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Research Capacity in Higher Education: Theoretical Considerations

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Annotation. The aim of this conceptual research was to provide considerations on understanding the essences of institutional research capacity as a notion and as a process within the higher education context and institutional level. The descriptive integrative review with a five-stage integrative review process of 71 scientific resources was implemented and included problem formulation. Research results revealed that institutional research capacity in higher education is a multifaceted concept that has several meanings.

Keywords: *higher education, integrated review, researcher, research capacity.*

Introduction

We live in a rapidly changing world, which becomes more complex. Thus, the way researchers are engaged in research, and the spectrum of competencies expected from them changes. We navigate in the unknown, so why we cannot rely totally on past experiences to plan the future. Also, we need to be perceptive in discovering events and understanding how they are interrelated regarding the researcher's involvement into research engagements with their roles and responsibilities. A supportive environment for research in a university is important because it may strongly motivate researchers to become engaged in viable academic pursuits in a variety of meaningful ways (Colbeck & Weaver, 2008). Thus, the traditional, and still dominant, research model that the individual or a small group of researchers pursuing research on a topic of their choice

and in their area of professional interest (Sawyerr, 2004) is no longer exemplary as the world focuses on interdisciplinarity in solving complex problems by seeking research evidence-based outcomes.

The macro-environment of public policy and resource allocation is the factor, which facilitates or hinders research, independently of interests, values or expertise of individual researchers. An educational system that encourages learners to be curious about nature and society and to develop an interest in the pursuit of knowledge is an indispensable general condition for the development of a research culture and building research capacity at individual and institutional levels (Mugimu et al., 2013). Social recognition of achievement and utilisation of research-based knowledge provide powerful incentives to research excellence and innovation, which is the basic of higher education institution research capacity (Fellesson, 2017). Building research capacity is defined as a process of individual and institutional development that leads to higher skill levels and greater ability to perform useful research (Grange et al., 2005, p. 32).

Building research capacity has been seen at the system level in the UK where polytechnics became full universities, other examples of building research capacity can be found in disciplinary institutes moved into the university setting and became active in research, and the traditional lecturers' work became increasingly academic (Christensen & Eyring, 2011; Levine et al., 2013; Hales & Clarke, 2016; Griffioen, 2020).

Higher education institutions are under increasing pressure to adapt to evolving competitive and financial pressures (Selingo, 2013). Changes in institutional revenues can alter institutional priorities with research excellence at the edge by increasing research-related revenues (Crawford et al., 2011), and higher education institutions are consequently exploring more entrepreneurial activities and new collaborations or partnerships for building institutional research capacity (Abouchedid & Abdelnour, 2015).

The research literature shows that individual research capacity of researchers is proved by their scientific productivity, which involves publications in journal editions with high-impact and books published by highly recognised international publishing companies, performing and already implemented projects, substantial external funding, sustainable international collaborations and this is recognised as a form of research excellence within the higher education institution. It means that the higher education institution research capacity is proven by its researchers' individual research capacities through downloads, citations, and h-indexes (Crawford et al., 2011).

Higher education institutions pursue specific strategies for building institutional research capacity (Munn, 2008; Huenneke et al., 2017). Expanding research can cause tensions with traditional expectations for instruction and studies, and increasing focus on research means challenges in managing risk and regulatory compliance in higher education institutions. However, the higher education institution investment in building research capacity does not guarantee and assure only positive outcomes, for example, publications only in journals with the highest impact, attracting the world's best scientists

and visible volume of high impact-related publications (Rees et al., 2007; Bosch & Taylor, 2011; Ronda-Pupo & Katz, 2016).

The aim of this conceptual research was to provide considerations on understanding the essences of institutional research capacity as a notion and as a process within the higher education context and institutional level.

Thus, research questions to which the answers are provided were the following:

- What covers the notion of 'research capacity' within the higher education?
- What are supporting and limiting factors of building research capacity in higher education?
- What includes research c capacity building and improving?

This article was based on conceptual research, which was implemented through a descriptive integrative review with a 5-stage integrative review process of 71 scientific resources and included: (1) problem formulation, (2) data collection or literature search, (3) data evaluation, (4) data analysis, and (5) interpretation and presentation of results (Russell, 2015).

Understanding Essences of Research Capacity in Higher Education

Institutional research capacity in higher education is the development of researchers' competences, which enable them to conduct highest quality research as possible (Holden et al., 2012). Institutional research capacity means organisational capability to create, develop, apply, use, share and disseminate knowledge in the competitive, unpredictable and challenging knowledge economy. Institutional research capacity in higher education is related to university capability to identify the authentic and specific research areas and conduct the relevant research according to high-quality research by international standard (Flenady et al., 2022). Functional and supportive institutional environment for research capacity with research councils, research policy, administrative resources, ICT connectivity, libraries and laboratories is a part of institutional research capacity (Fellesson, 2017). Thus, researchers develop their competences needed to engage in research and knowledge generation.

The research capacity consists of three directions (Fellesson, 2017):

- Mobility within the university, through interaction with various sectors in society, stays and positions abroad.
- International collaboration with prerequisites and roles in international collaboration.
- Scientific production with publications and international outreach.

Research capacity includes defining issues and identifying solutions, setting prioritised objectives and building sustainability-based institutions within the particular area

and context. This understanding incorporates individual and organisational research capacity, which consists of competencies, research activities, outputs, and impacts (Li et al., 2008; Frakking et al., 2021; Flenady et al., 2022). International publications refer that research capacity is a process, which is connected to building (Huenneke et al., 2017; Matus et al., 2018; Griffioen, 2018; 2020; Balandya et al., 2021; Hammad & Al-Ani, 2021; Niemczyk, 2022; Flenady et al., 2022), development (Sitthi-amorn, & Somrongthong, 2000; Sawyerr, 2004; Mugimu et al., 2013; Kazoka, 2005; 2016; Kazoka & Wema, 2020) and / or strengthening (Busse et al., 2022). It means that research capacity is not status quo and its mission is to is based on assimilation application and production of new knowledge and skills (Suddaby 2010).

