

Research Article

The Role of Research in Enhancing Academic Quality in the Ministry of Higher Education of Afghanistan: A Case Study of Bamyan University

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Abstract: This study examines the role of scientific research in enhancing academic quality within Afghanistan's Ministry of Higher Education, with a specific focus on Bamyan University. It investigates how structural support, faculty participation, application of research findings, and research opportunities contribute to teaching quality, curriculum development, institutional reputation, and research out-put. A quantitative, descriptive-analytical approach was employed using a structured questionnaire distributed to Bamyan University faculty members. From a population of 220, a sample of 121 respondents was selected through stratified random sampling. Data were analyzed using SPSS soft-ware, applying Pearson correlation and multiple regression tests. Reliability was ensured through Cronbach's alpha (0.915), confirming strong internal consistency. Results revealed a significant positive relationship between scientific research and academic quality ($r = 0.624$, $p < 0.01$). Among the examined factors, the application of research findings and professors' participation in research were the strongest predictors of academic quality, with regression analysis showing they explained 51.5% of the variance. Structural support and facilities, though positively correlated, had weaker effects when compared to active faculty engagement and practical use of research outputs. This study is one of the first empirical investigations linking research activity and academic quality in Afghan higher education. It highlights that enhancing quality is not merely dependent on infrastructure or funding but on integrating research outcomes into academic practice and fostering faculty participation. The findings provide actionable insights for policymakers to design effective research policies, incentive mechanisms, and practical application frameworks.

Keywords: scientific research; academic quality; quality assurance; knowledge production; Ministry of Higher Education of Afghanistan

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1. Introduction

In the contemporary world, scientific research is widely recognized not only as a cornerstone of academic and educational development but also as a driving force for the social, economic, and cultural advancement of societies. Universities and higher education institutions play a pivotal role in generating knowledge, training skilled professionals, and addressing societal challenges through research. Accordingly, enhancing academic quality in these institutions is inseparable from strengthening their research foundations. Scientific research elevates teaching and learning standards while transforming universities into hubs of innovation, policymaking, and intellectual leadership.

In Afghanistan, the Ministry of Higher Education, as the primary policymaking and coordinating body, has undertaken several initiatives over the past two decades to develop research capacity. However, persistent structural, financial, and human resource constraints have hindered the institutionalization of a robust research culture. Limited numbers of high-quality studies, underdeveloped research centers, weak research policies, and insufficient funding remain key barriers to academic growth (Darmani, 2021). These challenges highlight

the need for a critical reassessment of the role of research in enhancing academic quality within Afghanistan's higher education system.

Bamyan University, as a relatively young institution located in a less-developed region, faces even greater challenges than universities in urban centers. Insufficient research infrastructure, a shortage of research-oriented faculty, limited funding for research projects, and weak linkages between research and local needs have all restricted its academic development. Nevertheless, the university possesses considerable potential that, if adequately supported and strategically directed, could contribute significantly to regional and national development. Thus, a case study of Bamyan University provides a valuable opportunity to examine the role of research in improving academic quality in similar higher education institutions across Afghanistan.

Against this backdrop, the present study aims to evaluate the current state of research at Bamyan University, identify challenges and opportunities, and propose evidence-based strategies for strengthening the role of research in enhancing academic quality. The findings are expected to inform more effective policies for institutionalizing a research culture and improving the academic standing of Afghanistan's higher education sector.

Scientific research constitutes a critical component of higher education systems, serving as a key driver of teaching quality, knowledge production, intellectual development, and institutional reputation. In many developed countries, the integration of research and education has produced universities that serve as engines of innovation, policymaking, and problem-solving for society at large. In such systems, research is not treated as an auxiliary activity but rather as a central pillar of academic life and institutional advancement.

In Afghanistan, despite post-2001 efforts to rebuild the higher education system and policy-level emphasis on research (Rahimi and Ayubi, 2023), the research capacity of universities remains weak. Most institutions lack modern research facilities, adequately trained faculty, and sufficient financial and technical resources to support meaningful scholarly work. In many cases, research is reduced to formalistic thesis projects with little relevance to societal needs or knowledge creation. As a result, academic quality – particularly in provincial universities – remains low, limiting the role of higher education in national development.

