Impact of Electronic Information Resources on Research Productivity: A Systematic Review

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Abstract

The growth of electronic resources has changed the attitude of the research culture and significantly influences research productivity. Publication of research outputs enables the exchange of ideas among the academic and research community. Moreover, increasing the research output is important for advancing the knowledge, ranking of authors and higher education institutions for various reasons such as recruitment, promotion, funding etc. To identify the research output, design a robust study, and present the major research results from other studies, the authors have explored major studies conducted worldwide from 2020 to 2025. Various factors identified for increasing research productivity were personal, environmental, and behavioural patterns, as well as financial support, modern ICT facilities. The science disciplines dominate research publications more than the social sciences. Teaching workload and inadequate policy for research-related activities slowed research publications.

Keywords

Research Output; Research Productivity; Electronic Resources; Review study; Research Publications

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Introduction

E-Resources are electronic resources available in electronic format or digital format can be accessed through computer by many users from anywhere at any time and widely used in academic and research institutions across the word (Jamali & Ahmed, 2024). The growth of electronic resources has changed the research culture, and most research materials are now published online, allowing the academic and research community to predominantly access electronic resources (Ani, Ngulube and Onyancha, 2025). Research skills play significant role in influencing research productivity. Universities and research institutions across the world are considered producers of new knowledge and play an important role in high research productivity among the academic and research community (Anandhalli, 2024).

The academic and research institutions in this digital environment need to play lead role in teaching, research and extension activities. The universities need to perform multiple roles which are influenced by variety of factors such as academic, department, and the university. One of the primary expectations of the universities is to improve their academic and research community research output by conducing and performing research (Muhammed et al., 2023). Moreover, measuring the research outcomes of the scientific community is increasingly important, as almost every research assessment decision is based on the merits of the results produced by researchers. There are many Scientometric indicators developed to quantify the production of research papers by researchers and the number of papers published over a period, with citation, and h-index received (Alanso et al, 2009).

Publication of research results allows to exchange their ideas to other researchers and receive critical comments on their work. By publishing scholarly articles in high-impact-factor journals, scholars acquire recognition, reputation, and value. Acquiring positions, awards, funds, promotion etc. are usually determined by publication output by every scientific institution. A quantitative measure is considered a well-retained metric for evaluating scientific productivity (Pal & Sarkar, 2020). The outcomes of research published in scholarly journals are considered research performance by the academic and research community, and papers indexed in Scopus or Web of Science are accepted by organisations for various purposes, such as new recruitment, promotion, author and institution ranking, and so on.

Insightful review articles are considered a vital part of research, and an extensive review process helps researchers identify gaps, design strong studies, represent their importance, and communicate research results conducted across the world (Bahishti, 2021). In these circumstances, this review article enables the authors to find out the quantity of works published across the world during certain period and important findings achieved by the authors.

Objectives of the study

The following are the objectives of the study

1. To find out the publication trend between the years 2020 to 2025
2. To investigate the usefulness of electronic resources in supporting and influencing of research productivity
3. To identify the research gap, designing a strong study and communicating research results

Methodology

This paper is intended to study past research engaged across the world on academics and researchers' engagement with research productivity. To collect the literature, the authors have used various methods, including reviewing articles on research productivity from national and international journals, databases, and websites. Different keywords used to search for articles included: research productivity, research output, research engagement, factors influencing research productivity, etc. In addition to the above-mentioned search mechanism, the reference list of the articles reviewed were also observed and the relevant articles were retrieved, reviewed and used in this paper.

The main aim of this review study is to explore all the studies that deal with research productivity, engagement, research output and to synthesise the relevant studies based on the factors through which the research productivity of the researchers has been increased, the methods followed to increase, the institutions' support for research engagement and productivity and the challenges faced. Only studies found in English and articles published in national and international journals were included in this study.

Discussion

The study results have been discussed chronologically. In 2025, Pascua (2025) conducted a study and the study results revealed that holistic approach involving financial help, modern facilities, technology, and institutional backing will enhance the research productivity. In the same year, a study conducted by Sackdanouvong (2025) investigated the factors that motivated academics' research productivity revealed that the prominent factors, such as recognition, respect, and tenure, were the extrinsic factors that motivated academics to conduct research. Whereas scholarly development, contributions, and research interests were considered intrinsic motivating factors. The study identified that research support, culture, faculty size, and social networks were the most significant factors contributing to research productivity.

