AL-HAYAT Research Journal

ISSN (Online): 3006-4767
ISSN (Print):: 3006-4759

Volume 3 Issue 2 (Jan-Mar 2026)

Library and Information Science PhD productivity in Pakistan: Mapping of Institutional, Geographic, and Temporal Dimensions

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Abstract

This study presents a comprehensive analysis of doctoral-level research trends in Library and Information Science in Pakistan, focusing on gender distribution, institutional contribution, temporal growth, sectoral representation, geographic disparities, and supervisory productivity. Quantitative approach was used to carry out the current study. Bibliometric analysis method was adopted. The findings reveal significant imbalances in the productivity of PhD dissertations. The gender-based analysis highlights male PhD graduates outnumbering (74%) their female counterparts. Institutional distribution indicates a strong concentration of doctoral output within a limited number of universities, particularly those located in Punjab. The temporal analysis demonstrates a clear upward trend in research productivity, with a significant increase in doctoral output observed in recent years. Sector-wise findings reveal the overwhelming dominance government sector universities in doctoral research output (94%). Geographic analysis further exposes regional disparities, with research productivity heavily concentrated in Punjab (81%), while other regions exhibit comparatively low output. Finally, the study identifies a concentration of supervisory productivity among a small group of highly active scholars, while many supervisors contribute minimally. Overall, the study provides valuable insights for policymakers and academic institutions to enhance equity, strengthen institutional capacity, and support sustainable development in Library and Information Science research in Pakistan.

Keywords: *Research trends; PhD dissertations; Theses; Geography; University; Graduates; Pakistan*

1. Introduction

Rapid and continuous evolution of social, cultural and technological contexts has immensely affected all memory institutions including libraries and related professions. Planning and development of libraries and information services highly depends on research. Research is vital for generating knowledge and for the development of professions. LIS education in Pakistan has witnessed a tremendous growth in research

programs in different public and private sector universities (Ameen, 2011). Research plays an important role in nation building and national growth of the countries. It has multiple dimensions and roles in different perspectives. History reveals that without research and education there is no development in any field of life.

One major aspect of education is research productivity. Research productivity refers to research quantity and quality in its production and growth. There are various subjects and fields that produce research. Academic research productivity is an important area where the universities in government and private sector are imperative to conduct research in different schools and areas of research. Library and information science is an important subject where there is plenty of research productivity all over the world. Pakistan is an underdeveloped country and there are ten universities where PhD education and research is being offered in library and information Sciences. Although postgraduate LIS education has grown significantly in Pakistan, there is still a need to conduct analysis of research productivity in Pakistan, especially when it comes to systematic examination of PhD dissertations. By conducting a thorough evaluation of PhD dissertations submitted to Pakistani universities, this work aims to provide evidence-based suggestions for enhancing the effectiveness of PhD programs in LIS by analyzing productivity, patterns, and trends.

Several ways have been developed to review, evaluate and assess research trends to determine the output of individuals, organizations, and nations in the total sum of knowledge produced. Bibliometric tools have proven useful in examining research trends and productivity in LIS. Quantitative analyses of publication counts offer empirical insights for framing equity-driven policies (Siddique et al., 2023; Abramo et al., 2018). The bibliometric measurements traditionally have been used to measure research productivity such as the analysis of publication and citation frequency etc. (Abramo & D'Angelo, 2014). These measurements provide quantitative data about research work contributions and serve to measure performance levels for allocation of resources (Hoffmann et al., 2015). The present study addresses a key gap by systematically examining distribution of PhD graduates across ten Pakistani LIS schools focusing on how institutional, regional, and demographic structures shape research productivity.

2. Research Questions

i. What is the contribution of LIS Schools in Pakistan for producing PHD graduates productivity?
ii. Is there any gender inequality in doctoral-level graduation in the LIS programs in Pakistan?
iii. What have been the temporal trends of growth and development of LIS doctoral research in Pakistan?
iv. Which are the major regional and sectorial inequalities in influencing the research output, in Pakistan?

3. Literature Review

Productivity in research has been recognized as a vital criterion for assessing academic development and maturity in a particular field of study. Productivity in Library and Information Science (LIS) encompasses scholarly contributions, intellectual advancement, and the ability of institutions to produce and disseminate knowledge. LIS research productivity in Pakistan has developed gradually, especially after the expansion of higher education and the introduction of postgraduate and doctoral studies.

