

Enhancing Research on Academicians in Cambodian Higher Education: A Policy Perspective

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Abstract

Cambodia's higher education institutions (HEIs) face a number of challenges. Academics require increased access to resources and funding, as well as restrictions on academic freedom and significant language and cultural barriers. The purpose of this chapter is to identify and analyze the individual factors influencing academicians' research productivity in Cambodian higher education institutions, to examine and evaluate the impact of institutional factors on research productivity, to investigate and assess the external factors affecting research productivity, and to develop strategies to mitigate negative impacts while increasing positive influences. This study employs a qualitative approach, with insights gained through interviews and policy analysis. This comprehensive approach provides a thorough understanding of Cambodia's current academic research landscape, highlighting areas that require policy-driven solutions. The findings emphasize the critical need for policies that are tailored to the Cambodian academic context. There is a clear need to foster stronger domestic and international research collaborations as well as mechanisms that encourage long-term research development. The study proposes a set of focused policy recommendations designed to overcome these challenges and enhance the research productivity of Cambodian HEIs. These policies, if implemented, have the potential to significantly improve the research landscape in Cambodian HEIs, fostering a sense of hope and optimism among the academic community.

1. Introduction

Cambodia boasts 189 higher education institutions, including 79 public and 110 private universities across 20 provinces and Phnom Penh. These institutions fall under the jurisdiction of 17 ministries and one secretariat. From 2003 to 2023, the annual enrollment rate in Cambodian higher education significantly increased, doubling from 14,778 to 28,4599 (MoEYS, 2023). The Royal Government of Cambodia has shown a solid commitment to advancing academic research by implementing supportive policies. These include the Policy on Research Development in the Education Sector (2010), the Master Plan for Research Development in the Education Sector 2011-2015, Higher Education Vision 2030, Higher Education Strategy 2021-2030, the National Policy on Science, Technology, and Innovation 2020-2030, and the National Research Agenda 2025. Despite these initiatives, Cambodian higher education institutions (HEIs) continue to face considerable challenges that impede the enhancement of their research capabilities (Sam et al., 2013a; Sam et al., 2013b; Heng & Sol, 2021; Nhem, 2022; Heng, 2024).

This research examines how a series of prepared Cambodian higher education reforms can influence academia in conducting research and publishing. It also explores the nature and reasons for these influences and whether they align with existing understandings and experiences in Cambodian and other higher education systems. This research is crucial because it provides insights into the preparedness of academics to leverage Cambodian higher education reforms. The findings can serve as guidelines for proposing and replanning these reforms if the current challenges persist, which has been the case for all universities involved. Researchers are expected to identify, propose, and recommend actions for

university management and academics, as different reform groups have affected management actions (Sam et al., 2013c; Long et al., 2021; Doeur, 2022; Heng et al., 2023; Chhaing, 2022; Chet et al., 2022).

The literature consistently indicates that research and publication contribute to academics' motivation and job satisfaction, are crucial for career advancement and are valued by academics themselves. Cambodian higher education reforms have adopted the triangle model, which emphasizes the importance of teaching, research, and innovative work, among other functions (Sinniah et al., 2022; Szromek & Wolniak, 2020). The Cambodian government has implemented a series of reform measures involving restructuring, capacity building, and improving both human and material resources. However, most reform measures are qualitative, with little emphasis on quantitative diagnostic measures. This research aims to bridge this gap by employing rigorous quantitative methods to understand reality without preconceived notions or preplanned solutions (Zhou et al., 2022; Chet et al., 2022; Un & Sok, 2022).

In the past decade and a half, there has been significant activity aimed at improving higher education in Cambodia. The higher education system today is stronger than ever before, with considerable progress in making higher education more accessible and equitable, relevant to the needs of individuals and society, and more efficient at connecting people with desirable jobs (Un & Sok, 2022; Nhem, 2022; Sen, 2022). Despite this progress, the higher education sector faces many challenges, including insufficient and inadequately prepared graduates in some sectors; an education system that does not efficiently meet human resource needs; outdated curricula; poor-quality teaching; insufficient and inadequate research activities; a limited number and quality of institutions; an uneven distribution of institutions and students; declining public funding; and limited capacity for funding, research, and technology development (Naseer & Rafique, 2021; Akosile & Ekemen, 2022; Mehrad, 2020). If not addressed, these challenges may hinder Cambodia's economic development and negatively impact human resource development in the country. In response, the Ministry of Education, Youth, and Sports (MoEYS) has played a pivotal role in launching several higher education policies, demonstrating the government's unwavering commitment to education. However, many of these policies have overlooked the potential benefits of research and trained personnel in solving existing problems. The following sections will undertake an empirical analysis of these policy prescriptions (Sam et al., 2012a; Sam et al., 2012b, Hill et al., 2021; Kao & Shimizu, 2020).

2. Literature Review

2.1. Current State of Research in Cambodian HEIs

Research within Cambodia's higher education institutions (HEIs) has made progress, though it faces ongoing challenges that often need to be addressed more effectively. The structured approach to external and internal research assessments, conducted through quality reviews of universities, university grant committees, internal quality assurance offices, and external organizations, has been crucial in tackling these challenges. This approach has fostered a viable academic research system, yet full

implementation requires further encouragement. Emphasizing the pivotal role of internal assessment practices and academic staff expertise is crucial and empowers the continued improvement of Cambodian HEIs (MoEYS, 2014; Hoeun et al., 2020; Chhaing, 2022). However, a limited body of research addresses the quality and quantity of research on Cambodian HEIs, raising concerns about their effectiveness. The Ministry of Education, Youth, and Sport, via the Scientific Research and Innovation Department, a key player in the Cambodian higher education sector, has continuously evaluated research quality indicators by providing technical support to assist the institutional capacity of HEIs. However, the findings indicate only marginal growth in knowledge production, lagging significantly behind regional and global standards. Despite these challenges, higher-ranked Cambodian universities have shown notable improvements in recent years compared to their lower-ranked counterparts (Hoeun et al., 2020; MoEYS, 2023).

2.2. Challenges and Opportunities for Research on Cambodian HEIs

Cambodian higher education institutions (HEIs) face constraints because of their size, mandate, and reputation. Operating with small, underserved student populations and limited resources, these institutions often lack experience and performance data. Governed by governmental mandates and various stakeholders, they function as nominally 'public' institutions. In response, competitive institutional strategies are gaining traction. Recent research by Heng (2024) highlights the growing role of international engagement in Cambodian HEIs. This study examines the shift toward increased reliance on international funding, revealing challenges and opportunities. The foundational weaknesses in governance, structure, and quality present significant obstacles, including loss of autonomy, ownership issues, and limited resources (Heng & Sol, 2021). However, opportunities arise from potential international partnerships and global developments. Internal and external stakeholders often need to improve the governance of Cambodian HEIs, leading to institutions that perform poorly and operate like traditional businesses. To counteract these challenges, fostering cooperative engagement can help establish a positive global reputation. Such international engagement promotes international recognition and attracts financial support from domestic and international stakeholders, ultimately supporting national development.

