Research Collaboration: Enhancing the Research Skills and Self-Confidence of Early Career Academics

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Abstract: An academic's career development chiefly depends on research and publication performance. For young academics, support and guidance are needed to help with the transition to new work culture and practices in the early phase of their career. This study intended to explore the benefits of research collaboration activities in relation to young academics' knowledge, skills, and personal development. A total of 15 young academics from one research university with each having less than five years of work experience selected using purposive sampling. In-depth interviews were used to collect data. The data transcribed and analyzed using thematic analysis. The findings revealed that research collaboration activities have substantial impact on young academics in updating their research knowledge and skills, and this subsequently caused them to be more confident with their ability to manage research independently. Collaboration activities also have remarkable impact on young academics' generic skills development and psychological wellbeing, increase young academics' self-confidence, to reduce isolation as well as overcome the problem of low performance. Based on the findings, it is suggested that collaborative working culture is promoted and enhanced by universities as a practical platform for young academics to continue upgrading their knowledge and skills.

Keywords: Performance, Research Collaboration, University, Young Academics

1.   Introduction

In a performance-driven culture, producing high-impact scholarly output has become the strategic goals of many universities to maintain their research excellence. The "productivity culture" focusing on performance affects by globalization, rankings, and competitiveness (Abramo & D'Angelo, 2011; Kenny, 2018). According to Elizabeth and Grant (2013), even though the roles of academics comprise three main activities, namely teaching, research, and service, the primary attention appears to be on the amount of research grants obtained locally and internationally by academics, the numbers of articles published in high-impact journals, and the number of citations. In this respect, productivity-oriented model has intensified the focus on research output, research dissemination and research utilization. It has become a strong predictor of career development (Sutherland, 2018).

Indeed, a fair amount of research has examined the way early career academics' (ECAs) adapt and respond to the requirements of research and publication (Kerry et al., 2020). According to Hemmings (2012), an early career academic is an academic who is in their early years of service or who is within their first five years of work as academics; however, the definition varies considerably according to countries. In light of the competitive demands, the capacity of ECAs to adjust and adapt

to new work realities and expectations is therefore desirable. Even though ECAs have attained certain levels of training in conducting research, it is important to emphasize that it was carried out under the supervision and support of a supervisor or research community. The transition from student to academics requires that ECAs shift from being a dependent researcher to an independent researcher (Laudel & Gläser, 2008). As such, ECAs need to develop various facets of skills related to research and publication such as skills of writing competitive research grant proposals that meet the expectations and demands of the funding agency, manages the research, reporting and supervising research, writing major works and disseminating the findings effectively. Various variables interact and shape an ECA's learning and development, and one of it is engaging with an experienced researcher (Hollywood et al., 2020). The nature of collaboration and collegiality attained through various types of collaborative and group relations brings together unique resources and generates meaningful learning as well as improves understanding. Many studies recognize the value of collaboration as a way of fostering research activities, exchange of resources and self-development for ECAs (Aprile et al., 2020; Garcia-Sánchez et al., 2019; Smith, 2017). This line of thinking is congruent with early ideas of Poole and Bornholt (1998), who advocate that procedural know-how is needed in the early stages of an academic's career and that various experts need to be sourced not only to provide information but also to model practice.

Although there is a considerable number of studies conducted on research collaboration activities among academics, only a limited number have focused on ECAs' perspectives of collaboration and how it enables and enhances their research performance and publication. This kind of research is particularly pertinent in the context of Malaysian universities, especially when academics in Malaysia are often classified as under-represented in high-ranking journal publications. It is importance to build young academics' research competencies at the early stage as this would enable them to be effectively embedded in the academic culture and enhance the young academics' talents. Specific information on young academics is vital for universities in both managing and supporting the group of young talents. Therefore, to address this gap in the literature, the study examined the following questions: 1) How do research collaboration activities improve ECAs' research knowledge and skills? and; 2) How do research collaboration activities improve ECAs' self-confidence in research and publication?