Bamyan University, given its location in a disadvantaged region, faces even more acute challenges. These include weak research planning and policymaking, a shortage of experienced research faculty, limited financial resources, and low motivation among academic staff to engage in research. Such constraints not only impede improvements in teaching and learning but also reduce the university's capacity to contribute to local, cultural, and social development.

Meanwhile, international experiences confirm a strong correlation between research development and academic quality. This raises a key question: Why does academic quality in many Afghan universities, particularly Bamyan University, remain low despite official recognition of the importance of research? Addressing this question requires a comprehensive examination of existing research capacity, higher education research policies, institutional barriers, and the relationship between research and academic quality.

This study therefore seeks to conduct a systematic analysis of the current research environment at Bamyan University, identify enabling and constraining factors, and propose practical measures for integrating research into the academic mission of the university. Ultimately, the study aims to answer the broader question of how strengthening research can enhance academic quality across Afghanistan's higher education sector.

Scientific research underpins sustainable development and knowledge production, shaping the quality and relevance of higher education systems. Without a dynamic research culture, universities cannot keep pace with global scientific advancements or effectively respond to emerging societal needs. In Afghanistan, the quantitative expansion of higher education institutions has not been matched by improvements in educational quality, with research capacity representing one of the most pressing gaps.

This study is significant because it systematically examines the relationship between research development and academic quality, highlighting how investments in research infrastructure, faculty engagement, and knowledge application can enhance teaching standards, curriculum quality, faculty development, and ultimately, graduate competencies.

The rationale for focusing on Bamyan University is twofold. First, as a provincial university located in a disadvantaged region, it represents the realities and challenges faced by many Afghan higher education institutions. Second, its underdeveloped research capacity offers an opportunity to design context-sensitive, practical models for strengthening research culture in similar universities. The study's findings are expected to inform policymakers,

higher education authorities, and international education partners in designing targeted interventions to improve research capacity and academic quality across Afghanistan.

The research objectives are divided into two parts: the main objective and the specific objectives, each of which is explained separately below.

Main objective is to examine the impact of scientific research—specifically structural support, professors’ participation, application of research findings, and availability of research opportunities and facilities – on academic quality, including teaching improvement, curriculum development, professors’ growth, institutional reputation, and research output, within the Ministry of Higher Education.

Specific objectives concern the following:

(1) to assess the role of structural support for research in improving academic quality at Bamyan University.

(2) to evaluate professors’ participation in research activities and its effect on academic quality at Bamyan University.

(3) to analyze the impact of applying research findings on enhancing academic quality at Bamyan University.

(4) to examine the contribution of research opportunities and facilities to academic quality at Bamyan University.

(5) to investigate the relationship between research activities and the quantity and quality of academic output at Bamyan University.

Based on the research objectives, the research questions are also categorized into two sections: the main question and the sub-questions, each explained under a separate heading.

Main research question is the following: How and to what extent does scientific research influence academic quality in the Ministry of Higher Education?

Specific research questions include:

(1) What role does scientific research play in improving teaching quality and academic output?

(2) How do research activities and faculty participation affect academic growth and curriculum development?

(3) To what extent are research findings utilized to improve teaching and academic quality at Bamyan University?

(4) How does scientific research contribute to the academic reputation of the university and the quality of faculty teaching?

(5) What is the relationship between scientific research and academic output at Bamyan University?

Research hypotheses embrace main hypothesis and specific hypotheses as well. Main hypothesis describes as scientific research has a positive and statistically significant effect on improving academic quality in the Ministry of Higher Education.

Specific hypotheses assume the following:

(1) Structural support for research is significantly associated with academic quality at Bamyan University.

(2) Faculty participation in research is significantly associated with academic quality.

(3) Application of research findings positively influences academic quality in higher education institutions.

(4) Research opportunities and facilities are significantly associated with both academic and educational quality.