Table 1: Challenges of Research Capacity in Cambodian HEIs

Nº Individual, Institutional, and National level Challenges		
A). Individual level Challenges		
1	Insufficient research skills and expertise	Many academic staff members need more training and experience in research methodologies, statistical analysis, and practices. Proficiency in English, the dominant language for international research, needs to be improved, making it difficult to access and contribute to global research.
2	Teaching working loading	Many faculty and academic staff members focus more on teaching than research and spend more time on administrative work.
3	Insufficient motivation, academic promotion, and incentives	Academics' salaries could be higher, forcing them to seek additional income sources and reducing the time and energy they can devote to research. It is urgent that we increase the appreciation and rewards for research activities, as this will discourage employees from conducting research.
4	Limited access to resources	Access to contemporary research materials, journals, and databases is limited, making it challenging to keep up with current research developments. There is often a need for advanced technology and laboratory equipment necessary for conducting high-quality research.
B). Institutional level challenges		
5	Inadequate institutional support and shortages of PhD holders in teaching and research	HEIs often need more funding for research, which restricts the scope and quality of research projects. Many institutions, which need more libraries and information technology systems, need more research infrastructure.
6	Limited research culture and academic freedom	There often needs to be a more robust research culture within institutions, where teaching is prioritized over research. This leads to less emphasis on developing research agendas and fostering collaborative research environments. Opportunities for professional development in research skills and methodologies are limited.
7	Organizational barriers	High administrative workloads for academic staff can limit the time available for research activities. Institutions often lack effective research management and support systems to guide and support research activities.
8	Limited higher education stakeholder collaboration	Robust higher education stakeholder collaboration and research networks are required to facilitate collaborative research efforts among relevant stakeholders.
C). National Level Challenges		
9	Policy and funding	Government policies and funding for research often need improvement. More strategic national research agendas and more investment in research and development (R&D) must be needed. The allocation of funding needs to be more transparent and efficient, leading to an uneven distribution of resources.

10	Collaboration and networks	Few opportunities exist for international collaboration and exchange programs, which limits exposure to global research standards and practices. Robust national and regional research networks must support collaborative research.
11	Education system	The overall quality of the education system can be a barrier. Poor foundational education at lower levels can lead to a lack of preparedness for advanced research at the HEI level. There is a need for systematic capacity-building programs to develop research skills at all educational levels.

Sources: Adapted from Heng, 2024; Kadikilo et al., 2024; CICP, 2016

Policy frameworks and initiatives are increasingly supporting research in Cambodian higher education. Science and technology are crucial factors in promoting the development of higher education. Current policies aim to create a small but highly educated group of researchers, enhance the quality of institutions, and improve educational accessibility. Concrete data on support from national science, technology, and innovation policies, as well as educational policies, are essential for understanding the performance of higher education in Cambodia. This article delves into these contributions in the next section (Heng, 2024). However, Cambodia needs a comprehensive national science and technology policy tailored to higher education. National strategies and policies on science, technology, and innovation primarily focus on industrial and technological sectors. Foreign assistance has significantly supported the development of science, technology, and innovation in Cambodia. Although the National Science and Technology Policy 2020-2030 has been adopted, the current draft highlights the role of higher education as a driver of innovation and development. This draft policy aims to generate individuals with high knowledge, skills, creativity, and ethics by integrating academic and research education and producing quality intellectuals and researchers to support national development through science, technology, and innovation.

2.3. National Policies and Regulations of Research in Cambodian HEIs

In Cambodia, higher education institutions are not required to submit detailed information or annual academic reports to the Ministry of Education, Youth, and Sports (MoEYS) regarding faculty status and program operations. This gap underscores the urgent need for a robust indexing system and infrastructure that can effectively meet these demands. The Accreditation Committee of Cambodia was established in 2003 to encourage private and public higher education institutions to comply with national and international standards. Despite legal mandates for relevant practices, their implementation could be more effective. Strengthening control mechanisms and introducing stricter measures could improve the accuracy of audited activities. The Royal Government of Cambodia appointments and changes in leadership positions at public higher education institutions, such as rectors, vice-rectors, deans, vice-deans, and relevant department heads. Additionally, directors-general, directors, and deputy directors from the MoEYS are assigned to support and participate in the duties of higher education institutions nationwide. Aligning academic and research strategic plans with national development policies is a crucial step in ensuring that learning, research, and technology initiatives in Cambodia meet the

country's needs. Therefore, obtaining complete and accurate information about the status and internal operations of higher education institutions is essential for this alignment.

Table 2: Existing National Policies and Regulations

Nº	Names of National Policies and Regulations	Issued years
1	Policy on research development in the educational sectors	2010
2	Master plan for research development in educational sectors (2011-2015)	2011
3	Policy on Human Resources in Educational sector	2012
4	Royal decree on professorship awarding	2013
5	Policy on Higher Education Vision 2030	2014
6	Road map on higher education 2030 and beyond 2030	2017
7	Educational Strategic Plan 2018-2023	2018
8	National Policy on Science, Technology and Innovation 2020-2030	2019
9	Ministerial directive on recruiting and awarding professorship in educational sector	2021
10	Strategy on Higher Education Subsector 2021-2030	2021
11	Research Management Manuals in Higher Education Institutions	2022
12	Journal creation, management, and development manual	2022
13	National research agenda 2025	2023
14	Cambodia Higher Education Reform	2024

2. 3.1. Institutional support mechanisms for research productivity in Cambodian HEIs

Cambodian higher education institutions need help attracting local students to graduate and doctoral programmes, which should be addressed. Traditional research practices focus on publishing papers to enhance reputation and secure funding, emphasizing quantity over quality. Narrow assessment criteria, local funding competition, and a need for more institutional incentives drive this approach. Research productivity was evaluated across four main areas: refereed publications, indexed publications, paper presentations, and bibliometrics. To ensure clarity, these areas were defined operationally. The referred publications are research articles that were published after undergoing a rigorous peer-review process. Indexed publications are research articles in reputable databases such as Scopus, the Web of Science, and the ASEAN Citation Index (Pentang & Domingo, 2024). The research produced is often theory-driven with limited practical application, and the success of elite universities further exacerbates these issues by setting uniform research performance criteria and exaggerating project assessments. Pursuing titles and paper production can lead to accountability issues, as researchers may need to be more rigorously

held responsible for their outputs. This environment can create a competitive academic atmosphere, prioritizing research over other educational missions (Bland & Ruffin, 1992; Bland et al. 201; Bland et al, 2022). In Cambodian higher education, researchers receive institutional support through various means, including teaching reductions, funding, and research-related training. Public higher education institutions and the Royal Government of Cambodia (RGC) substantially support researchers. Both internal and external financial support play crucial roles in facilitating research activities. In public institutions, student tuition fees, endowment funds, and government subsidies are the primary sources of research funding. In contrast, in private institutions, funding primarily comes from student tuition fees and contract research. Although internal research funding is currently modest, it represents a significant area for promoting research. Additionally, various academic and nonacademic staff development programs, though limited in scale, aim to enhance the research capacities of staff members.

2. 3.2. Capacity building for research in Cambodian HEIs

Scientific metric studies reveal a positive correlation between research output and the amount of academic time allocated for research. In Cambodian higher education institutions (HEIs), at least 50% of faculty members' monthly workload is dedicated to teaching and administrative duties (Maisano et al. 2023). This allocation allows faculty to engage in research, write grant applications, conduct peer reviews, and monitor funded research projects. By redistributing research time more effectively, Cambodian universities can unlock the potential for growth and improvement, providing academicians with the necessary time for research. To further enhance research productivity, it is crucial to ensure the hiring of an adequate number of administrators at the expense of research and teaching. Educational institutions should develop frameworks that allow salaried faculty members to advance their career plans. The government or appropriate higher authority should require institutions to invest in developing resources, identifying growth areas, addressing gaps, and creating supporting infrastructures. The potential benefits of these strategies are inspiring, as they ultimately increase the research outputs measured by publications.

