas to be researched, learn about different perspectives from different people, and enhance the quality of research outputs without overloading individual contributors of research outputs (Adams, 2012; Dong, et al., 2017; Wuchty, et al., 2007). Moreover, a conjunct-approach with regard to research also enhances the research productivity of academic staff members of accredited tertiary education institutions, while simultaneously allowing them to expand their individual curriculum vita's (Bu et al., 2018; Lee & Bozeman, 2005, Petersen, 2015).

Despite the growing interest of RECON (through co-authorship), there are some key practical areas that should be considered. Firstly, Biagioli (2003) postulates that contributor recognition of a research output (co-authorship) is a reward that is not necessarily intrinsically linked to the intellectual contribution of the author. Instead, the reward for contribution is ascribed in some sort of financial capital such as a grant, human capital for example social capital taking the form of being a central node in a new collaborative project (Melin, 2000; Beaver, 2001; Wray, 2002; Biagioli & Galison, 2003; Johari et al., 2012; Huang, 2014; Green & Johnson, 2015). Such a reward is not good enough reason to ascribe co-authorship as a contributor to a research project, however. In quintessence, the main criteria for such a reward is that a potential contributor must have contributed substantially to the conceptualisation, design and analysis of a research output; draft and revise material critically and review and respond to drafts and approve the final version of the research output; and finally, to accept responsibility for the accuracy and integrity of the content found in the research output (ICMJE 2018; Breet et al. 2018).

Using the above as a basis, although RECON is a team effort, it should be noted that such a team consists of individuals with their own motives and agendas which should be accommodated throughout the entire research process. These various backgrounds and motives are important to consider because it may influence and dictate *inter alia* the focus of the research area(s), help eliminate constraints and assist to construct incentives for an ideal outcome (Moss & Kubacki, 2007; Akerlind, 2008; Antelo, 2012; Bridle, et al. 2013). The foregoing also allows for bringing an interdisciplinary approach to research (Leisyte et al., 2008).

Taking into account the social aspect of RECON, it makes sense that research conducted through a conjunct-approach tends to increase researcher reaches<sup>4</sup>, including research productivity (Lee & Bozeman, 2005; Van Rijnsoever & Hessels, 2011; Giudice 2012). Otherwise stated, when it comes to RECON, it is more than just a scientific endeavour; it is a social gathering of specialised minds; an encounter where a group of like-minded people converge on research-related matters for a specific reason(s), in a social setting (Iglič et al., 2017; Zhang et al., 2018). Hence the phenomenon of RECON, if applied correctly, may result in the increasing of research productivity.

### **2.3 The inter-relatedness of research productivity, collaborating and networking**

Huang (2014) states that research collaboration gained scholarly attention during the past few decades. In core, research collaboration places emphasis on the attraction of diverse expertise, the enhancing of creativity and the promotion of innovation while leading to scientific breakthroughs (Wray, 2006; Bammer 2008). The foregoing is justified by the fact that selected HEIs provide incentives for researchers who participate in international collaborative projects (Huang, 2014).

Taking into consideration that research collaboration pertains to social innovation (Bukvova, 2010; Huang, 2014) the analogy can be drawn that it has close ties to networking (i.e. co-authoring). This view is supported by prior research (Ponomariov & Boardman 2016) where it was found that research collaboration is, in fact, that of co-authorship. In addition, Bozeman et al. (2013) elaborate that, within the scholarly literature, the term “co-authorship” is the most frequently used indicator of collaboration. This may be attributable to a formalised shift in the policy-for-science-paradigm, particularly taking into account the preference of funding institutions to, fund groups as opposed to individuals; culminating in experts working together on a particular real-life and/or research problem, to cultivate effectiveness, innovativeness and/or productivity in relation to the research process (Wuchty et al. 2007).