Research capacity at the individual level means research competence that is acquired and continuously developed by researchers, almost from PhD studies. Research competence includes skills and knowledge (Huenneke et al., 2017):

- Scientific skills in systematic and critical reviewing the research state of research, in methodology by planning systematically and preparing the research process, selecting and applying the specific methods, theoretically and methodologically reflecting on research results within different contexts and its implications and inputs to certain scientific disciplines and specifics practice.
- Communication skills in preparing and submitting original research articles and books, giving different types of presentations in variety of events to researchers, practitioners or politicians.
- Knowledge in content of the discipline regarding theories, concepts, philosophies, approaches and current findings, research methodologies and methods, communication and ethical standards in different types of research.

The scientific degree of doctor in philosophy (PhD) means a research-based degree, which is acquired after completion of doctoral studies in a particular scientific field and / or subject and public defense of a PhD dissertation under evaluation of the defense committee. PhD studies are oriented to foster the training of autonomous researchers. Thus, individuals with a PhD are expected to be experts in specific field and / or subject, and competent in designing, planning, and implementing research autonomously following the academic rigour-based research rules and approaches (De Jong et al., 2021). A high level of research competences is expected from all PhD graduates worldwide in a particular discipline / field. PhD graduates may complete doctoral studies in one country, but obtain the research position at University or Research Institute in another country because all doctoral programs seek for similar levels of research competences in regard to performing literature searches, publishing manuscripts, developing research projects, designing and carrying out research studies (Koster et al., 2005; Hill & Haigh, 2011). So, PhD students in doctoral studies acquire complex research competence, what means that they develop and build the research competence-based research capacity.

In universities and research institutes, the research capacity of individual researchers, including their skills, knowledge, attitudes, and values, is developed and built through specific training programs, courses or workshops through involvement in research activities. The university research capacity is built by the individual researchers within the particular higher education institution in which the positive research culture is supported and cultivated, and the research career is attractive to academic personnel (Mugimu et al., 2013). Thus, the competent researcher acquires knowledge, skills, attitudes and values for conducting ethical and rigorous research in diverse contexts by applying various research methods by being socially and ethically responsible, valuing diversity in regard to conducting research and disseminating research findings. It means that the competent researcher is knowledgeable about variety of worldwide contexts and issues within the discipline e and cross disciplines and is committed to collaborate and cooperate in multicultural and multidisciplinary environments (Niemczyk, 2018).

Nevertheless, the traditional outcomes of publications in international highly referenced and peer reviewed journals, books, or special editions, and successful grant applications are important indicators of institutional research capacity, but they do not address all the issues at edge to highlight the institutional academic research progress. Because they do not represent the factors that influence the supportive institutional environment for research capacity building (Cooke, 2005).

Factors Influencing Research Capacity in Higher Education

Worldwide, research is considered as fundamental basic to to generate knowledge and theories that are related to institutional research capacity (Chikwe et al., 2015). Higher education institutions with researchers carry out research in different areas and disciplines, aiming to build the institutional research capacity (Kazoka, 2005; 2016). So higher education institutions in all the world are recognized as core of knowledge creation, development, accumulation, transfer, and improvement (Hooley et al., 2010).

Higher education institutions expect researchers to make the best quality scientific production. This includes international co-authorships, international reviewing and editing in international journals and / or editions with higher as possible impact factors, internationally sound grants, active involvement in international scholarly platforms (conference boards, panels, research networks, academic alliances, international workshops). These research outcomes rely on engagement in international research teams, communities and networks (Edmondson & McManus, 2007).

Collaboration and scientific productivity of higher education institution are interrelated. Research collaboration enhances the conducting of good quality research and acting out of research outcomes within the variety of contexts. The higher the researcher's productivity, then greater is its impact on institutional research potential building. This depends on the

researchers'motivation to collaborate and create networks institutionally and behind of it (Rodriguez & Pepe, 2008; Hsu & Huang, 2010; Barrett et al., 2011; Ynalvez & Shrum, 2011). Researchers' collaborations make a great impact on development of researchers' competence and potential to solve issues. International and interdisciplinary teams pool expertise together and bridge knowledge flow to achieve knowledge creation and transformation (Huang et al., 2014). Crossing cultural and disciplinary boundaries allows researchers to go deeper into a variety of areas (e.g., connected to culture or a specific discipline) to achieve more holistic views and interpretations (Edmondson & McManus, 2007).

Higher education institutions are expected to engage in research activities covering various areas of disciplines in order to add the value to social, economic, and cultural development in a particular context, for example, in the region, city or state (Griffioen, 2018). In higher education institutions the growth of research is usually done by adding researchers to existing faculty units, and providing mentoring and infrastructure to maximise success of research groups in order to enhance institutional research capacity (Huenneke et al., 2017).

Research Capacity Building and Improving

Higher education institutions around the world are under pressure created by globalisation and increasing global ranking demands (Huenneke et al., 2017). Part of their response to this pressure has been the development of their research capacity (Griffioen, 2018). Different approaches to capacity building are adopted by universities around the world, but usually it includes elements of establishing the infrastructure necessary for conducting research and recruiting, developing, motivating a supporting researcher (Bennet et al., 2013).

Research capacity building is a tool to address the shortcomings of research and support researchers to produce research evidence-based knowledge that responds to the complex needs of society with a focus on globally and locally, politics, policies and practices, and micro-, mezzo- and macro-levels (Barrett et al., 2011; Hallinger & Kovačević, 2022). Within the research capacity building, the university must have active researchers who are knowledgeable about the discipline and it's cross-disciplinary connections, are able to apply methodological research skills and contemporary knowledge, understand comprehensively the research process and are able to apply it through data collecting and analysing qualitative and quantitative research approaches, designing research tools, handling different sets of data (Leitch et al., 2009; Ridley, 2011).