Government-funded and private HEIs in Cambodia serve different missions and require distinct types of human resource development. Government universities should include research assistants, senior researchers, senior lecturers, and administrative personnel in their strategic plans, allocating 20-40% of their operational budgets to research activities. Funding should come from public financial support, tuition fees, and network activities. Additionally, universities lacking scientific staff should support state scientific centers of excellence, offering free access to analysis and review processes. This support would enhance public infrastructure facilities, promote interdisciplinary research, and improve research integration. Cambodian graduates often seek continuing education in research abroad, benefiting from research opportunities in countries such as Canada, Australia, Russia, the US, Belgium, India, Malaysia, and Thailand. However, due to limited research training and infrastructure in Cambodia, even doctoral graduates seldom engage in research. This issue urgently requires intervention through enhanced research training and related policies to retain theoretical learning, practical experience, and passion for research within Cambodia. Training programs and workshops enhance research productivity,

institutional intellectual capacity, and research culture. However, such programmes are limited in Cambodia and seldom benefit researchers. The Ministry of Education, Youth, and Sport, the Ministry of Economy and Finance, and development partners should provide more targeted programs. For instance, the World Bank-Financed Higher Education Improvement Project (HEIP) aims to improve research capacity through professional training, workshops, and grants. Component 2 of HEIP allocated USD 14.29 million to support 53 research projects across five higher education institutions: the ITC, the RUPP, the RUA, the SRU, and the NUBB. The funding was distributed in two rounds. Round 1 included 30 projects with a total budget of USD 7,805,595.50, while Round 2 included 23 projects with a budget of USD 6,486,934.81. Of these projects, 44 were linked to industry, and female principal investigators led 14. Researchers in the program significantly enhanced their capabilities in project management, prototype development, publication, conference presentation, collaboration, and industry linkage. They published 31 articles in local peer-reviewed journals and 102 in international journals and developed 43 research prototypes and 30 research products. Table 1 summarizes the key performance indicators achieved during the implementation of Component 2 of HEIP (MoEYS, 2023).

2.3. 3. Research funding and Grants in Cambodian HEIs

Unlike developed countries, Cambodia struggles with limited research funding. Additionally, sociodemographic factors are relatively low in terms of research productivity among academics. Significant barriers to acquiring real-time data include the unavailability of existing data online, lack of necessary competencies, and budget constraints for purchasing online databases. Despite these challenges, the Ministry of Education, Youth, and Sport (MoEYS) has made significant progress toward realizing strategic goals, recognizing that policies and funding are essential for supporting research and innovation capacity (Mak et al., 2021). Promoting research in higher education is crucial for creating a comprehensive and prosperous knowledge-based society, and academic researchers eagerly anticipate increased access to grants and research funding.

In Cambodia, higher education, particularly public universities, relies heavily on inherited funding. The government aims for educational institutions to become financially self-reliant, making innovative research practices in public universities particularly beneficial for the country. However, research in Cambodia faces numerous challenges, and improving research and knowledge exchange is vital for economic growth and social development. To address these issues, the government should introduce attractive incentives and allowances for research work, such as supporting postgraduate scholarships and training in research methods, increasing funding and grants for research in HEIs, and subsidizing publication costs in reputable journals or conferences.

Research is not just a powerful way for academicians to contribute to society; it is a crucial and urgent need for societal development. By providing and disseminating knowledge, research plays a pivotal role in the growth and distribution of knowledge, which are directly related to research activities. Countries with strong research capabilities tend to perform better economically and socially. Consequently, research is fundamental to all levels of society and is financed primarily by governments through various

research funding, grants, and promotion programs. It is widely acknowledged that spending on research yields both direct and indirect economic benefits.

2.3. 4. Research Collaboration and Networking

Studies show that networking and personal connections play a crucial role in facilitating collaborative research and interactions with development partners, including donors, embassies, international and domestic NGOs, foundations, civil society organizations, international development agencies, and international businesses (Nguyen et al., 2017; Vuong et al., 2018; Katz & Martin 1997). Cambodian academicians should be encouraged to establish stronger connections with these stakeholders. Effective networking and personal relationships not only enhance collaborative research and interactions between academicians and development partners, both locally and internationally but also pave the way for a brighter future for Cambodian higher education. Strong interactions with the private sector can facilitate industry collaboration and investment in research, potentially impacting innovation, productivity, and socioeconomic policy. Networking with state sector organizations, such as industry, society, the private sector, and the government, can also lead to more informed policy development and administration (Lee & Bozeman, 2005). This underscores the responsibility and commitment of academicians to their role in Cambodian higher education.

However, a culture of research collaboration is not well developed in Cambodian higher education, leading to limited research networking. Academicians are expected to collaborate and build social capital, recognizing that modern knowledge is multidisciplinary and broad in scope. Research collaboration is a successful strategy that saves valuable resources such as time and money while providing opportunities for sharing knowledge and expertise. To promote and implement more research collaboration, Cambodian higher education research institutions should establish a policy framework that encourages partnerships, particularly among domestic public research institutions, on national research agendas and policy issues. This framework should include appropriate research collaboration mechanisms, increased focus on forming research groups in priority areas, and intensive measures to encourage public dialog and opinion sharing between policymakers and researchers.

2.3. 5. The role of technology in enhancing research productivity in HEIs

Several steps need to be taken to support Cambodian academicians in improving research production. Both public and private higher education institutions should allocate a portion of their budgets to research activities based on their available resources and competencies. These institutions should also recruit qualified academicians who are committed to their disciplinary expertise and are dedicated to enhancing their country's general knowledge base (Eam & Song, 2022; Heng, 2024). Technology significantly enhances research productivity in Cambodian higher education institutions (HEIs) by providing advanced tools and resources, facilitating collaboration, and improving data management. Digital libraries and online databases such as Scopus and Web of Science enable researchers to access a vast array of academic journals and publications, thereby broadening their research scope and depth (Chua & Banerjee, 2013). Virtual collaboration tools such as Zoom and Microsoft Teams have become

essential, especially during the COVID-19 pandemic, for fostering international research partnerships and enabling seamless knowledge exchange (Massner, 2022). Analytical software such as SPSS and R enhances the accuracy and efficiency of research, allowing for more sophisticated and comprehensive studies (Wang et al., 2017). Additionally, technology facilitates the management and dissemination of research findings through digital repositories and open-access journals, thereby increasing the visibility and impact of Cambodian research on a global scale and making the audience feel proud and globally connected (Suber, 2012). By embracing these technological advancements, Cambodian HEIs can overcome traditional barriers and significantly boost their research productivity.

2.3. 6. Research ethics and integrity

Traditional academic roles encompass teaching, research, knowledge transfer, community involvement, and service at the local, national, and international levels. As an essential component, research can be described as a series of activities that include investigation, critical self-awareness, noncoercive critical thinking, reflection, and experiential learning. These activities require thoughtful monitoring and support to maintain ethics and integrity. Ensuring the goodness of research ethics and integrity involves balancing funding regulations, potential risks of harm, exploitation, conflicts of interest, cultural considerations, consent issues, biased sampling, misleading publications, and fostering responsibility and institutional productivity (MISTI, 2022).

The Law on Education and various policy documents mandate that Cambodian higher education become a hub for quality research, discovery advancement, and innovation. However, additional directions and support are needed to make this possible. Despite the limited research on research ethics and integrity, issues such as data manipulation and theft have garnered significant attention. This reflects the tension between ethical conduct and career advancement motivation, especially given the current research reward structure that values quality research production as crucial for career and power advancement. To address these challenges, this article suggests several strategies and policies to promote a culture of sustainable research ethics. These include providing institutional and individual support, translating research findings into institutional development and community benefits, enhancing individuals' quality of life, fostering communication and collaboration with stakeholders, and focusing on nationally sensitive research topics.