2. Literature Review

This study represents one of the most recent academic efforts on this topic, with no prior research conducted under this specific title in Afghanistan. However, related studies, both within and outside the country, provide valuable insights and are reviewed below in two sections: domestic and international research.

8.1. Domestic Research Background

Since the establishment of the Directorate for Quality Assurance and Accreditation in Afghanistan’s Ministry of Higher Education in 2012, significant efforts have been made to institutionalize quality assurance systems (Darmani, 2021). Within this framework, research has been identified as a core pillar for enhancing academic quality and knowledge production, as reflected in the ministry’s official standards and policy documents.

Mohammad Reza Darmani’s work offers a legal and practical analysis of the ministry’s

quality improvement guidelines, portraying quality assurance not only as a mechanism for evaluating institutional structures and processes but also as a value-driven and strategic approach to meeting societal needs. Despite historical delays in implementation, the establishment of relevant institutions has provided the foundation for strengthening the role of research within the quality assurance system (Darmani, 2021).

Rahimi and Ayubi (2023), in an applied study, emphasize the pivotal role of quality assurance standards in fostering knowledge production. Their findings indicate that rigorous implementation of quality assurance measures, particularly those related to research, leads to increased knowledge generation, scientific innovation, and systemic transformation in higher education. They argue that research serves as a key indicator of scientific progress and stress that without institutional support, access to academic resources, capacity-building initiatives, and adequate research infrastructure, high-quality knowledge production cannot be achieved. They conclude that proper implementation of quality assurance standards can drive research growth, scientific innovation, and institutional responsiveness to societal needs.

In another study, Rahimi and Ayoubi (2022) provided a detailed theoretical analysis of the sixth quality assurance standard (research), identifying it as a cornerstone for academic quality improvement. This standard encompasses three main components: research activities, research support, and research training. Key obstacles – including insufficient financial resources, limited access to international research, low faculty motivation and skills, security challenges, and shortages of research specialists – were highlighted as critical barriers to implementation. Comprehensive and systematic application of this standard, they argue, is essential for advancing academic quality.

Similarly, Auzarmi (2023), in a study titled Effectiveness of the Quality Assurance Framework in Afghanistan's Higher Education System from the Perspective of Kabul University Faculty, demonstrated a significant relationship between the quality assurance framework and improvements in teaching, learning, and research outcomes. Using statistical data and Likert-scale measures, the study confirmed the positive impact of quality assurance mechanisms on research productivity, providing reliable evidence for assessing the effectiveness of institutional quality policies.

Overall, domestic studies converge on the view that scientific research is not only a core criterion for academic quality enhancement but also a driver of knowledge production, societal development, and institutional standardization. However, success in this area requires robust institutional support, sustainable resources, capacity-building initiatives, and the removal of structural and cultural barriers within universities.

8.2. International Research Background

Internationally, a substantial body of research has examined the relationship between scientific research and academic quality.

Yazdi-Moghadam and Mohammadi (2013), in their study on “The Non-Applicability of Nursing Research Findings from the Perspective of Nursing Researchers in Iran”, identified inadequate mechanisms for disseminating and applying research findings, lack of collaborative research structures, financial constraints, and limited familiarity with applied research methods as major challenges. They highlighted the importance of establishing research priorities and fostering collaboration with executive bodies to enhance the practical relevance of research.

Similarly, a study on factors influencing research quality in higher education emphasized the role of soft components such as faculty motivation, academic networking, research skills, and institutional autonomy in strengthening research outcomes. The study also underscored structural challenges, including regulatory weaknesses, managerial inefficiencies, and the impact of sanctions on financial resources, as major impediments (Mohammadi et al., 2023).

At the individual level, a study conducted at Tabriz University of Medical Sciences revealed that time constraints, inadequate research skills, difficulty in problem identification, and lack of motivation among faculty members were more influential than structural factors in reducing research productivity (Farajollahi et al., 2013).

Globally, bibliometric analyses of quality assurance in higher education from 2003 to 2023 demonstrate that countries such as the UK, USA, Australia, and Germany have taken leading roles in advancing quality assurance mechanisms, emphasizing sustainable development, international collaboration, and quality-oriented policy frameworks as key priorities (Iran et al., 2025).