Different strategies contribute to building research capacity: i) engagement researchers into research as a professional activity, researchers critical reflections on academic research experience, and their interaction with fellow researchers (Rees et al., 2007); ii) collaboration between researchers and professional practitioners, and other stakehold-

ers and team-working during the planning and conducting research process nationally and / or internationally across universities and / or other institutions (Asare et al., 2021); iii) implementing programs and projects to support research capacity building in group or team and community levels within the higher education institution (Barrett et al., 2011).

Research capacity building is also related to the opening of the higher education institution to the public by communicating its contribution to its well-being through research because every research study is part of education policy (Jacob & Meek, 2013). As the research capacity should be evaluated not only by rigorous academic research, but also by its impact within society (Barrett et al., 2011). But still the research (especially research in social sciences and humanities) is not taken seriously by policymakers and practitioners for reasons to do with poor coordination and untrusting the research quality. This is seen nationally and internationally (Olmos-Peñuela et al., 2014). Researchers this situation relate to the lack of communication about research within the higher education institution between departments and to society and lack of teamwork culture (Harrison & Seddon, 2013). But research capacity building is not a status quo of knowledge and skills, but the process, which is based on application, sharing, dissemination and permanent learning implemented through conferences, workshops, courses, what is the development of research culture at higher education institution (Ridley, 2011).

Building research capacity is vital for establishing the research evidence-based knowledge that can inform ongoing reforms in the country and responding to the needs of it's societal, educational, political, cultural, economic, and political contexts (Hallinger & Hammad, 2017).

Improvement of institutional research capacity is influenced by supportive climate and environment of higher education institutions, availability of internal fundings, grants, publication rewards, inclusion into research networking across institutions, regions within the country and countries with a focus on a variety of higher education institutions and research institutes, and strengthening the group- and / or team- work culture (Munn, 2008). Improvement of research capacity is related to strong leadership and clear policy in higher education institution implemented by heads of departments, head and senior researchers, active multi-disciplinary and cross-disciplinary research groups. All this complex leadership is important in order to direct research potential building toward directions in accordance with higher education institution's mission, regulations and research priorities that are related to national research priorities and internationally sound research issues and topics in order to share knowledge, widening expertise areas and raising research reputation of the institution (Barrett et al., 2011). By the way, national and international collaboration could be implemented in the form of informal joint research projects initiated by the researchers themselves, or formal partnerships organised at the institutional level (Barrett et al., 2011).

Higher education institution has in place strategies for research capacity building that act as a vector for promoting research and the quality of research outcomes. These

strategies promote research activities among academic staff and students. It includes education and training study programs (Master's and PhD), specific courses, workshops, and internships with the focus on research skills of academic staff and students by establishing partnership network-based and multilateral partnership programs. The fact that higher education institution cares about research competencies of researchers and students reveals that the institution supports both – the building and improvement of research capacity (Leitch, 2009; Nguyen, 2016). Also, it shows that the higher education institution enables environment and resources for research and knowledge production, promoting strategic development of priority research areas, and human capital development (Sharobeam & Howard, 2002; Segrott et al., 2006; Vasquez the al., 2013).

Limitations of Research Capacity in Higher Education

There are particular limitations that strongly affect the research capacity in higher education. Inadequate funding, heavy workload, poor motivation, lack of information because of poor access to e-databases, lack of mentorship, poor research environments, unsupportive institutional environment to motivate researchers to engage in meaningful research, lack of senior researchers as faculty members at the ranks of associate professors, gender inequality in faculties, where male researchers dominate especially at senior rank levels, inability to access research funding, unsatisfactory financial and collegial support, exclusive attention to technological, natural sciences compared to social sciences and humanities, absence of national research projects, unavailability of clear research agendas, lack of support from the private sector, heavy teaching loads, lack of research assistants, to limited autonomy and lack of job security, a lack of connection between researchers and their peers in other fields internationally and individualistic research culture within the higher education institution (Segrott set al., 2006; Hepworth & Duvigneau, 2012) are the essential limiting factors of research capacity in higher education which results an imbalanced allocation of resources and lack of funding. The lack of academic freedom and avoidance to conduct research on topics that may be seen as sensitive or controversial from a political, social, moral point of views create blind spots within the knowledge base development what is related to limitations of research capacity in higher education (Huenneke et al., 2017).

If a higher education institution does not provide the support to encourage and nurture individual researcher's and associated emotional satisfaction, which emerges from engaging into research activities, then the research outcomes and outputs will be unsatisfactory (Niemczyk, 2022).

Concerns are about the quality and impact of research. The criticism here is related to knowledge production and its contribution to the global knowledge pool in a variety of research fields (Munn, 2008). Insignificant contribution to the global scholarship is

directly related to methodological and conceptual limitations, which includes excessive reliance on quantitative research approach and data collection techniques, excessive use of monodisciplinary conceptual models that are unable to address the complex nature of studied research phenomenons and focusing on issues that do not address the practically existing issues in different areas, institutions, contexts, disciplines, and levels (Stringer & Hourani, 2016).

So, the higher education institution must correspond to the researchers' request for research-focused training, research teams' promotion, appropriate funding, and a research-supportive environment (Rees et al., 2007).