3. Problem Statements

The research landscape within Cambodian higher education institutions (HEIs) is fraught with significant challenges that hinder academicians' research productivity. These challenges include limited access to essential resources, insufficient funding, restricted academic freedom, and pervasive language and cultural barriers. These obstacles impede individual academic growth and stifle the overall research output and development of Cambodian HEIs (Long et al., 2021; Doeur, 2022; Heng et al., 2023; Chhaing, 2022; Chet et al., 2022). Despite the recognition of these issues, there still needs to be a substantial gap in formulating and implementing effective policies tailored to address the unique needs of the

Cambodian academic context. Given the critical role of research in driving innovation, economic development, and societal progress, the implementation of a comprehensive policy framework could significantly enhance the research capabilities of Cambodian academicians. This framework addresses the individual, institutional, and external factors affecting research productivity; promotes access to resources; secures adequate funding; ensures academic freedom; and overcomes language and cultural barriers. Moreover, fostering strong research collaboration, both within Cambodia and internationally, is crucial for sustained research development and could lead to a brighter future for Cambodian higher education. This study seeks to investigate the factors influencing research productivity in Cambodian HEIs, assess the impact of current institutional and external policies, and propose targeted policy recommendations. By doing so, it aims to create a conducive environment for research that can significantly uplift the academic and research standards of Cambodian higher education. Through a qualitative methods approach, including interviews and policy analysis, the study provides a comprehensive understanding of the current challenges and opportunities, offering actionable insights for policymakers and academic leaders to effectively enhance research productivity.

4. Research Questions

- 1). What individual factors influence the research productivity of academicians in Cambodian higher education institutions (HEIs)?
- 2). How do institutional factors affect research productivity within Cambodian HEIs?
- 3). What external factors impact the research productivity of Cambodian HEIs?
- 4). What strategies can be implemented to mitigate negative impacts and enhance positive influences on research productivity in Cambodian HEIs?

5. Research objectives

- 1). To identify and analyze the individual factors influencing the research productivity of academicians in Cambodian higher education institutions.
- 2). To examine and evaluate the impact of institutional factors on research productivity within Cambodian higher education institutions.
- 3). To investigate and assess the external factors affecting the research productivity of Cambodian higher education institutions.
- 4). To develop and propose strategies to mitigate negative impacts and enhance positive influences on research productivity in Cambodian higher education institutions.

6. Methodology

6.1. Study Design

This study employed a qualitative case study methodology to explore in depth the research productivity of academicians in Cambodian higher education institutions. The case study method was selected due to its depth, precision, and capacity to offer contextually pertinent insights. This detailed approach is especially suitable for examining contemporary research and productivity dynamics within the Cambodian context.

6.2. Participants

The study involved interviews with 25 leaders—15 males and 10 females—across five public universities in Cambodia's rural and urban areas, including Phnom Penh, Battambang, Banteay Meanchey, Svay Rieng, and Prey Veng. Participants were selected purposefully based on their university's geographic location, performance metrics, and documented efforts to implement research management manuals and policies. The selection included various leaders, faculty members, and researchers to ensure a diverse representation of experiences and circumstances. This approach aimed to capture a comprehensive view of research management practices and challenges across different types of institutions.

Table 3
Participant profiles

Participant Code	Age	Gender	HEIs	Work Experiences	Degree
P1	42	M	University A	12 years	PhD
P2	39	M	University A	10 years	PhD
P3	36	M	University A	8 years	PhD.
P4	42	F	University A	10 years	MBA
P5	32	F	University A	6 years	MBA
P6	38	M	University B	8 years	PhD
P7	35	M	University B	6 years	PhD
P8	37	M	University B	9 years	PhD
P9	37	F	University B	8 years	BA
P10	36	F	University B	7 years	M. Ed.
P11	42	M	University C	11 years	PhD
P12	38	M	University C	8 years	PhD
P13	36	M	University C	13 years	PhD
P14	39	F	University C	15 years	MBA
P15	38	F	University C	18 years	MPA
P16	42	M	University D	8 years	PhD
P17	34	M	University D	4 years	PhD
P18	35	M	University D	16 years	PhD
P19	30	F	University D	10 years	B.Sc.
P20	34	F	University D	12 years	MBA
P21	30	M	University E	8 years	PhD
P22	29	M	University E	12 years	PhD
P23	40	M	University E	8 years	PhD
P24	32	F	University E	12 years	MBA
P25	33	F	University E	12 years	MBA

6.3. Data collection

Semistructured interviews were also conducted to collect information on participants' experiences, perceptions, and practices within Cambodian higher education institutions (HEIs). The interview guide was developed based on research questions and insights from the literature, addressing various facets of the research environment at these institutions. A pilot study with researchers from two universities who were not part of the main study was carried out to refine the interview questions and techniques. Each interview lasted between 30 and 60 minutes and was conducted in Khmer, the native language of the participants, to ensure their comfort and understanding. All participants consented to audio-recording the interviews, which were transcribed verbatim for analysis. Emphasizing the importance of respecting and valuing the participants' cultural background and language significantly enhanced the sensitivity and depth of the research.

6.4. Data analysis

This study employed a qualitative approach, using thematic analysis to explore the intricacies of turnaround leadership in Cambodian high schools. Thematic analysis, as described by Braun and Clarke (2006), is essential for systematically identifying and interpreting critical themes within qualitative data. This method proved vital for revealing the detailed aspects of leadership dynamics observed in the study. The data analysis process consisted of several well-defined steps. Initially, the research team carefully reviewed the interview transcripts to fully understand the data and capture participants' genuine perspectives and experiences. The subsequent phase involved generating preliminary codes by assigning specific keywords or brief phrases to the data segments to highlight the central themes (Patton, 2015). In the following stages, the team engaged in an iterative theme development process, grouping related codes into broader themes to discern larger patterns within the data. This approach was crucial for organizing raw data into meaningful insights into turnaround leadership. Finally, the themes were defined and named to ensure that they were distinct and accurately reflected specific aspects of leadership. The outcome of this process was a comprehensive report presenting the findings clearly and in an organized manner.

6.5. Ethical considerations

The Research and Development Center at the National University of Battambang granted the study ethical approval. Ensuring that all participants provided informed consent was a key priority and involved ensuring that they comprehended the study's goals, that their right to withdraw at any point was met and that their data use and protection procedures were met. To maintain confidentiality, pseudonyms were used for participants and their affiliated institutions when reporting results. This method protected the privacy of individuals and institutions, adhering to ethical standards for research involving human subjects (Creswell & Poth, 2018).

6.6. Limitations

This study has several limitations, including the inherent subjectivity of qualitative data and the reliance on self-reported information from a small sample of 25 leaders, faculty members, and researchers across five public universities, both rural and urban. Additionally, the findings are context specific to

Cambodian higher education institutions, which may limit their generalizability to other settings. Despite these limitations, the study's careful design and methodological rigor aim to mitigate these issues and provide valuable insights within the specific context of the research.

7. Results and Discussion

7.1. Results

7.1.1. Research Question One: What individual factors influence the research productivity of academicians in Cambodian higher education institutions (HEIs)?