Anandhalli (2024) assessed the research productivity of teaching faculty members in Akkamahadevi Women's University, Vijayapura, and found that faculty from the science discipline have high research productivity published in high-quality journals indexed by Scopus and Web of Science. However, the social science faculty excel in publishing papers in conference proceedings and awards of Ph.D. In the same year, Das (2024) explored the factors influencing research productivity in Higher Education Institutions in India and found that gender and work experience played a major role in enhancing research productivity, and that individual and institutional motivational factors also played a significant role in the growth of publications. The findings of the study also revealed that research support and academic environment is still not sufficient to influence the research activities. Helali (2024) found that the publication ratio of faculty members in human and social science fields was higher than that in medical and other scientific fields, and 30% agreed that their institutions funded research projects and encouraged them to participate. Majority reported that they were not allocated time and special labs for scientific research. It was also found that getting recent scientific research papers and participating scientific seminars were the issues. The majority applied for projects but were rejected without valid reasons. Correlation results revealed that a strong relation exists between the hours allocated for scientific research and the number of papers published, and another result revealed that a relation exists between the number of papers published and the availability of funded research opportunities by the institute. Again, in the same year a study conducted by Manojkannan and Sarangapani (2024) stated that e-resources becomes indispensable source for academic excellence particularly for post graduate students and

research scholars and stated that if the issues are properly addressed, the ulilisation of resources will be significant which will empower the scholars to produce high-quality research, foster innovation and meaningful contribution. Sayed (2024) conducted a study to assess research productivity and quality at the Lebanese American University, which revealed that academics in hard disciplines (natural, computer, and mathematics) exhibit high research productivity and citation rates, but both demonstrate comparable research quality across targeted journal quartiles. Conference proceedings preferred by hard disciplines, while books and book-chapters were the popular medium for soft disciplines (social, education, communication and language). In individual factors, associate professors and underage of 50 in hard disciplines showed higher research productivity than soft disciplines. In the case of gender, slight increase in men found in hard discipline and women in soft discipline. International collaboration networks are one of the major predictors of advanced research productivity for hard disciplines. Workload and institutional research policy played negative impact for both hard and soft disciplines. Orfan et al. (2024) studied faculty research productivity in Afghanistan and found that it was considerably low, with the majority publishing 1-3 articles in national and international journals and a small number publishing in Web of Science, Scopus, or PubMed, co-authored with other countries' institutions. They believed policy directives, and individual and institutional factors influenced their research productivity. Significant correlation found between participants characteristics, particularly years of teaching experience and research productivity. Widdatallah (2024) assessed research performance among undergraduate media and communication students, revealing differences between male and female respondents. The study found that individual characteristics, institutional incentives, and competitive spirit can improve overall performance.

In the year 2023, Muhammad have investigated individual and institutional factors on the research productivity of university academics found that institutional factors influenced research productivity than individual productivity and the reason could be majority of the respondents were in the under-30 age group who are likely novice researchers, had recently begun their research and higher workloads in terms of teaching and learning and committee members. In the same year, Tolentino (2023) explore the research outputs and publications of education leaders revealed that they lack ideas and technical skills to present and research output and do not have idea of how to publish research paper. Although the Schools Division encourages them to develop research projects, they have not conducted training or seminars focusing on publication and peer-reviewing of research.

In 2022, Phuong et al. explored the factors influencing research productivity among the academic staff at the University of Social Sciences and Humanities, Vietnam. The study results revealed that because of heavy teaching workload, the research productivity found low. University library has not satisfied their research demands. The university research policy was not encouraging the academic staff in doing more research as they have not provided enough fund to carry out research project and attend conferences. Personal career development factors have a significant influence on research productivity and a significant impact on research by level of experience. Vaghela and Bhatt (2022) found that institutional support, research inclination, and work environment were positively and significantly associated with research productivity, and the impact of the work environment was greater than that of the other two variables. Ukwoma and Ngulube (2022) that number of publications was not evenly distributed among the journals, but increase in citation found, and contributors were from different continents and the information obtained from the study is relevant to emerging researchers and libraries for choosing the right journals to publish their research work and collection development policy for libraries.