There are several challenges facing higher education in research capacity development:

- Inadequate funding for research activities (when research efforts hardly attract adequate government and donors funding) is a challenge for research capacity building and development in higher education (Chikwe et al., 2015).
- Research is not clearly nationally defined in the socioeconomic and cultural development priorities, then consequently, there low research activities in higher education are in particular countries (Ashour & Fatima, 2016).
- The lack of commitment of government with the country to support research activities in higher education institutions by set aside enough funds in its budget. Thus, consequently, efforts of building and developing research capacity remain low in higher education institutions within the country (Huenneke et al., 2017).
- The lack of equipment, facilities and materials in research where researchers cannot dispose of the necessary equipment, and tools to carry out experiments (Chikwe et al., 2015).
- Poor collaboration and ineffective communication network among researches within the high education institution are challenges to higher education institution in order researchers would be involved and engaged into the research activities (Bai et al., 2009).
- Limited research skills and competences of researchers are the great challenge to development of research capacity within the higher education (Hart & Kleinveldt, 2011). Research skills (writing proposal and manuscript, doing data analysis and interpreting it, abstracting and conceptualising research results / findings, presenting research outcomes, writing (multi)national research project proposals) skills are essential for highest quality research undertaking and developing proposal which can win grants from different funds / donors (Chikwe et al., 2015). Lack of research skills in conducting research, producing high skilled manpower and solving problems facing surrounding communities is a nightmare (Göransson & Brundenius, 2010).
- Lack of collaboration between senior and junior academic staff as the collaboration (institutional national and international) in research is equally important for ensuring quality research undertakings (Harle, 2010). Collaboration with

researcher who have a good history of successful proposal submissions, insightful and innovative approaches to problem solving, and significant publications within the field and / or subject helps junior researchers when they collaborate with them: collaboration with such experienced researchers can influence credibility, raise validation to projects and increase the chances of its successful submission (Harwood, 2010). This alliance can both facilitate successful on-going research efforts and future collaboration (Harle, 2010). Collaborations between senior and junior staff are important in promoting research activities in higher education institutions. This is due to the fact that senior researchers already have acquired knowledge and skills in research conducting (Griffioen & De Jong, 2015). Their collaborations with junior researchers help in knowledge development and skills transfer to junior research staff (Griffioen, 2020). Junior researchers may find working with senior researchers the opportunity for providing more support to them and to start individual research projects (Gustavson & Miyake, 2017). Thus, through collaboration with senior researchers, the research skills of junior researchers become fluent (Fellesson, 2017). Collaborations can be done between researchers and graduate students. Collaborative research with students can be mutually beneficial to both parts: students begin to establish a record of publication, and researchers continue to build their reputation and list of publications within the field and subject or cross-subjects with much needed help (Munn, 2008).

- Insufficient research funds and a lack of motivation as the availability of funds for research activities is of critical importance. Insufficient funds are the reason for poor research undertakings higher education institutions (Redman-MacLaren et al., 2012). Dissemination of research findings as part of research activities needs to be supported with funds for financing conferences, workshops, symposiums and distribution of research report (Grange et al., 2005). Availability of financial resources may facilitate or restrict the professional presentation of research findings and distribution of research report to different audiences (Chikwe et al., 2015).
- Lack of pro-activeness and commitment, because researchers in order to engage in research activities they need to be motivated, proactive and well committed in conducting research (Hill & Haigh, 2011). Lack of pro-activeness and commitment to a challenge facing higher education institutions in promoting research within the institution (Grange et al., 2005). Pro-activeness of researchers in conducting research makes them to search for different sources of funds for research activities and lack of it makes them inactive in doing research (Balandya et al., 2021). Lack of researchers' pro-activeness in doing research leads to lack of their commitment to higher education institution and research as academic activity. So consequently, researchers are slowly engaging in research performance (Kazoka, 2016).
- Heavy teaching workload of researchers is a problem for fostering research activities in higher education institution. So, the heavy workload to researchers means

that the higher education institution has a shortage of researchers and this leads to allocate many teaching hours to them (Hart & Kleinveldt, 2011).

Strategies to Increase Research Capacity in Higher Education

An increase in research capacity of higher education institution implies a change in researchers'academic profiles: a change in the working repertoire of the expertise enabling an individual to perform academic research tasks (Koster et al., 2005). While the concept of an increase in research capacity is embraced by policy makers on the internationally, nationally, and institutionally, the increase in research capacity of researchers is complicated to manage practically (Levine et al., 2013).

Researchers in higher education institutions are mostly hired for their academic and didactic competencies rather than for their research expertise (Hill & Haigh, 2011). As an effect of the triade of academic identity, including research, teaching, and scholarly activities (projects, international conferences, manuscripts and etc.) research mostly is not a part of researchers' academic identities (Hallinger & Hammad, 2017). Researchers' attitudes and higher education institutions barriers are in the way of bringing research into the identities of researchers who see themselves first of all as good teachers or lecturers at university (Bosch & Taylor, 2011). Researchers who strive to increase their research capacity experience limited opportunities, workload pressure in lecturing, a lack of resources and time (Grange et al., 2005). Unfortunately, researchers adhere to the attitude that priority should be given to teaching in higher education, and research is a secondary matter, because spending too much time on research can suffer the quality of studies (Abouchedid & Abdelnour, 2015). So, the employment of more researchers for teaching in order to reduce the teaching load in higher education institution is then considered a solution, but this does not add the value for strengthening the institutional research culture (Kekeubata & Speare, 2012).

Increasing institutional research capacity requires to take into account the research output, organisational support for research, and academic community impacts (Levine et al., 2013). So, the focus on development of researchers' and PhD students' research competencies, and to keep the balance between didactic, subject-related and research competencies in researchers goes beyond a researchers acquired formal educational level (Holden et al., 2012). So, the selection of researchers to work at higher education institution should be focused on researchers' research competencies and research identities (Barrett et al., 2011a, 2011b) what to assess and determine is complicated.

While the urgency of teaching tasks is still incentive to mostly focus on subject content and didactic skills, and less on research competencies, there is a doubt whether such a provision contributes to increasing the institutional research capacity while hiring researchers (Ynalvez & Shrum, 2011).

Strengthening research capacity at universities is key to socio-economic development (Busse, 2022). Researchers and students need to be empowered to be proficient across the whole spectrum of research undertaking, including conceptualisation of priority research problems, development of fundable research proposals, ethical data collection, data analysis, manuscript writing, and dissemination (Mugimu et al., 2013). Since formal teaching of research courses to undergraduate and postgraduate students is not rare inadequate (Cooke, 2005), then experiential learning and mentorship in the high education institutions are seen as an effective strategy for inculcating a research culture within the institution (Harwood, 2010).