Advanced degrees and specialized training play crucial roles in equipping academicians for high-quality research. These qualifications are not just academic milestones but tools that enhance research productivity. This is particularly significant in Cambodia, where opportunities for advanced training and professional development are limited, underscoring the importance of continuous learning. Personal motivation and commitment to research are not just important; they are powerful. Academicians who are intrinsically motivated and have a strong passion for their field demonstrate the significant impact of personal drive on research productivity. One participant shared:

"As a university lecturer, I have faced academic difficulties that demotivate me from conducting research. Therefore, I need to improve my research skills to earn a doctoral degree for my future academic career. I am aware that research and publication will help me achieve my dream of attaining a professorship. Even though I am busy with my teaching and administrative tasks, I have spent my resources and time researching with my colleagues and students" (P4).

Additionally, the study showed that the availability of time for research activities significantly impacts productivity. Many Cambodian academicians are burdened with heavy teaching loads and administrative responsibilities, leaving them with insufficient time to engage in research. This is a common issue in many developing countries, where academic staff often assume multiple roles.

Access to research funding and resources is another crucial factor. Academicians who can secure grants and have access to modern research facilities and libraries are better positioned to produce quality research. However, the lack of these resources in Cambodian HEIs hampers the ability of academicians to engage in substantive research. One participant noted:

"In my view, the research productivity of academicians at my university is heavily influenced by the availability of time and access to resources, both of which require strategic interventions to enhance research outcomes. Finding good textbooks and academic papers is difficult for me, necessitating the university's purchases and subscriptions to support my learning and research (P14)."

Therefore, four main individual factors, namely, academic qualifications and training, teaching loads and administrative conditions, personal motivation and commitment, low research funding and library

resources, influence the research productivity of academicians in Cambodian higher education institutions.

7.1.2. Research Question Two: how do institutional factors affect research productivity in Cambodian HEIs?

According to the research findings perceived by participants, institutional factors play a pivotal role in shaping the research productivity of academicians within Cambodian HEIs. One of the most significant institutional factors is the availability and allocation of funding for research activities. Institutions that prioritize research by providing adequate financial support enable academicians to undertake more extensive and impactful research projects. In Cambodian HEIs, however, limited financial resources and inconsistent funding mechanisms significantly hamper the ability of researchers to conduct in-depth studies, thus affecting overall research output. Another crucial institutional factor is the presence of supportive policies and administrative frameworks that encourage research activities. Policies that offer incentives for research, such as reduced teaching loads for active researchers, grants, and awards, can significantly enhance research productivity. In Cambodian HEIs, the absence of robust research policies and insufficient administrative support often results in a lack of motivation and direction for academicians. Furthermore, institutional culture and leadership play essential roles in promoting a research-centric environment. Institutions that cultivate a culture of research excellence and provide strong leadership in research initiatives tend to have greater research productivity.

Table 4
Institutional factors affect research productivity

Code	Descriptions	Excerpts from Data Sources
1	Funding availability	HEIs must provide research grants to support their priority areas of research, their teaching and learning activities, and the quality of education they provide in conformity with the university's vision and government policy and strategies (P13).
2	Supportive policies	HEIs must effectively implement the research management manuals and establish additional supportive policies that facilitate researchers' and academicians' active involvement in research through incentives, academic recognitions, and academic promotions or career paths (P20).
3	A strong research culture	HEIs must cultivate a robust research culture by organizing national and international conferences/seminars/colloquiums to promote research findings dissemination, publication of best awards, research competitions, and other benefits (P5).

Therefore, institutional factors such as funding availability, supportive policies, and a strong research culture are critical in determining the research productivity of academicians in Cambodian HEIs.

7.1.3. Research Question Three: What external factors impact the research productivity of Cambodian HEIs?

The interview results indicate that external factors significantly influence the productivity of research on Cambodian higher education institutions (HEIs). One major factor is the national and international funding landscape. The availability of external funding is crucial for research development, particularly in resource-constrained settings. In Cambodia, limited access to such funding opportunities often restricts the scope and quality of academic research projects. Moreover, the competitive nature of securing international grants poses additional challenges, as researchers in Cambodian HEIs may need more support and experience to compete for these funds effectively.

Another significant external factor is collaboration and partnership with international research institutions and scholars. Such collaborations provide Cambodian academics access to advanced research methodologies, cutting-edge technologies, and broader academic networks. International collaborations enhance research quality and productivity by facilitating knowledge exchange and exposing researchers to global research standards. However, Cambodian HEIs often need help establishing and maintaining these international partnerships due to geopolitical constraints, limited networking opportunities, and the absence of robust institutional support for global collaboration.

Additionally, the national research policy environment plays a crucial role in shaping the research productivity of HEIs. It is not just a factor but a cornerstone. Supportive national policies that prioritize research and development, streamline funding processes, and promote academic freedom are not only beneficial but also essential for fostering a conducive research environment. This emphasis on the importance of national policies will help the audience feel the need for such supportive measures.

Figure 2 shows that 25 participants mentioned that national and international funding landscapes significantly promoted research productivity. However, 18 participants perceived supportive national policies to encourage them to enhance research productivity and innovation in Cambodian texts. Therefore, external factors such as access to funding, international collaboration, and supportive national policies are pivotal in enhancing the research productivity of Cambodian HEIs.

7.1.4. Research Question What strategies can be implemented to mitigate negative impacts and enhance positive influences on research productivity in Cambodian HEIs?

Based on the research findings, several strategic measures can be implemented to mitigate negative impacts and enhance positive influences on research productivity in Cambodian HEIs. One crucial strategy is the development of comprehensive research support ecosystems within institutions. This includes establishing dedicated research offices or centers to assist academics with grant writing, project management, and compliance with funding requirements. By providing administrative support, Cambodian HEIs can alleviate some of the burdens researchers face, allowing them to focus more on their research activities. One participant shared:

I think universities should seriously focus on implementing a research management manual (RMM) as an institutional policy guided by the Cambodian Ministry of Education, Youth, and Sport to support the research ecosystem in Cambodian HEIs. They should allocate financial support for academics and

researchers to develop their professional capacity through small research grants, publication fees, conference participation fees, incentives, and professorship promotions. This support would motivate researchers to actively engage in research and innovation for quality productivity and economic growth.

Another effective strategy is fostering a culture of collaboration and networking, both domestically and internationally. Encouraging and facilitating partnerships with other academic institutions, research centers, and industries can provide valuable opportunities for knowledge exchange and collaborative research projects. Furthermore, the implementation of mentorship programs, where experienced researchers guide and support junior faculty, plays a crucial role in building research capacity and promoting a culture of continuous learning and improvement. One respondent said:

Based on my experiences, I have published several academic manuscripts through national and international collaborations with relevant ministries and international university consortia in Asia and Europe through projects with the Japan International Cooperation Agency (JICA), the Korea International Cooperation Agency (KOICA), and the European Commission (EC). Furthermore, HEIs should establish good collaborations with international universities, development partners, and donor countries by signing memoranda of understanding to provide financial and technical assistance, support student and faculty exchanges, and mentorship programs to promote research cultures.

Therefore, Cambodian HEIs can significantly mitigate negative impacts and amplify positive influences on research productivity by enhancing research support systems and fostering collaborative networks, paving the way for the future of growth and development in research.