LIS productivity, incorporating its institutional, geographical, and time-based aspects, has to be comprehended to understand its patterns, differences, and developments. This literature review aims to present a overall understanding of LIS productivity through research studies conducted domestically and around the world.

Research productivity in the field of LIS can be measured through various bibliometric measures like publication counts, citation analysis, authorship, and institutional affiliations. Research in this area suggests that evaluating research productivity can help identify areas of strength and weakness, and development in this discipline. For example, an in-depth analysis of research in the field of library science in Pakistan revealed over 1300 research articles, showing an increase in productivity, though hampered by low funding, inadequate training, and lack of expert staff (Ali & Ahmad, 2024).

Research productivity in the domain of Library and Information Science (LIS) is an area which has been widely acknowledged as an indicator of growth in the domain, as well as in the area of academic development. In the global arena, the scope of postgraduate research, including MPhil, offers an essential window into the development of the domain of LIS as an area of scholarship, including the emergence of new trends, thematic focus, diversity, and institutional capacity (Edwards, 2013; Hood & Wilson, 2001).

The determinants of research productivity in the domain of LIS, including institutional, personal, and collaborative factors, have been extensively researched, which has an impact on the research productivity of scholars in the domain of LIS in Pakistan (Khan et al., 2025).

Moreover, it can be seen from the institutional mapping of LIS research productivity in Pakistan that it is highly concentrated within a small number of universities. Bibliometric analysis of journal and institution-based publication data indicates that some universities, like the University of Punjab and University of Peshawar, have historically been at the forefront of producing LIS literature. For example, an analysis of the *Pakistan Journal of Library and Information Science* indicated that affiliation with an institution was an important factor in assessing research productivity, where some universities have been at the forefront of producing literature in this domain (Warraich & Ahmad, 2011).

Research on PhD dissertations in the domain of library and information science indicates variations in terms of productivity, citations, and access to scholarly literature among different universities (Jaffri et al., 2020). Moreover, regional institution-based analysis, like in Khyber Pakhtunkhwa, indicates that research productivity in this domain is highly concentrated within a few universities, where a total of 392 publications have been analyzed over several decades, indicating variations in terms of institutional engagement in this domain of research (Ahmad et al., 2024).

Glanzel and Schubert (2004) have indicated through co-authorship network analysis that high-productivity universities attract more collaborative work, thus increasing its overall impact. Singh and Bebi (2013) have indicated in an Indian study that LIS research productivity is highly concentrated within a few universities, thus reflecting institutional inequality. Edwards (2013) indicates that in the UK and North America, it is the elite universities that have been at the forefront of producing postgraduate-level research in library and information science, followed by a decline in productivity in smaller universities.

The geographic factor in LIS research productivity in Pakistan has shown evidence of regional disparities, where research production has been concentrated in major urban centers and academic hubs such as Lahore, Islamabad, and Peshawar. Studies have shown that research production in these areas has been fueled by better academic facilities, funding opportunities, and availability of scholarly materials. The geographic factor in LIS research publications has shown that author affiliations in publications are concentrated in certain provinces, i.e., Punjab and Khyber Pakhtunkhwa, while other areas remain underrepresented (Warraich & Ahmad, 2011).

Moreover, research has shown that through co-word and bibliometric analysis, international collaboration in LIS research remains limited, highlighting the factor of geographic isolation (Tariq et al., 2020).

In research conducted by Siddique et al. (2021) on LIS research productivity in the Arab world, research production was shown to be concentrated in certain countries, i.e., Egypt, Saudi Arabia, and the United Arab Emirates, while other countries, i.e., smaller and less-developed countries, remained underrepresented.

Globally, research has shown that geographic concentration in research production has been linked to funding opportunities, research facilities, and international collaboration networks, as noted by Hicks (2004). Such findings highlight that global research productivity in LIS research has been unevenly distributed.

Looking at how LIS research has changed over time, it shows this kind of slow but steady increase in the number of studies and papers coming out. In Pakistan especially, things picked up a lot after the early 2000s. Ahmed and others in 2026 looked at MPhil level stuff in library and information science there, using some bibliometric method to count things up. They found growth over the years, but it varies by place and school, with Punjab doing the most. Males still run the show in who writes and who supervises, even if more women

are getting involved now. It points out progress, but also these ongoing issues with gender and where people are from. Kind of useful for spotting patterns and weak spots in Pakistani LIS.