Conclusions

The institutional research capacity in higher education is a multifaceted concept that has several meanings and they show the lability, variability and processuality of this concept. Thus, the research capacity in higher education means a prerequisite, a process, a result, a context:

- The research capacity of the higher education institution as a *prerequisite* means that the higher education institution, in order to fulfil its mission and functions related to studies and science, must prove that it is capable of implementing them. It is possible to do this when there are researchers working at the higher education institution who carry out high-level scientific research, who have the necessary intellectual competencies and apply it effectively by demonstrating it through publications in highest-impact scientific journals, books published by international publishing houses with the highest reputation, and scientific projects funded by internationally recognised programmes with high reputation or world-renowned universities, institutes, business organisations, etc. If the higher education institution employs researchers who are academically productive, then this is a prerequisite for attracting the best students, other best researchers because the high scientific-academic reputation of the higher education institution shows that the study programs and other processes are implemented by intellectual leaders.
- The research capacity in higher education as a *process* means the creation of a research culture. This includes a positive attitude towards science and research throughout the higher education institution. Decisions and strategies based on scientific knowledge are the 'physiology' of any activity or decision in higher education institution. Research culture in higher education is not only related to what and how research is conducted, but also includes the academic community, i.e., values, expectations, behaviours and attitudes of researchers. Research culture is a set of values that are incorporated into the behaviour of a higher education institution and it is a shared value system. This culture forms a shared

understanding of how a higher education institution serves the public good through research, maintains a high reputation, and contributes to socio-cultural development nationally and internationally. It incorporates various interactions: researcher-researcher, researcher-student, researcher-society, and researcher-practitioner. A positive research culture is based on collaboration, open-mindedness, and sensitive / receptive feedback. It is characterised by open discussions and here a focus is on mutual trust, respect and honesty. It supports and strengthens dialogue, cooperation, sharing of opinions, learning from each other and risk-taking, i.e., intellectual courage of researchers. Research is conducted effectively when it is inclusive, participatory, and collaborative. Research results are at the highest level when the environment of the higher education institution creates a positive research culture. Therefore, it requires strong leadership of the higher education institution, as it sets the tone for the institution scientific culture by shaping the basic institutional values expected of the academic community. Strong leadership of higher education institution creates the organisational vision, mission, and values. Leadership determines the scholarly standards that institution aspires to, and they identify the challenges that must be managed in order to achieve these standards. Thus, the strong leadership of a higher education institution creates a strong research culture that fosters a positive attitude toward highest-level research by demonstrating that leadership is inclusive and participatory, thus creating a sense of ownership and responsibility in the academic community and the research teams that work at that higher education institution.

- As a *result*, the research capacity of a higher education institution is a scientific production that is evaluated, measured, and for the higher education institution, it is one of the essential competitive instruments in the area of higher education. This includes the individual researcher, institutional higher school and higher education systemic levels, as well as relevant indicators for all three levels - bibliometrics (citations, h-index, number of articles published in peer-reviewed journals, number of conference papers, publications with impact factor indexed in WoS, number of joint scientific publications, number of research reports published, production of high quality/scientifically sound literature reviews and etc.), cooperation (engagement, experience and establishment – evidence of contribution/membership to networks, development of sustainable research collaborations, attitudes/behaviour are conducive to working effectively in partnership towards development goals), applicability of knowledge (dissemination and influence – applied dissemination of findings, evidence of influence on local strategy and planning), higher education infrastructure (suitability and procurement – facilities and infrastructure are appropriate to research needs and researchers' capacities, research equipment obtained at home institution), higher education recognition (enhanced reputation and increased appeal of institutions), research funding,

scientific management and intellectual competences of scientists (application, transfer and attainment – applying/using new evaluation methodologies, evidence of progressive skill development, shared lessons learned from the distance education program with other personnel at the site), research quality (scientific merit of research proposal), research processes (incorporation of end-users' concerns into research planning and design), career opportunities (evidence that awardees returned to active and independent research, returned fellows take up leadership roles in scientific networks and communities of practice). This shows that the production of science is a complex result, to which there is a path and its guides are researchers as intellectual leaders.

- The research capacity of the higher education institution as a *context* is related to the building and strengthening of the research culture in the institution. It depends on the leadership of the higher education institution and the academic community's courage, loyalty, and solidarity to fulfil the mission, vision and values of the higher education institution, among which are the scientific productivity, effectiveness, efficiency. This is demonstrated through higher education institution influence and reputation locally and internationally within the area of higher education and the society.

References

Abouchedid, K., & Abdelnour, G. (2015). Faculty research productivity in six Arab countries. *International Review of Education*, *61*(5), 673–690. http://dx.doi.org/10.1007/s11159-015-9518-5

Asare, N., Laryea, M. M., Onumah, J. M., & Asamoa, M. E. (2021). Intellectual capital and asset quality in an emerging banking market. *Asian Journal of Accounting Research, 6*(1), 55–68. https://doi.org/10.1108/AJAR-05-2020-0034

Ashour, S., & Fatima, S. K. (2016). Factors favouring or impeding building a stronger higher education system in the United Arab Emirates. *Journal of Higher Education Policy and Management*, *38*(5), 576–591. http://dx.doi.org/10.1080/1360080X.2016.1196925

Bai, L., Millwater, J., & Hudson, P. (2009). Building research capacity: changing roles of universities and academics. In Jeffery, P. (Ed.), *Proceedings of the Australian Association for Research in Education (AARE) 2008 International Education Research Conference*. (pp. 1–13). Australian Association for Research in Education.