Additionally, a case study in Brazil focusing on research and innovation in higher education found that insufficient linkages between universities and industry, coupled with

regulatory barriers, hindered the effective utilization of research capacities. The authors stressed the need for policies aimed at strengthening university-industry collaboration (Faria et al., 2018).

In summary, international research points to multiple factors affecting research effectiveness at three levels: (1) individual (capacity, skills, and motivation); (2) institutional (infrastructure, funding, and administrative support); and (3) policy (priority-setting, strategic alignment, and regulatory coherence).

A recurring theme across studies is the lack of effective integration between research and practice, inconsistent policy frameworks, and limited researcher capacity-building initiatives.

Taken together, the literature underscores the critical role of scientific research in enhancing academic quality. However, realizing its full potential requires effective policymaking, adequate funding, and the establishment of supportive research infrastructure. The case study of Bamyan University offers valuable insights into the challenges and opportunities in this context.

3. Materials and Methods

This research is applied in nature with a descriptive-analytical approach and has been conducted as a case study at Bamyan University. For data collection, a quantitative method was used, and a structured questionnaire was distributed among the academic staff of the university. Sampling was carried out using stratified random sampling, and all faculty members from different faculties were invited to participate. Out of approximately 220 current faculty members, 121 individuals voluntarily responded. Using Cochran's formula, a sample size of around 120 participants was determined from the population of 220 faculty members.

The main data collection tool was a questionnaire containing questions on the independent variables (structural support for research, faculty participation, application of research findings, and research opportunities and facilities) and the dependent variable (academic quality in various dimensions). A five-point Likert scale was used for all items. The collected data were analyzed using SPSS software, and tests such as Pearson correlation and multiple regression were applied to examine the relationships between variables.

Overall, this methodology enables a detailed assessment of the impact of different research-related factors on the academic quality of the university, and its findings can inform policies and programs at the Ministry of Higher Education and universities. Ethical considerations, including the confidentiality of respondents' information, were strictly observed.

In a scientific study, maintaining two key principles – validity and reliability – is essential. These criteria play a fundamental role in ensuring the accuracy of findings in both quantitative and qualitative research. Reliability means that if the research were repeated under similar conditions, it would yield similar results. Validity indicates the extent to which the data accurately represent the reality being studied (Punch, as cited in Gün, 2023).

To measure reliability in this research, Cronbach's alpha coefficient was used, one of the most common measures of internal consistency in questionnaires. The coefficient ranges from zero to one, with a value of 0.70 or higher considered satisfactory (Ahmadi and Tekemen, 2024; Bryman, 2008; Mohammadbeigi et al., 2015). In this study, the Cronbach's alpha for the questionnaire items was 0.915, indicating a high level of reliability. Furthermore, repeated administration of the questionnaire and interviews at different times produced similar results, confirming the reliability of the data. Therefore, the data collection tools in this research exhibit acceptable levels of validity and reliability, ensuring confidence in the scientific credibility of the findings.

Also, this research has two types of variables like independent and dependent variables and is showed in table 1.

Table 1. The variables of research.

Type of variable	Variable dimensions
Independent variable	Structural support, professors' participation, application of research findings, research opportunities, and facilities
Dependent variable	Teaching quality enhancement, curriculum development, professors' academic growth, institutional academic credibility, improvement in scientific output



4. Results

This research aimed to examine the impact of scientific research on academic quality in the Ministry of Higher Education of Afghanistan, with Bamyan University as the case study. The data collected through the questionnaire and analyzed using SPSS yielded significant findings in two sections: descriptive statistics and correlation and regression analysis.

4.1. Descriptive Statistics of Demographic Characteristics

In the descriptive statistics section, the demographic characteristics of respondents were analyzed using percentages and frequencies (table 2). The participants in this research were entirely male, with no female respondents, which represents a limitation in terms of gender representation.

Table 2. Descriptive statistics of respondents' demographic characteristics.