According to Ameen and Mahmood (2014), output went up, but most work sticks to a few main areas like services and collections in libraries. Newer stuff on tech and information only started showing up lately, it seems. More recent looks at the numbers, like from Islam and Haider in 2025, show publications climbing between 2011 and 2023, along with more teamwork on papers. Citations haven't kept pace though, which is interesting.

The authorship of the research produced in the LIS domain also shows a move from solo to collaborative research, a trend that is also seen at the global level (Ali & Ahmad, 2024). However, the level of collaboration is still low compared to journal research, a potential area for improvement.

Furthermore, the analysis revealed that the research produced for a PhD degree is generally focused on traditional areas, with a lack of exploration and research in emerging areas such as digital libraries, data science, and information policy.

The international research produced in the LIS domain also shows a mix of continuity and innovation in terms of the themes and topics addressed. The early studies showed a focus on traditional areas such as library services, users, and bibliographic control. The recent studies revealed a move towards interdisciplinarity, including themes such as information retrieval, digital literacy, and curation (Edwards, 2013).

4. Research Methodology

This study employs a bibliometric research design to examine the productivity of PhD dissertations in the field of Library and Information Science (LIS) across Pakistani universities. Bibliometric analysis is a well-established method within LIS research, enabling the systematic and quantitative evaluation of scholarly outputs, such as authorship trends, institutional contributions, gender representation, and supervisory patterns. Adopting a quantitative research approach, the study aims to provide objective, data-driven insights into the dynamics of research productivity rather than relying on interpretative or qualitative assessments.

The population of the study consists of public and private universities in Pakistan that offer PhD programs in LIS or closely related fields. Entire PhD theses awarded in Pakistan from ten LIS schools were selected for this data set based on the availability and accessibility. The final dataset includes 112 PhD dissertations submitted between 1981 and 2025, spanning 18 years of scholarly output. Each record contains detailed metadata, including the thesis title, year of submission, author's gender, university affiliation, province, and supervisor information. Only verified and comprehensive records were analyzed, thereby enhancing the validity and reliability of the research findings.

Data collection was conducted using a structured data sheet specifically designed for bibliometric analysis. This instrument was developed following a comprehensive review of prior studies and refined through pilot testing to ensure clarity, consistency, and completeness. Key data variables included the year of submission, author and supervisor gender, institutional affiliation, province, and supervisory details. Data were obtained from online public access catalogs (OPACs), departmental repositories, social media platforms, and direct engagement with LIS departments and administrative staff. To enhance data reliability, all entries were cross-verified against multiple sources, including library catalogs and departmental records. In cases where physical verification was not feasible, confirmations were obtained from institutional representatives.

After data collection, all records were cleaned and standardized to eliminate duplicates, correct inconsistencies, and ensure consistent coding. The dataset was then analyzed using Microsoft Excel. Frequencies and percentages were used to identify patterns in thesis output by gender, institution, region, and supervisory characteristics. Ethical considerations were carefully observed throughout the study. Although the data pertain to publicly available academic work the confidentiality of individuals was preserved, and findings were reported in aggregate form without revealing any personal or sensitive information. In conclusion, the methodology employed in this study reflects a rigorous and systematic approach to understanding PhD thesis

productivity in LIS programs in Pakistan. The study's findings can serve as a valuable resource for academic policymaking, institutional planning, and further research in the field of Library and Information Science.

5. Results

5.1 Gender and PhD graduates productivity

The study shows PhD Graduates' Gender Influences. The gender distribution of 112 PhD graduates in Library and Information Science (LIS), revealing a significant imbalance between male and female representation. Out of the total, 83 graduates (74%) are male, while only 29 graduates (26%) are female, indicating a 50-percentage-point gender gap. This considerable disparity highlights the continued underrepresentation of women in PhD-level LIS education and suggests that gender equity remains a critical challenge within this academic domain.