Balandya, E., Sunguya, B., Gunda, D. W., Kidenya, B., Nyamhanga, T., Minja, I. K., Mahande, M., Mmbaga, B. T., Mshana, S. E., Mteta, K., Bartlett, J., & Lyamuya, E. (2021). Building sustainable research capacity at higher learning institutions in Tanzania through mentoring of the Young Research Peers. *BMC Medical Education*, *21*, 355–367. doi: https://doi.org/10.1186/s12909-021-02611-0

Barrett, A., Crossley, M., & Dachi, H. (2011a). International collaboration and research capacity building: Learning from the EdQual experience. *Comparative Education*, *47*(1), 25–43. https://doi.org/10.1080/03050068.2011.541674

Barrett, L. F., Mesquita, B., & Gendron, M. (2011b). Context in emotion perception. C*urrent Directions in Psychological Science*, *20*(5), 286–290. https://doi.org/10.1177/0963721411422522

Bennett, D., Smith, E., Bennett, S., Chan, P., Bobis, J., Harrison, N., Seddon, T. & Shore, S. (2013). Who is conducting educational research in Australia and how can their work be supported? *Australian Educational Researcher, 40*(4), 473–492. https://doi.org/10.1007/s13384-013-0106-z

Bosch, A., & Taylor, J. (2011). A proposed framework of institutional research development plans. *Journal of Higher Education Policy and Management*, *33*, 443–457. https://doi.org/10.1080/1360080X.2011.585742

Busse, C. E., Anderson, E. W., Endale, T., Smith, Y. R., Kaniecki, M., Shannon, C. & August, E. T. (2022). Strengthening research capacity: a systematic review of manuscript writing and publishing interventions for researchers in low-income and middle-income countries. *BMJ Global Health*, *7*(2), e008059. http://dx.doi.org/10.1136/bmjgh-2021-008059

Chikwe, Ch. K., Reuben, O. C. & Nwachukwu, K. (2015). Challenges of research and human capital development in Nigeria. *Journal of Education and Practice*, *6*(28), 44–47. https://files.eric.ed.gov/fulltext/EJ1081206.pdf

Christensen, C. M. & Eyring, H. J. (2011). *The innovative university: Changing the DNA of higher education from the inside out.* San Francisco, CA: Jossey-Bass.

Colbeck, C. L. & Weaver, L. D. (2008). Faculty engagement in public scholarship: a motivation system theory perspective. *Journal of Higher Education Outreach and Engagement*, *12*(2), 7–31. https://openjournals.libs.uga.edu/jheoe/article/view/509/509

Cooke, J. A (2005). Framework to evaluate research capacity building in health care. *BMC Family Practice*, *6* (44), 1–11. https://doi.org/10.1186/1471-2296-6-44.

Crawford, Ch., Burns, R. & Hartmann McNamara, R. (2011). Promotion to full professor: Moving beyond tenure and associate professorship. *Journal of Criminal Justice Education*, 1–24. http://dx.doi.org/10.1080/10511253.2011.645491.

De Jong, J., Waardenburg, M., Steenbergen, B., & Vachon, N. (2023). All minds on deck? Assessing distributed strategic capacity in public-sector organizations. *Review of Public Personnel Administration*, *43*(1), 33–55. https://doi.org/10.1177/0734371X211032389

Edmondson, A. & McManus, S. (2007). Methodological fit in management field research. *Academy of Management Review*, *32*(4), 1155–1179. http://dx.doi.org/10.5465/AMR.2007.26586086

Felleson, M. (2017). *Research capacity in the new global development agenda. mobility, collaboration and scientific production among PhD graduates supported by Swedish development aid in Africa*.: Elanders Sverige AB.

Flenady, T., Dwyer, T., Kahl, J., Sobolewska, A., Reid-Searl, K. & Signal, T. (2022). Research capacity-building for clinicians: understanding how the research facilitator role fosters clinicians' engagement in the research process. *Health Research Policy and Systems*, *20*(45), 1–13. https://doi.org/10.1186/s12961-022-00849-8

Frakking, T., Craswell, A., Clayton, A. & Waugh, J. (2021). Evaluation of research capacity and culture of health professionals working with women, children and families at an Australian public hospital: A cross sectional observational study. *Journal of Multidisciplinary Healthcare*, *1*(14), 2755–2766. https://doi.org/10.2147/JMDH.S330647

Göransson, B. & Brundenius, C. (Eds.). (2010). *Universities in transition: The changing role and challenges for academic institutions.* Springer Science & Business Media.

Grange, A., Herne, S., Casey, A. & Wordsworth, L. (2005). Building research capacity. *Nursing Management*, *12*(7), 32–37. https://doi.org/10.7748/nm2005.11.12.7.32.c2040

Griffioen, D. (2020). Building research capacity in new universities during times of academic drift: Lecturers professional profiles. *Higher Education Policy*, *33*, 347–366. https://doi.org/10.1057/s41307-018-0091-y

Griffioen, D. (2018). Building research capacity in new universities during times of academic drift: Lecturers professional profiles. *Higher Education Policy*, *33*, 347–366. https://doi.org/10.1057/s41307-018-0091-y

Griffioen, D. M. E. & De Jong, U. (2015). Implementing research in professional higher education: factors that influence lecturers' perceptions. *Educational Management Administration and Leadership*, *43*(4), 626–645. https://doi.org/10.1177/1741143214523008

Gustavson, D. E. & Miyake, A. (2017). Academic procrastination and goal accomplishment: A combined experimental and individual differences investigation. *Learning and Individual Differences*, *54*, 60–172. https://doi.org/10.1016/j.lindif.2017.01.010

Hales, A. & Clarke, A. (2016). So, you want to be a teacher educator? The job advertisement as a construction of teacher education in Canad'. *Asia-Pacific Journal of Teacher Education*, *44*(4), 320–332. https://doi.org/10.1080/1359866X.2016.1193842

Hallinger, Ph., & Hammad, W. (2017). Knowledge production on educational leadership and management in Arab societies: a systematic review of research. *Educational Management Administration & Leadership*, *XX*(X), 1–17. https://doi.org/10.1177/1741143217717280

Hallinger, P. & Kovačević, J. (2022). Mapping the intellectual lineage of educational management, administration and leadership, 1972–2020. *Educational Management Administration & Leadership*, *50*(2), 192–216. https://doi.org/10.1177/17411432211006093

Hammad, W. & Al-Ani, W. (2021). Building educational research capacity: Challenges and opportunities from the perspectives of faculty members at a national university in Oman. SAGE Open, *11*(3). https://doi.org/10.1177/1741143217717280

Harle, J. (2010). *Access to research in East and Southern African universities. Growing knowledge.* Association of Common Wealth Universities.