Variable	Group	Frequency	Percentage
Gender	Male	121	100
	Female	0	0
Age	Under 30 years	34	28.6
	30–40 years	62	52.1
	41–50 years	21	17.6
	Above 50 years	2	1.7
Education level	Bachelor's	41	34.5
	Master's	69	58.0
	Doctorate	8	6.7
	Other	1	0.8
Current positions at university	Lecturer	106	89.1
	Administrative staff	9	7.6
	Research staff	4	3.4
Academic rank	Teaching Assistant	30	28.6
	Senior Teaching Assistant	21	20.0
	Assistant Professor	34	32.4
	Associate professor	13	12.4
	Professor	7	6.7
Faculty	Geology	15	14.2
	Economics	9	8.5
	Social Sciences	17	16.0
	Education	27	25.5
	Agriculture	17	16.0
	Islamic Studies	5	4.7
	Natural Sciences	15	14.2
Work experience at university	Veterinary	1	0.9
	Under 5 years	46	39.7
	5–10 years	21	18.1
	Over 10 years	49	42.2

According to the data, all respondents (100 percent) were male, with no female participation recorded in the study. This clearly indicates a gender gap in the academic environment under study, which may stem from structural, cultural, and social barriers to women's presence in scientific fields. This finding is itself a significant indicator for analyzing gender inequality in academic employment.

In terms of age, the largest proportion of respondents falls within the 30–40 years group (52.1 percent). This shows that the majority of university staff are in the middle stage of their professional careers and are likely carrying the main educational and research workload. The under 30 years group (28.6 percent) also makes up a considerable share, reflecting the presence of relatively new entrants in the academic field. The share of individuals above 40 is comparatively small, accounting for only 19.3 percent of the sample. Overall, this distribution demonstrates a young to middle-aged structure among the university's academic staff.

With regard to education, the majority of respondents hold a Master's degree (58 percent), followed by those with a Bachelor's degree (34.5 percent). Holders of Doctorates make up 6.7 percent, which is relatively low and highlights the limited number of staff at the

highest academic level. This could be linked to restricted opportunities for advanced studies or challenges in pursuing education abroad. Generally, the educational profile reflects a dominance of the Master’s level within the university.

In terms of current position, the majority are lecturers (89.1 percent), while only a small portion serve as administrative staff (7.6 percent) or research staff (3.4 percent). This indicates that the university’s primary focus is on teaching rather than research.

Regarding academic rank, the largest groups are Assistant Professors (32.4 percent) and Teaching Assistants (28.6 percent). Additionally, 26.7 percent are Senior Teaching Assistants and Associate Professors. Only 6.7 percent are full Professors, showing a very small proportion of senior faculty members. This points to a structural challenge in promoting academic advancement and research capacity within the institution.

Across faculties, the highest proportion is found in Education (25.5 percent), followed by Social Sciences and Agriculture, each with 16 percent. Smaller shares belong to Islamic Studies (4.7 percent) and Veterinary Science (0.9 percent). This distribution suggests that the university is largely oriented toward educational and socio-human sciences, whereas specialized fields such as Veterinary and Economics represent a much smaller share.

In terms of work experience, the largest group consists of respondents with over 10 years (42.2 percent) of experience, reflecting the significant presence of senior staff at the university. At the same time, around 39.7 percent have less than five years of experience, indicating a considerable share of newcomers. The 5-10 years group (18.1 percent) is comparatively smaller, which might suggest turnover, exit, or migration of staff within that period.

Overall, the analysis reveals that the university’s demographic profile is primarily composed of male, young to middle-aged staff with Master’s degrees, most of whom serve as lecturers. Teaching outweighs research activities, while the faculty distribution shows a concentration in Education and Social Sciences. At the same time, the absence of women and the limited number of high-ranking professors highlight serious challenges in terms of gender diversity and academic advancement.

4.2. Descriptive Analysis of Statistical Data of Variables

In this section, the data, which include both dependent and independent variables, are presented in terms of mode, median, mean, maximum, and minimum in table 3. The form of the variables’ questions is based on the Likert scale, where 1 means strongly disagree, 2 means disagree, 3 means neutral, 4 means agree, and 5 means strongly agree. The levels of agreement and disagreement with the variables by the respondents are shown in the table.