2.   Academic Research Collaboration

In general, collaboration can be defined as a joint effort by different individuals in different types of activities and interactions to achieve mutually desired outcomes. Lattuca and Creamer (2005), defined collaboration as "social inquiry practice that promotes learning" (p.7) ranging from giving advice to working closely together. In research activities, collaboration may be conceived as a key factor to obtain desired outcomes through sharing of resources and knowledge. Within the university, collaboration as structured socialisation process among different researchers from different disciplines, skills, knowledge, and expertise work together and exchange research ideas in order to accomplish the research projects (Bozeman et al., 2013; Cooke & Hilton, 2015; Lewis et al., 2012). In this context, the expertise of several researchers is brought together to achieve common goals which difficult to be accomplished by a single individual.

Collaborative activities among academics can be established between members of the same department, at the inter-university level, between a university and research institutes, or between a university and industries (Kyvik & Reymert, 2017; Landry et al., 1996). The relationship which is established either at the national or international level depends on the objectives of the research, the problem under investigation and the research outcomes (Katz & Martin, 1997). As an example, research collaboration within university mainly involves cooperation among academics from the same faculty or other faculties within the same university. This group of research is normally funded by the university's internal funding sources. In contrast, collaboration between universities involved membership of academic from different universities, and these collaborative activities are mainly built based on a collegiate network or good working relationship between academics who share the same research interest.

2.1 Benefits of Research Collaboration

The benefits of research collaboration activities are well attested in the literature (Bazeley, 2003; Hemmings, 2012; Kyvik & Reymert, 2017). This experience is not only perceived as an opportunity for ECAs to socialize in scientific thinking and practices but is also seen as a way of promoting meaningful learning experiences, establishing the academics' identity, and increasing motivation and self-confidence (Muda & Fook, 2020; Su & Baird, 2017; Thomas et al., 2015). The following section focuses on two main benefits of research collaboration activities for ECAs, namely research skills and self-confidence.

A strong basis in research is one of the key requirements for academics to remain competitive in research activities. Collaboration provides opportunity for ECAs to learn from more experienced and expert researchers in specific research projects. This idea aligns well with the social constructivist paradigm, particularly in terms of the value of scaffolding and peer support (Bruner, 1996). Collaboration and teamwork in research activities involve several phases including preparing the proposal, analyzing the research issues comprehensively, identifying the distinct problems, and developing the research objectives in line with the purpose of the research grants and funding agency as well as defining accurate methodology to implement the research. Furthermore, at the project execution level, all members collaborate to collect and analyze the data, determine the findings, and finally publish the outcomes. The fundamental impact of this developmental process is that it would help to increase the academics' ability to carry out high quality research and produce high quality articles which have significant impact on knowledge development in the specific fields that is beneficial and of value to the society in general (Kyvik & Reymert, 2017). Within this process, learning how to write high quality research proposals according to the guidelines and evaluation criteria stated by the funders is important. Novelty, originality, and the contribution of the research outcomes are the most crucial elements especially in highly competitive funding. This is an enormous challenge for ECAs because at this stage of their career, their knowledge base is still comparatively little, and most of the time, they are still lacking in experience, and critical reflection and evaluation of the current issues within the specific disciplines (Supramaniam, Razak, & Arumugam, 2020; Sutherland, 2018).

Collaborative activities not only promote transfer of scientific and technical knowledge, but also enhance ECAs' publication skills where they get to learn the process of preparing, writing, submitting, and revising research manuscripts collectively. According to Viale (2010), early-career academics are more eager to engage in collaborative research because of career pressure to publish. Expressing a similar notion, Schmoch and Schubert (2008), stated that collaboration with international counterparts for research and publication is more impactful. This is due to the fact that scientific publications with international scholars have high citation potential compared to locally co-authored publications. Despite the development of technical skills, there has been an increase in attention on soft skills development through collaborative process. The inquiry and mutual learning process promotes enrichment of soft skills such as team-working skills, effective communication skills, critical thinking and problem-solving skills as well as planning and organizing skills. Both technical and soft skills are particularly critical in developing the research capacity of ECAs as these would aid them in their capabilities to generate, apply and adapt to new research. In summary, interaction and engagement of ECAs' with expert and experienced researcher help to form research-related behavior, thoughts and attitude.