Tahsildar and Hasani (2021) assessed faculty-perceived research skills and research productivity at a public university in Afghanistan, and the study results revealed that the faculty's overall research skill level was not much higher (around 64%), which indicates that they need to improve their research skills. Henry et al (2020) assessed the factors contributing towards research productivity revealed that research productivity of academic staff is influenced by personal, environmental and behavioural factors. Pal and Sarkar (2020) asserted the importance of scientometric study for measuring the research productivity of the researchers and institutions across the world, and it is a critical area of concern for administrators, policy-makers, and funding agencies. Based on the above studies, the summary of all the studies is listed in the table 1.1

Table 1: Summary of review studies on impact of e-resources on research productivity

Year	Authors	Title	Findings
2020	Henry, C., Ghani, N.A.M., Hamid, U.M.A. and Bakar, A.N. Pal, J.K. and Sarkar, S.	Factors contributing towards research productivity in higher education. Understanding research productivity in the realm of evaluative scientometrics	Research productivity is influenced by personal, environmental and behavioural factors. Measuring research productivity is important for administrators, policy-makers, and funding agencies.
2021	Tahsildar, N. and Hasani, R.	Faculty-perceived research skills and research productivity: a case study at a public university in Afghanistan.	Faculty research output, in terms of both quantity and quality, was low.
2022	Phuong, B.H., Chi, D.T.P., Quang, D.M., Quang, B.N. and Dieu, B.T.T. Vaghela, K. and Bhatt, K. Ukwoma, S.C., and Ngulube, P.	Factors Influencing Research Productivity among the Academic Staff: A Case Study at the University of Social Sciences and Humanities, Vietnam. Factors and determinants affecting research productivity of academics of technical institutions in Gujarat. Research Productivity and Citation of Open and Distance Learning Journals (2009-2018): A Citation Analysis.	Because of heavy teaching workload, the research productivity found low and policy was not encouraging as no fund for research related activities. Institutional support, research inclination, and work environment were the variables influenced research productivity positively and significantly Number of publications was not evenly distributed among the journals,
2023	Muhammad, K et al. Tolentino, R.P.G.	Investigating the effects of individual and institutional factors on the research productivity of university academics: a comprehensive analysis. Preliminary Survey on Research Outputs and Publications of Education Leaders with Research Degrees.	Institutional factors influenced research productivity Do not have idea of how to publish research paper
2024	Anandhalli, G. Das, A. Helali, R.G.M. Manojkannan, L. and Sarangapani, R. Sayyed, K. Widdatallah,	Assessment of Research Productivity among Teaching Faculty Members: A case study of Karnataka State Akkamahadevi Women's University, Vijayapura. Factors Influencing Research Productivity in Higher Education Institutions in India. An Exploratory Study of Factors affecting Research Productivity in Higher Educational Institutes using Regression and Deep Learning Techniques. The Role of E-Resources in Shaping Academic Excellence: Perspectives from Postgraduate and Doctoral Scholar. Assessing Research Productivity and	Science discipline has high research productivity in Scopus and Web of Science, whereas social science published in conference proceedings and awarded Ph.D. Gender and work experience played major significant role in enhancing the research productivity human and social science fields faculty members publication ratio was higher than medical and other scientific fields faculty members. Getting recent articles and participating seminar was issue. E-resources becomes indispensable source for academic excellence particularly for post graduate students and research scholars Hard disciplines (natural, computer and mathematics) exhibit high research productivity and citation and conference proceedings preferred

		Quality across disciplines in the School of Arts and Sciences at the Lebanese An Evaluation of Research Performance: A survey study of Undergraduate Media and Communication Students.	by hard discipline while books, and chapter preferred by soft discipline. Individual characteristics, institutional incentives and competitive spirits can improve the overall performance.
2025	Pascua, W.C. Sackdanouvong, K.	Motivational Factors Influencing Research Productivity among Higher Education Faculty. An Investigation of Factors that Motivate Academics to Conduct Research and Research Productivity in Lao Public Universities.	Financial help, modern facilities, technology, and institutional backing enhance the research productivity. Recognition, respect, and tenure were the extrinsic factors motivated the academics to conduct research.

Conclusion

This study aimed to investigate the influence of electronic resources on research productivity worldwide over a specific period. Varieties of studies have been explored and reviewed. From various studies, we have identified important findings that clearly indicate that personal, environmental, and behavioural patterns influence research productivity. Heavy teaching workload and inadequate policy for research-related activities were the reasons for the low research-related activities. Institutional factors played a major role in influencing the research productivity, which is noted in a few studies, and research inclination and work environment played an additional role in improving the research productivity. In one study, participants were found to be unaware of research publications, and in a few studies, science disciplines were found to dominate research publications, as they have published research articles in Scopus- and Web of Science-indexed journals. Gender and work experience influenced research productivity. Individual characteristics, institutional incentives and competitive spirits were considered important factors for improving the overall performance. Finally, financial support, modern ICT facilities, recognition, respect, and tenure were identified as key factors that influenced research productivity. This study enabled us to identify the issues faced by the academic and research community when publishing their research, the challenges posed, and the key factors that influenced their research productivity. Even though these findings are relevant to the particular environment, some common factors across research environments can be addressed by administrators to improve their academic and research communities' publications.

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