Table 3. Statistical data of variables by mean, median, mode, minimum and maximum.

Indicators	Variables	Mean	Median	Mode	Minimum	Maximum
Structural support for research	MoHE has structure and policy for research	4.0000	4.0000	4.00	2.00	5.00
	University has a specific research budget	2.4628	2.0000	2.00	1.00	5.00
	Access to digital libraries and journals	2.7603	3.0000	2.00	1.00	5.00
	Research approval is transparent and efficient	3.1818	3.0000	3.00	1.00	5.00
Professors’ participation in research	Professors actively engage in research	3.8099	4.0000	4.00	1.00	5.00
	Research counts for academic promotion	4.5041	5.0000	5.00	2.00	5.00
	Professors are motivated to research	3.6281	4.0000	4.00	1.00	5.00
	Professors have research skills	3.6694	4.0000	4.00	1.00	5.00
Application of research results	Research affects policymaking	3.7438	4.0000	3.00	1.00	5.00
	Research influences curriculum design	3.7355	4.0000	4.00	1.00	5.00
	Research is reflected in reports	3.6612	4.0000	4.00	1.00	5.00
	Research matches higher education needs	3.5537	4.0000	4.00	1.00	5.00

Research opportunities and facilities	MoHE/universities organize workshops	3.7000	4.0000	4.00	1.00	5.00
	Scholarships and funding available	2.4463	3.0000	3.00	1.00	5.00
	Universities provide research facilities	2.6860	2.0000	2.00	1.00	5.00
	Policies encourage journal publication	3.1074	3.0000	4.00	1.00	5.00
Improvement in teaching quality	Research improves teaching methods	3.6917	4.0000	4.00	2.00	5.00
	Research-active professors teach better	3.8917	4.0000	4.00	1.00	5.00
	Teaching materials updated by research	3.4167	4.0000	4.00	1.00	5.00
	Research-based teaching aids learning	4.0672	4.0000	4.00	1.00	5.00
Curriculum development	Research updates curriculum	3.7750	4.0000	4.00	2.00	5.00
	Courses reflect societal needs	3.3250	3.0000	4.00	1.00	5.00
	Professors collaborate with MoHE	3.7288	4.0000	4.00	1.00	5.00
	Professors revise courses using research	3.6000	4.0000	4.00	1.00	5.00
Institutional academic credibility	Publications boost reputation	4.4250	5.0000	5.00	2.00	5.00
	More research = higher credibility	4.4417	5.0000	5.00	2.00	5.00
	Research indicators assess quality	4.3667	4.0000	5.00	2.00	5.00
	Research support attracts talent	4.2417	4.0000	5.00	2.00	5.00
Professors' academic growth	Research boosts competence	4.5417	5.0000	5.00	3.00	5.00
	Research improves academic writing	4.4706	5.0000	5.00	3.00	5.00
	Research gives global opportunities	4.2167	4.0000	5.00	1.00	5.00
	Research fosters innovation	4.5167	5.0000	5.00	3.00	5.00
Improvement in academic output	Publications have increased	3.7983	4.0000	4.00	1.00	5.00
	Research quality has improved	3.8083	4.0000	4.00	1.00	5.00
	Research solves problems	3.5333	4.0000	4.00	1.00	5.00
	Research produces new knowledge	3.5250	4.0000	4.00	1.00	5.00

This table presents the descriptive analysis results of the data concerning the impact of scientific research on academic quality in the Ministry of Higher Education and universities. Based on the indicators of mean, median, and mode, it can be observed that most respondents hold a relatively positive view of the importance of research in enhancing the academic standing of universities and faculty members. In particular, variables such as “Scientific research is a fundamental criterion for the promotion of academic rank” (mean 4.50), “Conducting research increases the scientific and professional capacity of faculty members” (4.54), and “Research fosters innovation and creativity in the professor’s field of expertise” (4.52) recorded the highest means and modes. These results suggest that research, from the perspective of faculty members, is not merely an administrative or incentive-based measure but a key factor in scientific development, improvement of professional skills, and enhancement of the universities’ credibility in society.