Table 1: University Sector and PhD productivity

University sector	Frequency	Percent (%)
Male	83	74.0
Female	29	26.0
Total	**112**	**100.0**

5.2 Institutional PhD productivity in Pakistan

The table 2 presents the institutional distribution of PhD productivity (n=112) in the context of Library and Information Science (LIS) education and research in Pakistan. It reveals a highly uneven contribution across universities, indicating concentration trends within a few major institutions. The University of the Punjab dominates the dataset with 53 respondents (47.3%), representing nearly half of the total sample. This suggests that the university plays a leading role in LIS education, research productivity, and possibly MPhil/PhD supervision in the country. Similarly, The Islamia University of Bahawalpur contributes 23 respondents (20.5%), indicating its strong and growing presence in LIS academic activities. Mid-level contributions are observed from University of Karachi and University of Sargodha, each with 10 respondents (8.9%). These institutions reflect moderate engagement in LIS programs and research output. The University of Sindh appears twice (2 and 6), cumulatively contributing 7.2%, which may indicate data categorization variation but still reflects a modest presence. Minhaj University Lahore accounts for 5 dissertations (4.5%) showing emerging participation in LIS education.

Table 2: LIS Institutional productivity of PhD dissertations in Pakistan

Name of University	Frequency	Percent
Allama Iqbal Open University	01	0.90
Hamdard University, Karachi	01	0.90
Qurtaba University, Peshawar	01	0.90
University of Sindh Jamshoro	02	01.80
Minhaj University Lahore	05	04.50
University of Sindh Jamshoro	06	05.40
University of Karachi	10	08.90
University of Sargodha	10	08.90
Islamia University of Bahawalpur	23	20.50
University of Punjab, Lahore	53	47.30
Total	**112**	**100.0**

5.3 University Sector and PhD dissertations productivity

Of the 112 dissertations, 105 (93.8%) are from public universities, while only 7 (6.3%) are from private universities. These statistics shows the extent to which public universities dominate the LIS doctoral mentoring and research in Pakistan. The dominance of public universities is likely due to their more developed teaching and research infrastructure, more research funding, and larger capacity to run doctoral programs in LIS. These universities are the main creators of knowledge, and the development of the profession, and offer considerable mentoring, and research and teaching support. The representation of private universities is small which indicates that they have little contribution and may be attributed to small faculty sizes, or insufficient research-oriented programs. The data sets have immense value in the planning of LIS education. Increasing the role of the private sector could build supervisory potential, diversify research views, and improve the academic competitive ratio.

Table 3: University Sector and PhD productivity

University sector	Frequency	Percent (%)
Private	07	06.30
Public	105	93.80
Total	112	100.0

5.4 Geographic distribution of PhD dissertations productivity

The table 4 presents the geographic distribution of dissertations productivity across different regions of Pakistan. It reveals a highly uneven pattern, with a strong concentration of research output in one province. Punjab dominates the distribution with 91 dissertations, accounting for 81.3% of the total sample (n=112). This overwhelming share indicates that Punjab is the central hub of LIS academic activity in Pakistan. The high productivity may be attributed to the presence of well-established universities, a greater number of LIS departments, and stronger research supervision capacity in the province. Sindh follows with 17 dissertations (15.2%), representing a moderate level of contribution. Meanwhile, Khyber Pakhtunkhwa (KPK) contributes only 3 dissertations (2.7%), and the Islamabad Capital Territory (ICT) accounts for just 1 thesis (0.9%), indicating minimal research output in these regions. These findings emphasize the need for policy interventions to strengthen LIS education and research infrastructure in underrepresented regions, promoting balanced academic development and wider knowledge production in the field.

Table 4: Geographic distribution of PhD dissertations productivity

	Frequency	Percent
Islamabad	01	0.90
KPK	03	02.70
Sindh	17	15.20
Punjab	91	81.30
Total	**112**	**100.0**

5.5 Temporal Trends in PhD dissertations

The temporal trends demonstrate a progressive increase in research productivity, particularly in recent years. During the earliest period (1981–2010), only 10 dissertations were produced, accounting for 8.9% of the total. A similar level of output is observed in the 2011–2015 period, which also contributes 10 dissertations (8.9%). These relatively low figures suggest that LIS research activity remained limited for a considerable time, possibly due to fewer academic programs, limited research infrastructure, and lower enrollment in advanced LIS studies. A notable increase occurs in the 2016–2020 period, where the number of dissertations rises sharply to 35 (31.3%). This growth reflects the expansion of LIS departments, increased research supervision, and a growing recognition of the importance of information management in the digital era. The most significant surge is observed in the 2021–2025 period, contributing 57 dissertations (50.9%), which constitutes more than half of the total output. This indicates a rapid acceleration in LIS research productivity, likely driven by technological advancements, digital transformation, and increased demand for information professionals.