Stemming from the above, clear tangent planes emerge that co-authorship is practised by many researchers with different types of expertise, coming from different economic sectors and/or different disciplines (Block & Keller 2009). This practice may also be attributable for interest in and/or practice of research collaboration in aid of research projects conducted on behalf of sponsors (Guston, 2000). On the contrary, prior to 2010, reported limitations around co-authorship involved not grasping the whole picture of collaboration activities as it appears to rather represent specific types of collaboration that lists the names of collaborators in an article (Katz & Martin 1997; Van Raan, 1998; Laudel 2002). This practice has however been mitigated due to renewed research policies around the globe (Tsai et al., 2016). These arguments include issues around verifiability, dataset stability over time, relatively inexpensive data collection costs, access to large databases of co-authorship records, and ease of measurement of data (Subramanyam, 1983; Katz & Martin, 1997). Partly due to these arguments, co-authorship remains one of the primary measures of collaboration within existing scholarly literature – boiling down to that of RECON.

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<sup>4</sup> The research career of the average academic staff member spans across 20 years (Van Rijnsoever et al., 2008).

### 3. Research design, methodology and methods

This study was empirical in nature, comprised exploratory research and constituted both that of survey research and case study research. In essence, a survey was developed with the main intent to obtain data from participants that were partially quantitative; predominantly qualitative in substance. The survey contained 13 questions of which seven were open-ended (e.g. long answer questions and short answer questions) and five were closed-ended (e.g. multiple choice questions and Likert-scale questions). Using the foregoing as a foundation, this study was deemed as a mixed-methods study which mainly fell within the positivistic research paradigm. Moreover, taking into account that this study entailed the testing of a research question through means of empirical observation, this research was also deductive in nature.

Moreover, this study was conducted from the perspective that RECON between academic staff members in an informal RECON group attached to the Faculty of Business and Management Sciences at an accredited South African tertiary education institution (see Section 1). In layperson's terms, the study pertained to advocating a horizontal research collaborative approach where researchers from different disciplines look for diverse avenues in which to collaborate and explore research areas that relate to core research ideas (Shaikh, 2015), through interdisciplinary collaboration and networking amongst professionals to enhance research productivity, at various levels. To this end, a non-probability sampling method was used, namely that of purposive sampling. Thus, in order for the responses of participants to be regarded as valid, each participant had to adhere to the following delineation criteria:

- Each participant had to be over the age of 18 years.
- Each participant had to be South African.
- Each participant should have been affiliated with an accredited South African tertiary education institution.
- Each participant should have been part of a group where RECON took place.
- Each participant should have been regarded as an academic.
- Each participant should have had at least a NQF-level 8 qualification.

A total of 24 participants were targeted of which 14 responded; translating to a positive response-rate of 58.3%. Moreover, relevant ethical considerations were taken into account which included that participants were safeguarded from physical harm, participants were able to partake in the study in a comfortable and safe space, participants provided their informed consent prior to voluntarily participating in the study, participants were guaranteed anonymity, the information of participants was guaranteed to be treated with the highest levels of confidentiality and participants could have withdrawn from the study at any point, without reason, without being discriminated against.

### 4. Research findings, results and discussion

Although all participants adhered to the delineation criteria, a summary of the non-apparent demographical information of participants are shown in Table 1.

**Table 1:** Summary of delineation criteria of participants (Source: Authors' own source)

Demographical aspect	Summary
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Highest qualification	21.4% of participants had an NQF-level 8 qualification as highest qualification, 57.2% had an NQF-level 9 qualification as highest qualification and 21.4% had an NQF-level 10 qualification as highest qualification.
Discipline of focus	43.0% of participants were Tourism and Event Management focused, 21.4% were Sport Management focused, 7.1% was Agriculture focused, 7.1% was Business Information and Administration focused, 7.1% was Accounting focused, 14.3% were Social Science focused

Next, participants were asked to rate their research productivity by means of a 5-point Likert scale (1 = very low, 2 = low, 3 = average, 4 = high and 5 = very high). Stemming from the results 35.7% of participants answered “very low”, 14.4% answered “low”, 35.7% answered “average”, 7.1% answered “high” and 7.1% answered very high. The answers provided by participants rendered a mean-score of 3.64 – translating to an average answer residing between “average” and “high”. For clarity, participants were asked to explain their answers provided. These explanations are shown in Table 2 – corresponding to the answers provided by participants.