Moreover, collaboration in small research group have significant effect on self-confidence. Self-confidence is an important psychological construct that affects an individual's belief about themselves. A positive relationship between self-confidence and research performance is well supported by the literature (Hemmings 2012; Hemmings, 2015; Hemmings & Ray, 2010). For ECAs, building self-confidence in their research ability at the early stage of their career is important for long term success. Thus, engaging ECAs in research projects from the beginning will help to instil confidence and get them to master new knowledge and skills related to research. The lack of exposure, will lead them to self-doubt their ability and may lead to feeling uncertainty and of isolation (Belkhir et al., 2019; Malik & Björkqvist, 2021).). The interconnections between the constructs of confidence and success are best described within the theoretical framework of Bandura's Social Cognitive Theory. Bandura (1997), described self-efficacy as the "belief one has in being able to execute a specific task successfull1y" (p174). According to Bandura (1997), an effective way to develop self-confidence is

through mastery or learning vicariously through modelling or observing others perform a task, in this case doing research (Hemmings, 2015). Working within a nurturing environment, with frequent guidance and encouragement from senior lecturer is essential for confidence-building research behaviors to develop among the ECAs (Debowski, 2012; Sutherland & Petersen, 2010). Having such relationships would successfully help the ECAs master specific skills or knowledge in research through direct and indirect learning where they can develop their capacity to perform research tasks in the future and become autonomous researchers.

3.   Methodology

In this study, a generic exploratory qualitative research design was employed to guide the research. This research paradigm was selected because it allowed the collection of detailed description of the participants' perceptions of reality, through their voices (Crotty, 1998). The participants involved in this study were ECAs who were between one to five years of service in their career. This selection aligned well with the definition of ECAs within the Malaysian context where ECAs are described as those having less than five years of service after completing their doctoral studies (Adi Badiozaman, 2020). Participants with experience concerning the issues under investigation who openly volunteered to participate were recruited through purposive and snowball sampling. A total of 15 participants that include both six males and nine female ECAs from one research university and from a range of disciplines agreed to participate in this study. Each participant was emailed and contacted to explain about the purpose of the study and the procedures of data collection, together with the consent form. Data were gathered through semi-structured interviews. This method allowed the participants to offer rich, detailed, and reflective accounts of their own experience (Rubin & Rubin, 2012). At the same time, it gave the researcher the flexibility to probe for details into particular experiences or perceptions. Interview questions were developed to assess the ECAs' perceptions and experience of engaging in research collaboration as well as the perceived benefits associated with research skills and self-confidence development. All interviews were recorded digitally and then transcribed verbatim. Each interview lasted between 40 to 60 minutes.

The interview transcripts were analysed using the thematic analysis approach to identify and generate common themes across the participants. For this study, data analysis focused toward identifying participants' experience in research collaboration in relation to two main aspects, namely research skills and self-confidence. Thematic analysis enables meaningful interpretation and discussion of data to gain insight and deeper understanding of the case under study. Data analysis was manually performed following the four-phase thematic analysis approach suggested by Miles and Huberman (1994). The four phases included (a) carrying out a preliminary analysis of data by reading through the transcripts and notes and writing memos; (b) coding the transcripts by segmenting and highlighting the text; (c) using the codes to develop larger themes by assembling similar codes; and (d) connecting and interrelating the emerging themes. Additionally, several methods were used to ensure and support the trustworthiness of the data. First, member-check was conducted by sharing the interview transcripts with the participants, where they were asked to provide feedback and make any clarification they wished to include. Secondly, the themes and subthemes were reviewed by peers in the same field. Peer examination was used to ensure that the codes represent the interview data.

4.   Findings

The findings presented in this section illustrate the participants' experiences of being engaged in various research collaboration activities within their own institutions and at the inter-university level. The themes generated from the data are categorized and presented in two main themes, namely enhancing research skills and building self-confidence. Direct quotes were used within each theme to represent the views of the ECAs in connection to their collaborative research experiences.