Table 5: Temporal Trends in PhD Research Output

Time periods	Frequency	Percent
1981-2010	10	08.90
2011-2015	10	08.90
2016-2020	35	31.30
2021-2025	57	50.90
Total	112	100.0

5.6 Individual Supervisor PhD productivity (Top ten)

The table presents the individual productivity of supervisors in the field of Library and Information Science (LIS), based on the number of dissertations supervised (n=112). It highlights notable disparities in supervisory contributions, indicating a concentration of research guidance among a few highly active scholars. Dr. Kanwal Ameen emerges as the most productive supervisor, with 17 dissertations (15.2%), reflecting a leading role in mentoring postgraduate research and shaping LIS scholarship. This is followed by Dr. Khalid Mahmood with 13 dissertations (11.6%), further indicating strong research supervision capacity. Both scholars significantly contribute to the development of LIS research in Pakistan.

A second tier of supervisors includes Dr. Nosheen Fatima Waraich and Dr. Rubina Bhatti, each supervising 9 dissertations (8.0%), along with Dr. Rafia Ahmad Sheikh (7.1%). Their contributions demonstrate consistent engagement in research supervision. Several other supervisors, such as Dr. Muhammad Rafiq and Dr. Shamshad Ahmed (6.3% each), show moderate productivity. However, a large number of supervisors fall into the low-frequency category, each contributing one or two dissertations (0.9%–1.8%).

Table 6: Individual Supervisor PhD productivity (Top ten)

Name	Frequency
Dr. Kanwal Ameen	17
Dr. Khalid Mahmood	13
Dr. Nosheen Fatima Waraich	09
Dr. Rubina Bhatti	09
Dr. Rafia Ahmad Sheikh	08
Dr. Muhammad Rafiq	07
Dr. Shamshad Ahmed	07
Dr. Haroon Idress	06

Dr. Muhammad Ijaz Mairaj	04
Dr. Munira Nasreen Ansari	04

6. Findings and discussion

The findings reveal significant structural imbalances alongside notable progress in the development of discipline. The gender-based analysis highlights a pronounced disparity in doctoral attainment, with male scholars substantially outnumbering their female counterparts. While the presence of female PhD graduates reflects a degree of participation, the disproportionately high number of male graduates points to persistent barriers limiting women's access to and success in doctoral studies. These challenges may be rooted in a range of socio-cultural, economic, and institutional factors, including gender norms, lack of financial support, limited mentorship opportunities, and structural biases within academic environments. To bridge this gap, institutions and policymakers need to implement targeted strategies that promote gender-inclusive practices, such as scholarships for women, flexible academic pathways, and supportive supervisory structures. This imbalance reflects ongoing challenges related to socio-cultural constraints, limited access to financial and academic support, and restricted mentorship opportunities for women. Despite gradual female participation, gender equity remains an important concern that requires targeted institutional and policy-level interventions to foster inclusive academic environments. Earlier bibliometric studies also found that men produce roughly 15–20% more publications on average, and occupy more last-author roles, indicating senior research leadership (Boekhout et al., 2021; West et al., 2012; Siddique et al., 2023). Some other authors identified barriers female face including fewer professional advancement opportunities, less recognition, and a lack of gender-responsive workplace environments, which contribute to uneven leadership representation (Jaswal & Sheikh, 2019).