**Table 2:** Summary of delineation criteria of participants (Source: Authors’ own source)

Rating of research productivity	Summary
Very low	<p>Participant A stated that he/she has only published two accredited articles in his/her academic career.</p> <p>Participant B stated that due to work obligations, limited progress has been made with regard to his/her research-related activities.</p> <p>Participant C stated that his/her area of expertise makes it difficult to produce research outputs on an annual basis.</p> <p>Participant D stated that as the focus is placed on completing his/her thesis to attain an NQF-level 10 qualification, there is no time to focus on the generation of any other research outputs.</p> <p>Participant M stated that he/she has not yet delivered anything in relation to research outputs yet.</p>
Low	<p>Participant E stated that he/she is only returning to research after being out of it for a few years.</p>
Average	<p>Participant F stated that he/she completed his/her NQF-level 9 qualification in 2017, produced two research outputs for two international conferences in 2018 and 2019 and started with his/her NQF-level 10 qualification in 2019.</p> <p>Participant G stated that he/she has produced approximately two research outputs per year however he/she felt like he/she could publish at least three to four if more time is dedicated to research.</p> <p>Participant H stated that there was a change of life circumstances which resulted in the reduction of his/her research output generation.</p> <p>Participant I stated that he/she would like to have more research outputs.</p> <p>Participant L stated that he/she recently submitted his/her master’s thesis.</p> <p>Participant N stated that he/she is publishing non-accredited output</p>





	<p>particularly from a motivational perspective and other technical aspects such as research methodology.</p> <p>Participant E stated that discussions that take place during RECON sessions motivate and provide him/her with knowledge and enlighten him/her on the obstacles that other people experience with research in general. To him/her, it there is an atmosphere of research enthusiasm and it is interesting to see how each individual handles their own research in their own unique way.</p> <p>Participant F stated that it helped him/her to decide on his/her NQF-level 10 qualification's title and to do this qualification as five articles (article based research). It also allowed him/her to find out how other researchers approach their work in terms of timelines and research populations.</p> <p>Participant G stated that it is refreshing to hear and share different topics and discuss challenges and more importantly to learn from each other and share tips on how to overcome certain things. This group has inspired and motivated him/her to meet deadlines and opened up the opportunity to collaborate with colleagues.</p> <p>Participant H stated that the enthusiasm and creativity of fellow-members are contagious and encouraging to him/her.</p> <p>Participant I stated that advice and guidance from other researchers as well as accountability assisted him/her greatly.</p> <p>Participant J stated that research can easily be an isolated activity and a rollercoaster ride. By listening to members of the Recon group, he/she does not feel alone and abnormal. From his/her perspective, RECON fulfils a basic need to belong.</p> <p>Participant K stated that RECON sessions are unique platforms where one can motivate others to do research while also remaining motivated to continue to do research.</p> <p>Participant L stated that RECON sessions inspired and motivated him/her while he/she also obtained valuable advice from fellow other researchers; learning from others' experiences and frustrations.</p> <p>Participant M stated that RECON sessions stimulated him/her to think more in terms of research and talk in terms of research.</p> <p>Participant N stated that he/she ask better questions when he/she reads – content shared added value to his/her life.</p>
No	Participant C stated that he/she is a new member of the RECON group.

Using the justifications of Table 3 as a foundation, it becomes apparent that the group where RECON takes place did allow for participants to be motivated, to learn and to grow as researchers in an enabling environment. The foregoing is supported by a word cloud from respondents' verbatim responses, as shown in Figure 2.