Harrison, N. & Seddon, T. (2013). Living in a 2.2 world: From mapping to strategic capacity building for Australian educational research. *Australian Educational Researcher*, *40*(4), 403–413. https://doi.org/10.1007/s13384-013-0101-4

Hart, G. & Kleinveldt, L. (2011). The role of academic library in research: Researchers' perspectives at South African university of technology. *South Africa Journal of Library and Information Science*, *77*(1), 37–50. https://doi.org/10.7553/77-1-65

Harwood, J. (2010). Understanding academic drift: on the institutional dynamics of higher technical and professional education. *Minerva*, *48*(4), 413–427. https://doi.org/10.1007/s11024-010-9156-9

Hepworth, M. & Duvigneau, S. (2012). *Building research capacity: enabling critical thinking through information literacy in higher education in Africa*. Institute of Development Studies. https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/2301/BuildingResearchCapacityR1.pdf

Hill, M. F. & Haigh, M. A. (2011). Creating a culture of research in teaching education: learning research within communities of practice. *Studies in Higher Education*, *37*(8), 971–988. https://doi.org/10.1080/03075079.2011.559222

Holden, L., Pager, S., Golenko, X. & Ware, R. S. (2012). Validation of the research capacity and culture (RCC) tool: measuring RCC at individual, team and organisation levels. Australian *Journal of Primary Health*, *18*(1), 62–67. https://doi.org/10.1071/PY10081

Hooley, T., Kent, R. & Williams, S. (2010). Introduction: hard times? Building and sustaining research capacity in UK universities. *Issues in Research Management and Administration*, *5*, 3–6. https://www.vitae.ac.uk/policy/issues-in-research-management-and-administration.pdf/view

Hsu, J. & Huang, D. (2010). Correlation between impact and collaboration. *Scientometrics*, *86*(2), 317–324. https://doi.org/10.1007/s11192-010-0265-x.

Huang, Sh., Ding, D. & Chen, S. (2014). Entrepreneurial leadership and performance in Chinese new ventures: a moderated mediation model of exploratory innovation, exploitative innovation and environmental dynamism. *Creativity and Innovation Management, 23*(4), 453–471. https://doi.org/10.1111/caim.12085

Huenneke, L. F., Stearns, D. M., Martinez, J. D. & Laurila, K. (2017). Key strategies for building research capacity of university faculty members. *Innovative Higher Education*, *42*(5–6), 421–435. https://doi.org/10.1007/s10755-017-9394-y

Jacob, M. & Meek, V. L. (2013). Scientific mobility and international research networks: Trends and policy tools for promoting research excellence and capacity building. *Studies in Higher Education*, *38*, 331–344. https://doi.org/10.1080/03075079.2013.773789

Kazoka, J. E. (2016). *The potential of the integration of Web 2.0 technologies in teaching and learning activities in selected Tanzania universities.* [Doctoral Dissertation. University of Dar es Salaam]. University of Dar es Salaam.

Kazoka, J. E. (2005). *Factors influencing dissemination and utilization of research findings: A case study of selected research institutions and government ministries located in Dar es Salaam.* [Doctoral Dissertation. University of Dar es Salaam]. University of Dar es Salaam.

Kazoka, J. E. & Wema, E. F. (2020). An analysis of the factors influencing research capacity developments in higher education institutions in Tanzania. *Journal of University of Dar res Salaam Library Journal*, *15*(1), 45–66. https://www.ajol.info/index.php/udslj/article/view/210675

Koster, B., Brekelmans, M., Korthagen, F. & Wubbels, T. (2005). Quality requirements for teacher educators. *Teaching and Teacher Education*, *21*(2), 157–176. https://doi.org/10.1016/j.tate.2004.12.004

Leitch, R. (2009). Harnessing the slipstream: Building educational research capacity in Northern Ireland. Size matters. *Journal of Education for Teaching*, *35*(4), 355–371. https://doi.org/10.1080/02607470903220422

Leitch, M. L., Vanslyke, J. & Allen, M. (2009). Somatic experiencing treatment with social service workers following Hurricanes Katrina and Rita. *Social Work*, *54*(1), 9–18. https://doi.org/10.1093/sw/54.1.9

Levine, R., Russ-Eft, D., Burling, A., Stephens, J. & Downey, J. (2013). Evaluating health services research capacity building programs: implications for health services and human resource development. *Evaluation and Program Planning*, *37*(1), 1–11. https://doi.org/10.1016/j.evalprogplan.2012.12.002

Li, B., Millwater, J. & Hudson, P. (2008). Building research capacity: Changing roles of universities and academics. In P. Jeffery (Ed.), *Proceedings of the Australian Association for Research in Education (AARE) 2008 International Education Research Conference* (pp. 1–13). The Australian Association for Research in Education.