7.2. Discussion

Based on the research findings, enhancing research productivity in Cambodian higher education institutions (HEIs) requires a multifaceted approach addressing individual, institutional, and external factors. Like in the studies of Heng & Sol (2021), Doeur (2022), Heng et al. (2022), and Heng (2024), Cambodian academicians face significant challenges, such as limited access to advanced training, inadequate funding, heavy teaching loads, and a lack of resources (Chet et al., 2022; Chhaing and Phon, 2023; Kadikilo et al., 2024). Addressing these individual factors can create an environment that fosters academic growth and research excellence. Providing opportunities for professional development, reducing administrative burdens, and ensuring access to necessary research materials are essential steps in enhancing individual research productivity (Pentang & Domingo, 2024; Akosile & Ekemen, 2022). Academicians with advanced degrees and specialized training are often more equipped to conduct high-quality research and publish their findings in reputable journals, as supported by global studies indicating a correlation between higher qualifications and increased research output (Lee & Bozeman, 2005). Personal motivation and commitment to research play crucial roles, with intrinsically motivated academicians tending to be more productive (Bland et al., 2005).

Institutional and external factors also play crucial roles in shaping the research landscape. Institutions must prioritize funding allocation for research activities, develop supportive policies, and cultivate a

culture that values research. External support through international collaboration and funding opportunities can boost Cambodian HEIs to thrive in the global academic arena. Institutions prioritize research by providing adequate financial support to enable their academicians to undertake more extensive and impactful research projects. Studies by Altbach and Salmi (2011) and Bland and Ruffin (1992) highlight the importance of investing in research infrastructure, providing consistent funding opportunities, and offering robust administrative and technical support for fostering a productive research environment. Strategic measures such as establishing research support systems, fostering partnerships, and creating robust mentorship programs can help Cambodian HEIs overcome existing barriers and enhance their research capabilities. Access to external research grants and funding from government bodies, international organizations, and NGOs can significantly enhance the capacity of academicians to conduct robust research, especially in resource-constrained settings (Mak et al., 2021). Investing in state-of-the-art research facilities and ensuring access to relevant academic resources can also significantly enhance research capabilities. As noted by Katz and Martin (1997), collaboration is a crucial driver of research innovation and productivity. Cambodian HEIs can establish formal agreements with international universities to facilitate faculty exchange programs, joint research initiatives, and collaborative workshops (Nguyen et al., 2017).

8. Conclusion and Implications

8.1. Conclusion

Finally, the findings shown in this paper have many policy implications that can be utilized not only to enhance policies and strategies for the Ministry of Education, Youth, and Sport but also to accelerate the sustainable pursuit of the national research education roadmap in the Cambodian context. The direction and vision of the country, as per the National Strategic Development Plan, extended to Vision 2050 and the National TVET Policy, aim to build up the Cambodian economy to be strong and sustainable and in line with the regional and international contexts. Moreover, this case provides vision and input information for future government policy on research and development. It is a strong example in the context of higher education and involves formal staff development.

In Cambodia, as in other regions, governments continually introduce research policies to stimulate academic motivation and performance. Despite the compelling and dedicated roles in societal development in Cambodia, there need to be more substantial reviews to date examining policy prescriptions and policy analysis. These reviews often focus on prestigious educational works in Western countries, overlooking the unique context of Cambodia. Our chapter demonstrates that there has been inconsistency in the Cambodian arena of higher education for more than a decade. This chapter describes many heuristics that have been discovered in the literature. This paper also presents some existential rules and categorical implications related to academic mobility and research engagement, which are beneficial for obtaining a more comprehensive understanding of how academics are retained within higher educational institutions.

8.2. Implications

Based on our empirical findings and literature review, the following research implications are provided:

8.2.1. Faculty Members and Researchers

The empirical findings and literature review suggest that Cambodian higher education institution (HEI) faculty members and researchers must actively seek opportunities for advanced training and professional development to enhance their research productivity. By improving their academic qualifications and gaining specialized skills, they can better position themselves to conduct high-quality research. Additionally, researchers should prioritize building strong professional networks and collaborations both within and outside Cambodia. Engaging in international partnerships and collaborative projects can provide access to additional resources, advanced methodologies, and broader academic communities, enhancing their research output and impact.

8.2.2. Higher Education Institutions

Higher education institutions in Cambodia need to create a supportive research environment by implementing comprehensive research support systems. Establishing dedicated research offices to assist with grant applications, project management, and compliance can significantly reduce administrative burdens on researchers. Furthermore, institutions should invest in state-of-the-art research facilities and ensure access to relevant academic resources, such as journals and databases. By fostering a culture of research excellence and providing incentives, such as reduced teaching loads for active researchers, institutions can motivate faculty members to engage more deeply in research activities.

8.2.3. Relevant Ministries and Policy Makers

Relevant ministries and policymakers must recognize the critical role of research in national development and prioritize the formulation and implementation of supportive research policies. Ensuring consistent and adequate funding for research activities is essential. Policies should be tailored to address the unique challenges faced by Cambodian HEIs, such as limited access to resources and heavy teaching loads. Additionally, creating national research agendas and frameworks that promote academic freedom and facilitate international collaboration can significantly boost research productivity. Ministries should also consider establishing funding programs and grants that specifically target research development in higher education.

8.2.4. Relevant University Consortium and Development Partners

University consortia and development partners are vital for enhancing research productivity in Cambodian HEIs. By facilitating partnerships and collaborative initiatives, these entities can provide valuable support and resources to researchers. Developmental partners can offer funding opportunities,

technical expertise, and access to global research networks. Additionally, consortia can organize workshops, conferences, and training programs to build research capacity and foster a culture of continuous learning and improvement among Cambodian academicians. By working together, university consortia and development partners can create a more robust and dynamic research environment in Cambodia's higher education sector.

Declarations

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References

1. Akosile AL, Ekemen MA. (2022). The Impact of Core Self-Evaluations on Job Satisfaction and Turnover Intention among Higher Education Academic Staff: Mediating Roles of Intrinsic and Extrinsic Motivation. *Behavioral Sciences*, 12(7):236. <https://doi.org/10.3390/bs12070236>
2. Bland, C. J., Altbach, P. G., & Salmi, J. (2011). The road to academic excellence: The making of world-class research universities. World Bank Publications. Retrieved from <https://documents1.worldbank.org/curated/en/688061468337210820/pdf/The-road-to-academic-excellence-the-making-of-world-class-research-universities.pdf>
3. Bland, C. J., & Ruffin, M. T. (1992). Characteristics of a productive research environment: Literature review. *Academic Medicine*, 67(6), 385-397. <https://doi.org/10.1097/00001888-199206000-00010>
4. Bland, C. J., Center, B. A., Finstad, D. A., Risbey, K. R., & Staples, J. G. (2002). A theoretical, practical, predictive model of faculty and department research productivity. *Academic Medicine*, 77(4), 385-395. <https://doi.org/10.1097/00001888-200503000-00006>
5. Braun, V., & Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
6. Center, B. A., Finstad, D. A., Risbey, K. R., & Staples, J. G. (2005). A theoretical, practical, predictive model of faculty and department research productivity. *Academic medicine: journal of the Association of American Medical Colleges*, 80(3), 225–237. <https://doi.org/10.1097/00001888-200503000-00006>
7. Chhaing, S. and Phon, S. (2023), "Motivation of academics in the Global South: a case from Cambodia higher education", *Journal of Applied Research in Higher Education*, Vol. 15 No. 5, pp. 1530-1543. <https://doi.org/10.1108/JARHE-08-2022-0241>