Enhancing Research Skills

The opportunity to work with more experienced researchers was perceived by the participants as an efficient way of adding their research capacity value. All participants in this study brought with them a significant level of research knowledge and skills that were developed during their doctoral study. One of the key concerns shared by the participants is related to the experience of preparing research proposals. Based on the participants' experience, the research group is normally formed when academics plan to apply a particular research project grant or funding. Each member with different expertise in content and method would work collectively preparing a research proposal to meet the goals and expectations of the funding agency. According to the participants, the brainstorming sessions helped them to understand how to identify the right issues, how the proposed topic which fill the knowledge gaps, potential impact and solution and also which methods match best. More importantly, the sessions helped them realize the desirability for researchers to portray novelty values in their research. As shared by participant 5:

> "… *there are techniques to write a winning research proposal … some of the tips shared by my research project leader is, I need to make my idea feasible, realistic and practical to the stakeholder also well-thought methodologies are important. It is also important to emphasize the expected outcomes which would convince the fund provider*" [**Participant 5**]

Finding suitable ideas and then turning them into a clearly communicated research proposal is considered a valuable experience; moreover, participants felt that it is difficult to develop this skill if they were to work independently. The participants mostly agreed that through this sharing process, they have clearer directions on how to write an effective research grant proposal that meets the expectations of specific grant and funding agencies. Every research grant has its own guidelines and objectives that need to be fulfilled. Therefore, skills in writing an impactful research proposal is vital especially when the competition to secure research grants is very tough.

Another theme that emerged from the analysis is related to managing research. One key point shared by most of the participants is managing research within the time frame given by the funder. Each research project has a definite beginning and ending date; therefore, the researcher's ability to plan activities in logical and concise manner within the timeline help guide the execution of the research project. According to participant 11:

> "…*through this learning process I began to understand the importance to planned a comprehensive research timeline, because it acts as a mechanism to track the work progress. You need to allocate adequate time to each research activities. So you can complete it on time*" [**Participant 11**]

In this respect, a well-planned research project should demonstrate the researchers' ability to be fully immersed in the field, to put forward their expertise and to have a collective work spirit to complete the project in a successful manner. For novice researcher with limited research experiences, guidance from expert researcher are importance specially to rationalize each of the phase of the research process from the beginning to final submission. In this context, an effective leadership is essential for the success of research projects. The quality of output reflects the credibility of the head of the research project and also the quality of teamwork. Based on the findings, the participants highlighted several key behaviors of a good research leader such as offering an exemplary model in terms of content knowledge and research knowledge in the field, emphasizing teamwork, and motivating team members to produce excellent outcomes. The following quote from participant three expresses his view about the importance of leadership skills for the head of a research project:

> "…*involvement in a research project gives me the opportunity to learn and observe how a project leader manage projects systematically, divide tasks based in each member's expertise, create harmonious relationship between members and respects views and*

opinion of each members" [**Participants 15**]

Similarly, another participant said she was impressed with the capability of her project leader in terms of mentoring and facilitating other members in the team:

"…*the charismatics values of my project leader can be clearly seen from the way she guided us along throughout the research project...where she always share her broad disciplinary knowledge in the field*" [**Participants 7**]

Based on the above findings, it is clear that the empowering behavior of the project leader will influence the engagement and involvement of the other members in the research activities. The participants prefer to have a leader who can be a mentor. In this context, the social interdependence process mainly depends on openness and tolerance, and all the participants agreed that the key in the whole process is feeling free to discuss and give ideas without any judgement. As participant 11 said:

"… *I like it when I am free to give views, and team members give a positive response to my opinion and take into account my ideas*" [**Participant 11**]

An emotionally safe environment certainly encourages the participants to get involved and express their views. The importance of a nurturing environment is also highlighted by participant 8 who said:

"*I enjoy working in a non-hierarchical environment … even though there are senior professors in our research team, we interact as a small family and we are close to each other… this relation is very helpful*" [**Participant 8**]

Another important sub-theme identified under this theme is the process of communicating and disseminating research outcomes. One of the primary focus of many researcher is to share their findings through publication in high impact journal. In this context of study, participants indirectly learn from more experienced writers, each of the steps of the article publication process. Even though, most of the participants already familiar with the publication process but not many of them had experienced writing collaborative multi-authored papers. Through this process, they experienced on how to delegates task and workload in writing, each author roles and responsibilities. As participant 9 said;

"*The opportunity to write with more experienced academics member help me to refine my writing skills, in terms the accuracy and clarity. I feel more confidence when I know my weaknesses and able to find solution by getting guidance from other team member*" [**Participants 9**]

The participants agreed that gaining access to real writing process helped the participants to be engaged in and acquire the specific traits of high-quality scientific writing, which would become an asset for them in the future.