*The RECON is open for participants in research. Therefore if this initiative is implemented at different universities internationally, it will create a platform where even more research can be done. The RECON is an excellent opportunity to invite people to join and network and build academic relationships to also see how research is conducted at different universities and at different levels. My answer is definitely YES! This can be implemented with seminars and conferences as well” (Participant E)*

*“All members are giving their inputs on what works and what does not work, this allows members to openly discuss matters of common concerns and how to overcome research obstacles. Networking takes place at each RECON meeting and members come from different educational fields and can thus provide good advice and information can cross certain barriers, e.g. tourism and agriculture can see how the information can be used in both fields of study” (Participant F)*

*“There is indeed an opportunity to collaborate with peers from different perspectives and research interests through various projects. RECON has brought in people from various backgrounds and industry/ academic experience who have the same research interests. Hence ideas are shared that one does not really consider when one is not exposed to such people on a regular basis” (Participant G).*

*“As long as members have a shared interest, focus and feel rewarded for collaborating they will continue to do so. A platform is provided for people of different academic fields to meet and share. This type of networking rarely happens in academia” (Participant H).*

*“Different professionals and perspectives assist in research and the opening of your mind. We get to meet up in a relaxed environment and feel comfortable enough to share ideas with no judgement but rather support” (Participant I)*

*“RECON provided the platform to talk about 'research' as if it is a common concept and not some or other foreign, difficult term that only Doctors or Professors use. By collaborating, sharing feelings, stories, progress (or the lack thereof) combined with a tranquil setting, a cup of coffee and an atmosphere where Doctor or Professor degrees are not the minimum requirements and we are all people who want to make a difference across various disciplines, one feels 'part of', positive and motivated to show progress. The interesting part of RECON is networking with industry as well as other institutions, as it provides a platform to discuss differences, learn from one another, identify areas where gaps can be filled between education, research and industry and where many creative, but also innovative, ideas are formed” (Participant J)*

*“At RECON, a lot of ideas and resources are shared among members, all with the intent to encourage improvement in research productivity. An array of guests (international and national) has been invited to RECON to share their experiences with regard to research. Moreover, RECON allows for learning about other people beyond one's normal area of focus. This allows for the broadening of one's own horizons and the opening of one's mind” (Participant K)*

*“RECON has added value not only to my work life but also to my research endeavours as well as on a social level” (Participant L)*

The views of respondents are summarised through means of a word cloud, as shown in Figure 3.



**Figure 3:** Word cloud of respondents’ verbatim responses pertaining to whether RECON takes place in the informal RECON group (Source: Authors’ own source).

Lastly, participants were asked whether collaborating and networking, within the group where RECON takes place, improved their research productivity. To do this, participants were asked to rate their agreement with two statements through a 5-point Likert scale was used (1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree and 5 = strongly agree). Each statement started with the base sentence: “My research productivity improved due to ...” A summary of the results appears in Table 4.

**Table 4:** Justification for the reason provided on whether the RECON group assisted with the participants’ research productivity (Source: Authors’ own source)

Statement	Summary
Collaboration experienced at RECON	50.0% strongly agreed, 28.6% agreed, and 21.4% neither agreed or disagreed (calculated mean-score of 4.3).
Networking experienced at RECON	42.9% strongly agreed, 42.9% agreed, and 14.3% neither agreed or disagreed (calculated mean-score of 4.3).

## 5. Recommendations

To be done later

## 6. Conclusion

To be done later

**Comment [B1]:** I would like to ask that the following people tackle this section after reading the above:

Frik (Lead)  
Janice  
Ilanza  
Andries  
Nadia

May I ask that this is completed by 28 June 2019?

**Comment [B2]:** I would like to ask that the following people tackle this section after the recommendation section has been completed:

Candice (lead)  
Mardine  
Teneille  
Christel  
Anton  
Chris

I should have the final version of the recommendations ready and collated in the paper by 30 June 2019.

May I ask that this is completed by 15 July 2019?

Once this is done, I shall write the abstract of the paper, from where I will disseminate it to ALL co-authors for their review.

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