8. Chhaing, S. (2022). Insights into life of academics at private higher education institutions in Cambodia in light of neoliberalism. *Cogent Education*, 9(1).
<https://doi.org/10.1080/2331186X.2022.2062891>
9. Chet C, Sok S, Sou V. (2022). The Antecedents and Consequences of Study Commitment to Online Learning at Higher Education Institutions (HEIs) in Cambodia. *Sustainability*, 14(6):3184.
<https://doi.org/10.3390/su14063184>
10. Chet, C., Ford, D., & Ahrens, L. (2022). Reforming Cambodian universities: building best practice at the Royal university of Phnom Penh. In *Education in Cambodia: From Year Zero toward international standards* (pp. 241-257). Singapore: Springer Nature Singapore.
11. Chua, A. Y. K., & Banerjee, S. (2013). Customer knowledge management via social media: The case of Starbucks. *Journal of Knowledge Management*, 17(2), 237-249.
<https://doi:10.1108/13673271311315196>
12. CICP (2016). *Doing Research in Cambodia: Making Models that Build Capacity*, Cambodian Institute for Cooperation and Peace, Phom Penh, Cambodia, retrieved from
<https://cicp.org.kh/publications/doing-research-in-cambodia-making-models-that-build-capacity/>
13. Creswell, J. W., & Poth, C. N. (2018). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. Sage Publications.
14. Doeur, B. (2022). Promoting higher education reforms in Cambodia: Challenges and the way forward. *Cambodian Journal of Educational Research*. <https://doi.org/10.62037/cjer.2022.02.02.07>
15. Eam, P. & Song, S. (2022). Technology integration of Cambodian higher education: emerging changes since covid-19 and notable challenges. Paper prepared for the Global Education Monitoring Report. Retrieved from <https://www.unesco.org/gem-report/sites/default/files/medias/fichiers/2023/09/SopheakandPhyrom.pdf>
16. Heng, K. & Sol, K. (2021). Academic research in Cambodia: Progress, challenges, and ways forward. *Cambodian Journal of Educational Research*. <https://doi.org/10.62037/cjer.2021.01.02.02>
17. Heng, K. (2024). Challenges and developments in university research in Cambodia: a case study of two universities. *High Educ* 87, 1593–1613. <https://doi.org/10.1007/s10734-023-01080-2>
18. Heng, K., Hamid, M. O., & Khan, A. (2022). Research engagement of academics in the Global South: the case of Cambodian academics. *Globalization, Societies and Education*, 21(3), 322–337.
<https://doi.org/10.1080/14767724.2022.2040355>
19. Hok, T., Daengdej, J., & Vongurai, R. (2021). Determinants of Student Satisfaction on Continuing Education Intention: A Case Study of Private University in Cambodia. *AU-GSB E-JOURNAL*, 14(2), 40-50. <https://doi.org/10.14456/augsbejr.2021.13>
20. Kadikilo, A. C., Nayak, P., & Sahay, A. (2024). Barriers to research productivity of academics in Tanzania higher education institutions: the need for policy interventions. *Cogent Education*, 11(1).
<https://doi.org/10.1080/2331186X.2024.2351285>
21. Katz, J. S., & Martin, B. R. (1997). What is research collaboration? *Research Policy*, 26(1), 1-18.
[https://doi.org/10.1016/S0048-7333\(96\)00917-1](https://doi.org/10.1016/S0048-7333(96)00917-1)

22. Kao, S. & Shimizu, K. (2020). A review on STEM enrollment in higher education of Cambodia: Current status, issues, and implications of initiatives. *Journal of International Development and Cooperation*, 26(1), 123-34. <https://doi.org/10.15027/48743>
23. Lee, S., & Bozeman, B. (2005). The Impact of Research Collaboration on Scientific Productivity. *Social Studies of Science*, 35(5), 673-702. <https://doi.org/10.1177/0306312705052359>
24. Long, S., Duang-ek-anong, S., & Vongurai, R. (2021). Determinants of business education on student satisfaction in higher education: A case study in Cambodia. *The Journal of Asian Finance, Economics and Business*, 8(3), 1405-1416. <https://doi.org/10.13106/JAFEB.2021>
25. Mak, N., Sok, S., and Un, L. (2021). Finance in Public Higher Education in Cambodia, Working Papers 115, Cambodia Development Resource Institute (CDRI). Retrieved from <https://cdri.org.kh/publication/finance-in-public-higher-education-in-cambodia>
26. Massner, K. C. (2022). The Use of Videoconferencing in Higher Education. IntechOpen. <https://doi.org/10.5772/intechopen.99308>
27. MISTI. (2022). Research ethics. Retrieved from <https://www.misti.gov.kh/public/file/202206141655189999.pdf>
28. MoEYS. (2014). Policy on higher education vision 2030. Retrieved from <https://planipolis.iiep.unesco.org/2014/national-policy-higher-education-vision-2030-6039>
29. MoEYS (2023). Annual Educational Congress on Education, Youth, and Sport in academic year 2022-2023. Ministry of Education, Youth, and Sport, Phnom Penh, Cambodia
30. Mehrad, A. (2020). Evaluation of academic staff job satisfaction at Malaysian universities in the context of Herzberg's Motivation-Hygiene Theory. *Journal of Social Science Research*. <https://doi.org/10.24297/jssr.v15i.8725>
31. Maisano, D.A., Mastrogiacomo, L. & Franceschini, F. (2023). Empirical evidence on the relationship between research and teaching in academia. *Scientometrics* 128, 4475–4507 . <https://doi.org/10.1007/s11192-023-04770-x>
32. Naseer, S. & Rafique, S. (2021). Moderating Role of Teachers' Academic Support between Students' Satisfaction with Online Learning and Academic Motivation in Undergraduate Students during COVID-19. *Education Research International*. <https://doi.org/10.1155/2021/7345579>
33. Nguyen, T.V., Ho-Le, T.P. & Le, U.V. (2017). International collaboration in scientific research in Vietnam: an analysis of patterns and impact. *Scientometrics* 110, 1035–1051. <https://doi.org/10.1007/s11192-016-2201-1>
34. Nhem, D. (2022). Quality in higher education: what do students in Cambodia perceive? *Tertiary Education and Management*, 28 (1). <https://doi.org/10.1007/s11233-021-09084-2>
35. Patton, M. Q. (2015). *Qualitative Research & Evaluation Methods: Integrating Theory and Practice*. Sage Publications.
36. Pentang, J. T., & Domingo, J. G. (2024). Research self-efficacy and productivity of select faculty members: inferences for faculty development plan. *European Journal of Educational Research*, 13(4), 1693-1709. <https://doi.org/10.12973/eu-jer.13.4.1693>