Building Self-confidence

Gaining the confidence in performing research-related activities is crucial for early career development, and such confidence is not easy to achieve if they were to work individually. This is evident in this study where all the participants agreed that the collaborative research activities helped boost their self-confidence. The following analysis addresses several factors associated with the participants' self-confidence in performing research-related activities, namely experiential learning, feedback, support, and role model. Active engagement in the research process is considered an important experiential learning for all the participants in this study. They agreed that being engaged in real research settings helped them to get a bigger picture of the research process and how each member in the research team functions collectively to accomplish the specific goals. As participant 14 commented:

"*Through this research project, I gained an in-depth understanding of how a research project is managed from the beginning until a complete report is produced*" [**Participant 14**]

The early exposure gained through the collaborative activities is valuable as it would help the ECAs to be more prepared to systematically manage their own research projects. Through this experiential learning process, they also discover new learning opportunity such as to experience new ways of collecting data during field work. According to some participants this has broadened their research experience, especially when it is new different from what they specialized in during their doctoral study. One participant shared his experience of having to do research in an unfamiliar field:

"*The experience of collecting data among the indigenous community is an incredible experience for me… it is not only a new experience in terms of the methods used to collect data… but what makes me even more excited is by ability to conduct the research successfully* " [**Participant 5**]

In this case, the experiential learning not only require the participants to adjust themselves to the new research context, but also the ability to apply their knowledge skills to collect data effectively. In a different example, one participant shared her experience of preparing a manuscript for an article. Collaborative writing with multiple authors is considered an additional experience especially in defining each researcher's contribution and role in the article, and how everyone's voice and thinking can be merged together to produce a good quality article. As she explained:

"*…each of us has our way of thinking and writing style…but at some point we need to find ways to collaborate together and find coherency in our thinking*". [**Participant 13**]

All the participants were of the same opinion that the opportunity to work closely with researchers who have highly reputable research and publications under their guidance is a privilege. Specifically, these senior researchers are seen as a role model and a good exemplar in terms of producing good quality research. According to the participants, as a result of their participation in these research collaboration projects, they already have several senior academics that they can seek for guidance and consult for help on anything related to research or guidance and strategic plans for their career paths, and more importantly, on how to maintain a healthy work life balance. For example, one female participant commented:

"*…opportunity to work with the Professor is not just about improving my research skills, but it is the best opportunity to learn how they succeeded. I asked her how she can be an excellent scholar in teaching and research…and at the same time can balance work and personal life…*"[**Participant 1**]

Furthermore, the results from the analysis show the importance of constructive feedback in building the participant's self-confidence, improve their thoughts and behavior. Analysis revealed that several aspects were highlighted by the participants in relation to the benefits of feedback such as improving their thinking, self-reflection and refining their writing. Firstly, the participants felt that feedback has great impact in enhancing their thinking skills. According to the participants, the research process itself involves a series of discussion that usually begins with the early stage of proposal development to the stage of presenting and preparing the reports. The participants explained that throughout the process of discussion and discourse, they received feedback from different perspectives which not only helped to improve the quality of their work, but more importantly, develop their thinking skills to be more critical. As participant 12 shared:

"*…through the series of presentations and scholarly discussions during research workshops, I received many positive feedback from fellow researchers on my work. Even though you think you did well, but the feedback I received and I heard from other team*

member made me realize the importance of being critical when present an information,
how to interpret the data critically and make connections with the research objectives".
[**Participant 12**]

The participants also shared the feedback they received on writing, whether in terms of preparing the final report or when preparing the research manuscripts. All the feedback received were taken positively by the participants and were used to critically evaluate themselves in terms of the skills needed to enhance their knowledge and skills. Without a doubt, the positive feedback has favorable effects on the participants' motivation and self-confidence which are positively associated with self-improvement. Findings from the analysis showed that the research collaboration activities helped the participants to expand the availability and accessibility of research experience.