On the other hand, some indicators obtained lower means, indicating significant barriers in terms of resources and facilities. For example, “Availability of a specific budget for scientific research” (mean 2.46), “Easy access to research resources such as databases and digital libraries” (2.76), and “Provision of necessary facilities for conducting research such as laboratories and internet” (2.68) received the lowest scores. These findings reveal that despite the recognized importance and status of scientific research within the higher education system, financial, infrastructural, and institutional limitations remain among the major challenges faced by researchers and faculty members. Overall, the data show that while there is a positive perception of the role of research, structural deficiencies and lack of adequate facilities hinder the full realization of its potential in practice.

4.3. Measuring the Correlation Between Variables: Assessing the Relationship Between Scientific Research and Academic Quality

In this section, the correlation between scientific research variables and academic quality, along with its related subcomponents, has been examined. The correlation matrix was analyzed using the Pearson correlation coefficient and two-tailed significance levels, and the results provide valuable insights for addressing the hypotheses and sub-questions of the research. The findings are analyzed precisely and scientifically as follows

Table 4. Measuring the relationship between scientific research variables and academic quality variables.

		Correlations				
		Scientific research	Structural support for research	Professors' participation in research	Application of research results	Research opportunities and facilities
Academic quality	Pearson correlation	.624**	.320**	.585**	.658**	.404**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	120	120	120	120	120
Improvement in teaching quality	Pearson correlation	.533**	.322**	.508**	.565**	.294**
	Sig. (2-tailed)	.000	.000	.000	.000	.001
	N	120	120	120	120	120
Curriculum development	Pearson correlation	.663**	.403**	.617**	.627**	.447**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	120	120	120	120	120
Institutional academic credibility	Pearson correlation	.179	-.078	.289**	.343**	.031
	Sig. (2-tailed)	.051	.399	.001	.000	.736
	N	120	120	120	120	120
Professors' academic growth	Pearson correlation	.155	-.012	.173	.239**	.090
	Sig. (2-tailed)	.091	.895	.059	.008	.327
	N	120	120	120	120	120
Improvement in academic output	Pearson correlation	.587**	.391**	.435**	.515**	.481**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	120	120	120	120	120

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 4 presents the Pearson correlation coefficients measuring the relationship between scientific research variables and various indicators of academic quality at the studied university. Overall, the results indicate a positive and significant relationship between scientific research activities and most dimensions of academic quality, although the strength of these relationships varies across different variables.

The general measure of academic quality shows strong positive correlations with all research-related variables. Specifically, scientific research activities overall have a significant and strong correlation with academic quality ($r = 0.624, p < 0.01$), while the application of research results ($r = 0.658, p < 0.01$) and professors' participation in research ($r = 0.585, p < 0.01$) also demonstrate notably strong associations. Structural support for research ($r = 0.320, p < 0.01$) and research opportunities and facilities ($r = 0.404, p < 0.01$) exhibit moderate correlations with overall academic quality. These findings suggest that both the engagement of faculty in research and the institutional support for applying research results significantly contribute to enhancing academic quality.

Looking at specific academic quality dimensions, the improvement in teaching quality is positively associated with all research-related variables, with the strongest correlations observed for the application of research results ($r = 0.565, p < 0.01$) and overall scientific research activities ($r = 0.533, p < 0.01$). Curriculum development similarly shows robust correlations with scientific research ($r = 0.663, p < 0.01$) and related factors, indicating that

research activity plays a crucial role in informing and shaping the curriculum.

However, certain aspects of academic quality, such as institutional academic credibility and professors' academic growth, show weaker or non-significant relationships with some research variables. For instance, structural support for research does not significantly correlate with institutional academic credibility ($r = -0.078$, $p = 0.399$), and scientific research itself shows only a marginally significant correlation ($r = 0.179$, $p = 0.051$). Similarly, professors' academic growth exhibits weak correlations across most research dimensions, with only the application of re-search results showing a moderate significant relationship ($r = 0.239$, $p < 0.01$). This indicates that while research activities strongly impact teaching, curriculum, and overall academic performance, their influence on institutional prestige and individual academic development may be more limited or mediated by other factors.