37. Sam, R., Ahmad, N., & Hazril, J. (2012a). Cambodia's Higher Education Development in Historical Perspectives (1863-2012). *International Journal of Learning and Development*, 2(2), 224-241. <https://doi.org/10.5296/ijld.v2i2.1670>
38. Sam, R., Ahmad, N., & Hazril, J. (2012b). Establishment of Institutional Policies for Enhancing Education Quality in Cambodian Universities. *International Journal of Higher Education*, 1(1), 112-127. <https://doi.org/10.5430/ijhe.v1n1p112>
39. Sam, R., Souriyawongsa T., Ahmad, N., & Hazril, J. (2013 a). Investigating the Institutional Policies that contribute toward the Students' Academic Success in a Cambodian University. *International Journal of Humanities and Social Science*, 3(1), 113-124.
40. Sam, R., Ahmad, N., & Hazril, J. (2013 b). "Conceptualizing Institutional Policies for Students' Academic Success in Cambodian Universities: What matters for policy?". *Asian Social Science*, 9(10), 283-294. <https://doi.org/10.5539/ass.v9n10p283>
41. Sam, R., Ahmad, N., & Hazril, J. (2013c). Academic Adjustment Issues in a Malaysian Research University: The Case of Cambodian, Laotian, Burmese, and Vietnamese Postgraduate Students' Experiences. *International Education Studies* 6(9), 13-22. <http://dx.doi.org/10.5539/ies.v6n9p13>
42. Sen, V. (2022). Higher education in Cambodia: The constraining effects of traditional values. In *Education in Cambodia: From Year Zero toward international standards* (pp. 97-112). Singapore: Springer Nature Singapore. http://dx.doi.org/10.1007/978-981-16-8213-1_6
43. Tieng, M., Yoeng, H., Sam, R., Nhean, V., Hour, R., and Doeurn, E. (2023). Institutional Integration Factors That Impact Students' Academic and Intellectual Developments: A Case Study of Three Cambodian Rural Universities, *International Journal of Learning and Development*, 13 (3), 39-64, <https://doi.org/10.5296/ijld.v13i3.21106>
44. Sinniah, S., Al Mamun, A., Md Salleh, M. F., Makhbul, Z. K. M., & Hayat, N. (2022). Modeling the significance of motivation on job satisfaction and performance among the academicians: the use of hybrid structural equation modeling-artificial neural network analysis. *Frontiers in Psychology*, 13, 935822. <https://doi.org/10.3389/fpsyg.2022.935822>
45. Suber, P. (2012) Open Access. MIT Press, Cambridge, MA. <https://doi.org/10.7551/mitpress/9286.001.0001>
46. Szromek AR, Wolniak R. Job Satisfaction and Problems among Academic Staff in Higher Education. *Sustainability*. 2020; 12(12):4865. <https://doi.org/10.3390/su12124865>
47. Teferra, D., & Altbach, P. G. (2004). African higher education: Challenges for the 21st century. *Higher Education*, 47(1), 21-50. <https://doi.org/10.1023/B:HIGH.0000009822.49980.30>
48. Un, L., & Sok, S. (2022). Education Policy and Project Intervention in Cambodia: Its Development Discourse. In *Education in Cambodia: From Year Zero toward international standards* (pp. 215-239). Singapore: Springer Nature Singapore. https://doi.org/10.1007/978-981-16-8213-1_12
49. Vuong, Q. H., Napier, N. K., Ho, T. M., Nguyen, V. H., Vuong, T. T., Pham, H. H., & Nguyen, H. K. T. (2018). Effects of work environment and collaboration on research productivity in Vietnamese social

sciences: evidence from 2008 to 2017 scopus data. *Studies in Higher Education*, 44(12), 2132–2147. <https://doi.org/10.1080/03075079.2018.1479845>

50. Wang, Y., Kung, L., Wang, W. Y. C., & Cegielski, C. G. (2017). An integrated big data analytics-enabled transformation model: Application to health care. *Information & Management*, 55(1), <https://doi.org/10.1016/j.im.2017.04.001>

51. Zhou, T., Law, R., & Lee, P. C. (2022). “What motivates me?” Motivation to conduct research of academics in teaching-oriented universities in China. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 31, 100392. <https://doi.org/10.1016/j.jhlste.2022.100392>.

Figures

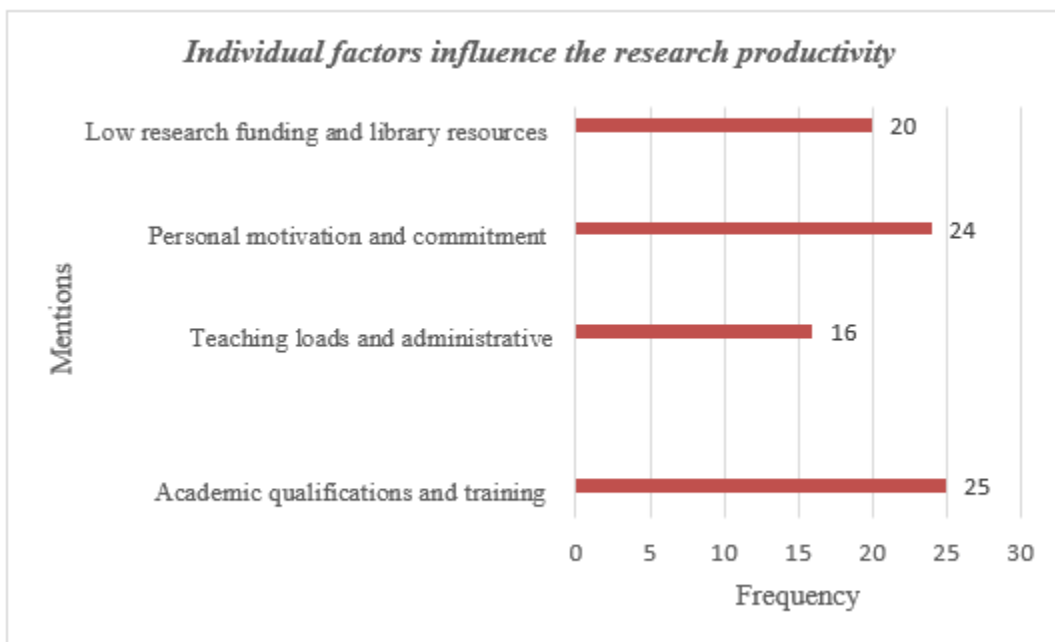


Figure 1

Individual factors influence research productivity

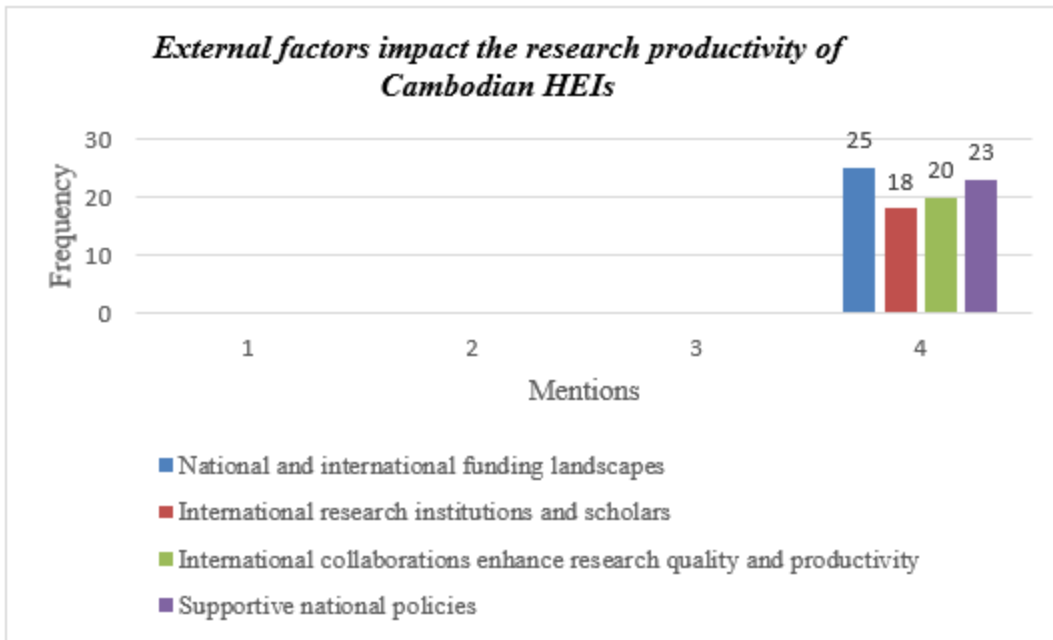


Figure 2

External factors impact the research productivity of Cambodian HEIs