5.   Discussion

The findings presented in this paper illustrate the experience of a group of young academics who participated in research collaboration activities in one university in Malaysia. The results of this qualitative study support the view of other scholars where collaboration is seen as an important practice in every scientific field (Bozeman et al., 2013). Working in a strong collective environment substantially helps young academics familiarizing themselves with the multifaceted knowledge and skills expected of academics is important for ECAs to be effectively immersed in research and publication activities (Bhakta & Boeren, 2016). The participants believe that research skills developed at the doctoral level are certainly valuable; however, they also begin to recognize that basic skills are not enough to meet the expectations and demands of research grants and funding agencies. Thus, the readiness to learn new research approach is perceived as important. Therefore, continuous learning, training with strong support, and encouragement from senior academics are critical in facilitating the transition from novice researcher to expert researcher. Findings from this study provide additional empirical evidence that young academics prefer to work collectively compared to previous studies that claimed young academics prefer to work individually and isolate themselves (Hardwick, 2005; Sivak & Yudkevicch, 2015). The findings of this study emphasize the importance of strengthening the system to support the early career academics in adjusting to the new work environments and familiarizing themselves with the research culture in universities. Early engagement in scientific-research activity allows participants to practice existing skills, and engage with scholars with different perspectives, knowledge, and skills on research.

The nature of research activities at university is largely determined by the availability of research funding. Each young researcher has the potential, ability and skills needed to conduct research. However, their talents often fail to be manifested because of the intense competition to secure research grants and the lack of experience in writing research proposals that meet the expectations and requirements of grant funders. According to Bailey (1999), the lack of experience and success rate in applying for research grants contributes to low levels of research self-efficacy. Therefore, involvement and taking part in the research project help them to learn how to write winning proposals as it is perceived as being absolutely vital. This finding highlight the significant impact of experiential-based learning that fosters the participants' immersion and active participation in research activities. In this context, constructive feedback from experienced members is seen as an opportunity by the young researchers to self-assess their strengths and overcome their weaknesses (Lee & Bozeman, 2005). An open dialogue and a non-hierarchical relationship empowered young academic as they free to shared their opinion and not being negatively judged by others. These results are in line with the finding of Acker & Webber (2017), in which positive feedback is linked to an accurate self-evaluation of an individual's performance in research. Another important aspect within the research process is the dissemination of research findings (Nicholas et al., 2017). The participants agreed that their participation in research groups helped them to improve their scientific writing, especially with regard to articles for high-impact journals. Gaining access to real writing process helped the participants to be engaged in and acquire the specific traits of high-quality scientific writing, which would become an asset for them in the future. Although the participants have some skills and experience in scientific writing, they still need support, guidance, and ongoing consultation with more experienced academics

in order to build their research and writing competencies. Many participants expressed the importance of working with experienced and prolific scholars. This is because through the collaborative writing process, they are presented with opportunities that would not have otherwise been possible if they had worked alone. In, overall, the collaborative indirectly increased their motivation and enhancing self-confidence to engaged in research. Therefore, opening opportunity for young academics to involved in research project, would help to overcome young academics' fear of not performing well (Smith, 2017), having low self-confidence to meet the expectations of the university (Hemmings, 2012) and feeling lost and isolated (Gravett & Petersen, 2007).

6.   Conclusion

This study has highlighted the importance of research collaboration activities in enhancing young academics' research productivity. In performance-oriented contexts, productivity in research and publication has become a key indicator of ECAs' career progress. Thus, universities should ensure that their ECAs are fully supported during the early years by creating collaborative research culture and by fully exploiting their ECAs' talents and potentials to meet the expectations of the university in research and publication activities. Effective collaboration has been proven to build ECAs' research capabilities and increase their self-confidence. The continuous learning process that provides appropriate stimulus, support, encouragement, and guidance are necessary for young academics to acquire expertise more readily, and thereby excel in their profession. Future research should examine other forms of research collaboration such as informal research collaboration through peer network in exchanging information and knowledge related to research. This includes the use of social media as a platform for research engagement so that better understanding and insights can be gained in the area. This suggestion is made based on the evidence that young academics are more likely to work within less hierarchical structures. Therefore, more in-depth research through the use of case study and focus group research method should be conducted to study selected groups of young academics to examine how the more skilled and knowledgeable young academics play their role in supporting and guiding one another in research activities. Additionally, to better quantify and identify the effects of research collaboration, further research of the quantitative type should be conducted on a larger scale to obtain more evidence and extend understanding of research collaboration activities among young academics. More robust study in this area would assist universities in identifying the best practices and approach to be implemented so that mentoring through research collaboration activities within and between universities can be enhanced and supported.