Institutional distribution indicates a strong concentration of doctoral output within a limited number of universities, particularly those located in Punjab. A few leading institutions dominate research productivity and doctoral supervision, while several universities demonstrate minimal engagement. This pattern reflects uneven institutional capacity, variations in research infrastructure, and disparities in academic development across higher education institutions in Pakistan. The temporal analysis demonstrates a clear upward trend in research productivity, with a significant increase in doctoral output observed in recent years. Earlier periods show relatively low levels of activity, suggesting limited opportunities for advanced research and fewer academic programs. The recent surge reflects the expansion of Library and Information Science education, increased research supervision, and the growing importance of information management in the digital era. Sector-wise findings reveal the overwhelming dominance of public universities in doctoral supervision and research output. Public sector institutions benefit from stronger infrastructure, greater funding opportunities, and established research cultures, whereas private universities contribute marginally. This imbalance highlights the need to strengthen the research capacity of private institutions and encourage collaborative academic partnerships. Geographic analysis further exposes regional disparities, with research productivity heavily concentrated in Punjab, while other regions exhibit comparatively low output. This uneven distribution underscores the need for equitable resource allocation and the development of research infrastructure in underrepresented areas to ensure balanced academic growth. Finally, the study identifies a concentration of supervisory productivity among a small group of highly active scholars, while many supervisors contribute minimally. This uneven distribution suggests the necessity of expanding supervisory capacity and promoting wider participation in research mentoring. Temporal trends show impressive growth in recent years in PhD dissertation productivity. Overall, the study provides valuable insights for policymakers and academic institutions to enhance equity, strengthen institutional capacity, and support sustainable development in Library and Information Science research in Pakistan.

7. Conclusion

This study shows the developments in Library and Information Science education at doctoral level in Pakistan. There is a mixture of growth, concentration, and inequality in many aspects. All the findings indicate that, although discipline has gone through tremendous growth over the past few years, such a growth has been unevenly distributed in relation to gender representation, institutional involvement, and geographical representation. Such tendencies provide essential information about the structural processes that define LIS research and education in the state. The main finding of the research is the existence of gender difference in the very top of academic performance. The lack of women who graduate as doctors is an indication of the long term socio-cultural and institutional issues that persist and prevent access to higher education by women. Despite the current presence of females, it is not a sign of fair inclusion into the scholarly environment of LIS yet. The imbalance implies that long-term and focused interventions, such as increased funding opportunities, integrative academic policies, and formal mentoring, are needed to provide an enabling environment in which women will have an improved opportunity to advance in doctoral education and research.

The research indicates a high-level of LIS research production is concentrated through few well-established universities. These academies mostly found in Punjab are the main sources of doctoral education and academic output because of their relatively developed infrastructure, expertise in teaching, and developed research cultures. Nonetheless, the small input of other universities implies the existence of institutional capacity and access differences as well as research opportunities. This concentration has not only limited a variety of academic views but has also indicated the need to intensify LIS programs in new and under representational institutions in order to create a more equitable and more inclusive research environment. The time analysis also supports the finding that LIS in Pakistan is experiencing a period of a rapid growth. The dramatic rise in the number of doctorates in recent years is indicative of the increased appreciation of the relevance of the discipline in the digital transformation, management of information, and knowledge-based economies. The trend towards the north is suggestive of a higher number of enrolments, improved research oversight, and the growth of postgraduate courses. However, the comparatively low output of the earlier periods also underscores the constraints of LIS education in the past which places the necessity of the need to continue the growth at present with the proper strategic planning and with perpetual investment in research development.

Another important finding is the supremacy of the dominance of the public sector universities in doctoral supervision and research production. Scholars of LIS still find it difficult to do without public institutions as they are the ones with more powerful financial support systems, research infrastructure, and networks of scholars. The marginal representation of the universities of the private sector, on the contrary, indicates the potential not being fully utilized, so there is a need to build capacity in the universities. Cultivating partnership between government and non-governmental sectors would help in sharing of knowledge, diversifying research views as well as increasing the overall academic output in research. The study reveals strong regional disparities geographically with research activity being well concentrated in Punjab whilst other provinces make insignificant input. Such unequal distribution indicates larger disparities within educational resources, institutional development, and mechanisms of research support throughout the country. To resolve these differences, it is necessary to implement conscious policy actions, which decentralize academic access, build stronger regional institutions, and focus on achieving equal access to research funding and supervision.

7. Recommendations

1) It is required to introduce specific scholarships, research grants and mentoring programs, to increase female representation at the doctoral level.
2) The capacity within non-dominant universities/colleges may be enhanced by investing in LIS departments, faculty building, and research facilities to decrease overdependence on a handful of major institutions.
3) Inter-University cooperation and research association need to be enhanced to achieve knowledge exchange, and equal academic development in each part of the country.

4) Incentives and research funds as well as policy support may be provided to encourage the expansion of the LIS doctoral program in public and private sector universities.
5) Regional development initiatives may be offered to increase the LIS education and research in the less-represented provinces.

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