Matus, J., Walker, A. & Mickan, S. (2018). Research capacity building frameworks for allied health professionals – a systematic review. *BMC Health Services Research*, *18*(716) 1–11. https://doi.org/10.1186/s12913-018-3518-7

Mugimu, C. B., Nakabugo, M. G. & Katunguka-Rwakishay, E., (2013). Developing capacity for research and teaching in higher education: A case of Makerere university. *World Journal of Education*, *3*(6), 201–216. https://doi.org/10.5430/wje.v3n6p33

Munn, P. (2008). Building research capacity collaboratively: can we take ownership of our future? *British Educational Research Journal*, *34*(4), 413–430. https://doi.org/10.1080/01411920802065664

Niemczyk, E. K. (2022). Global research capacity building among academic researchers, Compare: *A Journal of Comparative and International Education*. https://doi.org/10.1080/03057925.2022.2078956

Nguyen, T. L. (2016). Building human resources management capacity for university research: The case at four leading Vietnamese universities. *Higher Education*, *71*(2), 231–251. http://dx.doi.org/10.1007/s10734-015-9898-2

Olmos-Peñuela, J., Castro-Martínez, E. & D'Este, P. (2014). Knowledge transfer activities in social sciences and humanities: Explaining the interactions of research groups with non-academic agents. *Research Policy*, *43*(4), 696–706. https://doi.org/10.1016/j.respol.2013.12.004

Redman-MacLaren, M., MacLaren, D. J., Harrington, H., Asugeni, R., Timothy-Harrington, R., Kekeubata, E. & Speare, R. (2012). Mutual research capacity strengthening: a qualitative study of two-way partnerships in public health research. *International Journal for Equity in Health*, *18*(716), 1–11. https://doi.org/10.1186/1475-9276-11-79

Rees, G., Baronb, S., Boyaskc, R. & Taylora, C. (2007). Research capacity building, professional learning and the social practices of educational research. *British Educational Research Journal*, *33*(5), 761–779. https://doi.org/10.1080/01411920701582447

Ridley, A. J. (2011). Life at the leading edge. *Cell*, *145*(7), 1012–1022. https://doi.org/10.1016/j.cell.2011.06.010

Rodriguez, M. A. & Pepe, A. (2008). On the relationship between the structural and socioacademic communities of a coauthorship network. *Journal of Informetrics*, *2*(3), 195–201. https://doi.org/10.48550/arXiv.0801.2345

Ronda-Pupo G. A., Katz, J. S. (2016). The power-law relationship between citation-based performance and collaboration in articles in management journals: A scale-independent approach. *Journal of the Association for Information Science and Technology*, *67*(10), 2565–2572. https://doi.org/10.1002/asi.23575

Russell, C. L. (2015). An overview of the integrative research review. *Progress in Transplantation*, *15*(1), 8–13. https://doi.org/10.1177/152692480501500102.

Sawyerr, A. (2004). African universities and the challenge of research capacity development. *Journal of Higher Education in Africa*, *2*(1), 213–242. Special Issue: African Higher Education: Implications for Development. https://doi.org/10.57054/jhea.v2i1.1687

Segrott, J., McIvor, M. & Green, B. (2006). Challenges and strategies in developing nursing research capacity: A review of the literature. *International Journal of Nursing Studies*, *43*(5), 637–651. https://doi.org/10.1016/j.ijnurstu.2005.07.011

Selingo, J. J. (2013). *College (un)bound: The future of higher education and what it means for students*. Houghton Mifflin Harcourt.

Sharobeam, M. H. & Howard, K., (2002). Teaching demands versus research productivity. *Journal of College Science Teaching*, *31*(7), 436–441.

Sitthi-Amorn, C. & Somrongthong, R. (2000). Strengthening health research capacity in developing countries: a critical element for achieving health equity. *British Medical Journal*, *321*(7264), 813–817. https://doi.org/10.1136/bmj.321.7264.813

Stringer, P. & Hourani, R. B. (2016). Transformation of roles and responsibilities of principals in times of change. *Educational Management Administration & Leadership*, *44*(2), 224–246. https://doi.org/10.1177/1741143214549971

Suddaby, R. (2010). Challenges for institutional theory. *Journal of Management Inquiry*, *19*(1), 14–20. https://doi.org/10.1177/1056492609347564

Vasquez, E. E., Hirsch, J. S., Giang, L. M. & Parker, R. G. (2013). Rethinking health research capacity strengthening. *Global Public Health*, *8* Suppl 1(01), 104–24. https://doi.org/10.1080/17441692.2013.786117.

Ynalvez, M. A. & Shrum, W. M. (2011). Professional networks, scientific collaboration, and publication productivity in resource-constrained research institutions in a developing country. *Research Policy*, *40*(2), 204–216. https://doi.org/10.1016/j.respol.2010.10.004

Aukštojo mokslo tyrimų pajėgumai: teoriniai svarstymai

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Santrauka

Aukštojo mokslo tyrimų pajėgumai – tai tyrėjų kompetencijų ugdymas, sudarantis sąlygas atlikti kuo kokybiškesnius tyrimus (Holden ir kt., 2012). Šio konceptualaus tyrimo tikslas buvo pateikti svarstymus, kaip suprasti institucinio tyrimo pajėgumo, kaip sąvokos ir kaip proceso, esmę aukštojo mokslo kontekste ir instituciniu lygmeniu. Problemai atskleisti pasitelkiant aprašomąją integracinę apžvalgą panaudotas 71 mokslinis šaltinis. Tyrimo rezultatai parodė, kad aukštojo mokslo institucinis tyrimo pajėgumas yra daugialypė sąvoka, turinti keletą reikšmių. Aukštosios mokyklos mokslinis pajėgumas, kaip *būtina sąlyga*, reiškia, kad aukštoji mokykla, siekdama vykdyti savo misiją ir su studijomis bei mokslu susijusias funkcijas, turi įrodyti, kad yra pajėgi jas vykdyti. Aukštojo mokslo tyrimų pajėgumai kaip *procesas* reiškia tyrimo kultūros kūrimą. Aukštosios mokyklos tyrimų pajėgumai kaip *rezultatas* yra mokslinės produkcijos vertinimas, o tai vienas esminių konkurencinių instrumentų aukštojo mokslo srityje. Aukštojo mokslo tyrimų pajėgumai kaip k*ontekstas* yra susiję su mokslo kultūros institucijoje kūrimu ir stiprinimu. Tai priklauso nuo aukštosios mokyklos vadovybės ir akademinės bendruomenės drąsos, lojalumo ir solidarumo vykdyti aukštosios mokyklos misiją, viziją bei puoselėti institucines vertybes.

Esminiai žodžiai: *aukštasis mokslas, integruota apžvalga, tyrėjas, mokslinių tyrimų pajėgumai.*

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