7.   Co-Author Contribution

The authors affirmed that there is no conflict of interest in this article. Author1 carried out the fieldwork, prepared the literature review and overlook the write up of the whole article. Author 2 wrote the research methodology and did the data entry. Author 3 carried out the qualitative analysis and interpretation of the results.

8.   Acknowledgements

9.   References

Abramo, G., D'Angelo, C.A., Di Costa, F. (2011). Research Productivity: Are Higher Academic Ranks More Productive than Lower Ones?. *Scientometrics, 88*(3), 915-928.

Acker, S., & Webber, M. (2017). Made to measure: Early career academics in the Canadian university workplace. *Higher Education Research & Development, 36*(3), 541-554.

Aprile, K.T., Ellem, P., & Lole, L. (2020). Publish, perish, or pursue? Early career academics' perspectives on demands for research productivity in regional universities. *Higher Education Research & Development*. 1–15. doi10.1080/07294360.2020.1804334.

Bandura, A. (1997). *The exercise of control*. New York: W. H. Freeman.

Bozeman, B., Fay, D., & Slade, C. P. (2013). Research collaboration in universities and academic entrepreneurship: the-state-of-the-art. *The Journal of Technology Transfer, 38*(1), 1-67.

Cooke, N. J., Hilton, M. L., on Behavioral, B., & National Research Council. (2015). *Institutional and Organizational Support for Team Science. In Enhancing the Effectiveness of Team Science*. National Academies Press (US).

Bailey, J. G. (1999). Academics' motivation and self-efficacy for teaching and research. *Higher Education Research & Development, 18*(3), 343-359.

Bazeley, P. (2003). Defining "Early Career' in Research. *Higher Education, 45*, 257-279.

Bhakta, D., & Boeren, E. (2016). Training Needs of Early Career Researchers in Research-Intensive Universities. *International Journal for Researcher Development, 7*(1), 84-102. doi10.1108/IJRD-06-2015-0017.

Belkhir, M., Brouard, M., Brunk, K. H., Dalmoro, M., Ferreira, M. C., Figueiredo, B., & Smith, A. N. (2019). Isolation in globalizing academic fields: A collaborative autoethnography of early career researchers. *Academy of Management Learning & Education, 18*(2), 261-285.

Bruner, J. S. (1996). *The culture of education*. Cambridge, MA: Harvard University Press.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. London: Sage

Debowski, S. (2012). *The new academic: A strategic handbook*. Buckingham: Open University Press.

Elizabeth, V., & Grant, B.M. (2013). 'The spirit of research has changed': Reverberations from researcher identities in managerial times. *Higher Education Research & Development, 32*(1), 122-135.

García-Sánchez, P., Díaz-Díaz, N. L., & De Saá-Pérez, P. (2019). Social capital and knowledge sharing in academic research teams. *International Review of Administrative Sciences, 85*(1), 191-207.

Gravett, S. & Petersen, N. (2007). 'You just try to find your own way': The experience of newcomers to academia. *International Journal of Lifelong Learning, 26*(2), 193–207.

Hemmings,B., & Russell, K. (2010). University lecturer publication output: Qualifications, time and confidence count. *Journal of Higher Education Policy and Management, 32*(2) 185-197. doi10.1080/13600800903575520.

Hemmings, B. (2012). Sources of research confidence for early career academics: A qualitative study. *Higher Education Research & Development, 31*(2), 171-184.

Hemmings, B. C. (2015). Strengthening the teaching self-efficacy of early career academics. *Issues in Educational Research*, 25(1), 1-17.

Hollywood, A., McCarthy, D., Spencely, C., & Winstone, N. (2020) 'Overwhelmed at first': The experience of career development in early career academics, *Journal of Further and Higher Education, 44*(7), 998-1012. doi10.1080/0309877X.2019.1636213.

Katz, J. S., & Martin, B. R. (1997). What is research collaboration?. *Research policy, 26*(1), 1-18.

Kenny, J. (2018). Re-empowering academics in a corporate culture: An exploration of workload and performativity in a university. *Higher Education, 75*(2), 365-380.

Kerry, T. A., Pammie, E., & Lole, L. (2020). Publish, perish, or pursue? Early career academics' perspectives on demands for research productivity in regional universities. *Higher Education Research & Developmen*t, doi10.1080/07294360.2020.1804334

Kyvik,S., & Reymert, I. (2017). Research Collaboration in Groups and Networks: Differences Across Academic Fields. Scientometrics, 113(2), 951-967.

Lattuca, L.R., & Creamer, E.G. (2005). Learning as professional practice. *New Directions for Teaching and Learning, 102*, 3-11.

Landry, R., Traore, N., & Godin, B. (1996). An econometric analysis of the effect of collaboration on academic research productivity. *Higher Education, 32*(3), 283–301. doi10.1007/bf00138868.

Lewis, J. M., Ross, S., & Holden, T. (2012). The how and why of academic collaboration: Disciplinary differences and policy implications. *Higher education, 64*(5), 693-708.

Laudel G., & Gläser, L. (2008). "From apprentice to colleague: The metamorphosis of early career researchers. *Higher Education, 55*(3), 387–406. doi10.1007/s10734-007-9063-7.

Lee, S., & Bozeman, B. (2005). 'The impact of research collaboration on scientific productivity'. *Social Studies of Science, 35*(5), 673– 702.Malik, N.A. & Björkqvist, K. (2021). An Evidence-Base Framework for Reducing Occupational Stress and Burnout in Pakistani Universities. *Asian Journal of University Education, 17*(1), 19-32.doi: 10.24191/ajue.v17i1.12623

Malik, N.A. & Björkqvist, K. (2021). An Evidence-Base Framework for Reducing Occupational Stress and Burnout in Pakistani Universities. *Asian Journal of University Education, 17*(1), 19-32.doi: 10.24191/ajue.v17i1.12623

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. sage.

Muda, A.L. & Fook, C.Y. (2020). Psychological Empowerment and Organisational Commitment among Academic Staff of Public Universities in Malaysia. *Asian Journal of University Education, 16*(3), 26-35. doi:10.24191/ajue.v16i2.10292

Nicholas, D., Rodríguez-Bravo, B., Watkinson, A., Boukacem-Zeghmouri, C., Herman, E., Xu, J.,& Świgoń, M. (2017). Early career researchers and their publishing and authorship practices. *Learned Publishing, 30*(3), 205-217.

Poole, M., & Bornholt, L. (1998). Career development of academics: Cross-cultural and lifespan factors. *International Journal of Behavioral Development, 22*, 103-122.

Rubin, H. J., & Rubin, I. S. (2011). *Qualitative interviewing: The art of hearing data*. Sage.

Schmoch, U., & Schubert, T. (2008). Are International Co-publications an Indicator for Quality of Scientific Research?, *Scientometrics, 74*(3), 361–377.

Smith, J. (2017). Target-setting, Early-career academic identities and the measurement culture of UK higher education. *Higher Education Research & Development, 36*(3), 597–611.

Su, S., & Baird, K. (2017). "The impact of collegiality amongst Australian accounting academics on work-related attitudes and academic performance. Studies in Higher Education, 42(3), 411–427. doi10.1080/03075079.2015.1049142.

Supramaniam, K., Md Razak, M.I. & Arumugam, N. (2020). Changing Identities in Community of Practice: Expert Teachers to Novice Researchers *Asian Journal of University Education*, *16*(3), 59-68. doi:10.24191/ajue.v16i2.10297

Sutherland, K. & Petersen, L. (2010). *The success and impact of early career academics in two New Zealand tertiary institutions*. Wellington: Ako Aotearoa. http://akoaotearoa.ac.nz/akohub/ako-aotearoa-central-hub/resources/pages/success-and-impact-early-careeracademics-two-new-z

Sutherland, K. A. (2018). *Early career academics in New Zealand: Challenges and prospects in comparative perspective*. Cham: Springer.

Thomas, J.D., Lunsford, L.G. & Rodrigues, H. A. (2015). Early Career Academic Staff Support: Evaluating Mentoring Networks. Journal of Higher Education Policy and Management, 37(3), 320-329. doi10.1080/1360080X.2015.1034426.

Viale, K. *Knowledge-driven Capitalization of Knowledge*. In R. Viale & H. Eyzkowitz (Eds.), *The Capitalization of Knowledge* (pp. 31–73). Gloucester, England: Edward Elgar.