Finally, the improvement in academic output shows moderate to strong correlations with all research variables, particularly with the application of research results ($r = 0.515$, $p < 0.01$) and overall scientific research ($r = 0.587$, $p < 0.01$). This underscores the role of active research engagement and the practical application of research in enhancing the measurable outputs of academic institutions.

In summary, the table highlights that research activity, faculty involvement, and the practical application of research results are key drivers of academic quality, curriculum development, teaching improvements, and output. Yet, structural support for research and some dimensions, such as institutional credibility or professors' academic growth, may require additional strategies to strengthen their linkages with research initiatives.

4.4. The Role of Scientific Research Indicators on Scientific Quality

In this study, multiple regression analysis was employed to examine the role of scientific research indicators on scientific quality. Four main indicators – including structural support for research, faculty participation in research, application of research findings, and research opportunities and facilities – were included as independent variables to evaluate their impact on the dependent variable, namely, scientific quality.

Table 5 presents several key statistical indicators. The multiple correlation coefficient ($R = 0.718$) indicates a relatively strong relationship between the set of research indicators and scientific quality. The coefficient of determination ($R^2 = 0.515$) shows that the model explains about 51.5% of the variance in scientific quality. This relatively high value demonstrates the model's strong predictive power. The adjusted coefficient of determination (adjusted $R^2 = 0.498$), with a slight reduction, confirms the model's stability against the inclusion of additional variables. Furthermore, the standard error of the estimate (0.31386) is relatively low, indicating satisfactory accuracy of the model in predicting scientific quality values.

Table 5. Regression model summary (Overall model performance).

Statistic	Value
R	0.718
R ²	0.515
Adjusted R ²	0.498
Std. Error of the Estimate	.31386
F	30.561

The overall model significance test (ANOVA results) shows that the model is statistically significant ($F = 30.561$, $Sig = 0.000$). This means that the combination of scientific research indicators produces a significant difference in the levels of scientific quality. Therefore, the null hypothesis, which assumes no relationship between the variables, is rejected, and it can be concluded that the regression model is acceptable for explaining scientific quality.

In Table 6, the separate impact of each independent variable on scientific quality is examined. The constant term of the model ($B = 2.045$) is significant, indicating that in the absence of all research indicators, the baseline level of scientific quality would be around 2.045.

The variable "structural support for research" has a negative coefficient ($Beta = -0.085$) and is not statistically significant ($p = 0.344$); this means it does not have a significant effect on scientific quality. This may be due to the inefficiency of support mechanisms or their mismatch with the real needs of faculty members.



Table 6. Regression coefficients (Variable analysis).

Model	Coefficients			t	Sig.
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta		
(Constant)	2.045	.201		10.197	.000
1. Structural support for research	-.053	.055	-.085	-.951	.344
Professors' participation in research	.222	.064	.294	3.464	.001
Application of research findings	.268	.044	.475	6.044	.000

a. Dependent variable: scientific quality

On the other hand, “professors’ participation in research” with a coefficient (Beta = 0.294) and significance level ($p = 0.001$) has a positive and significant impact on scientific quality. This finding suggests that active participation of faculty members in research activities can enhance teaching quality, scientific output, and the updating of educational content.

Most importantly, the variable “application of research findings,” with a high standardized coefficient (Beta = 0.475) and very low significance level ($p < 0.001$), is the strongest predictor of scientific quality in this model. In other words, when research findings are applied in policymaking, education, and academic planning, they have the highest impact on improving the university’s scientific level.

Finally, the variable “research opportunities and facilities,” although it has a positive impact on scientific quality (Beta = 0.144), is not statistically significant ($p = 0.114$). This may be due to limited resources or ineffective utilization of the available research facilities. Therefore, to make this indicator more effective, greater emphasis should be placed on the allocation, accessibility, and actual use of research facilities.

Overall, this regression analysis indicates that the most influential factors affecting scientific quality at Bamyan University are the application of research findings and active faculty participation in research. In contrast, the existence of supportive structures and research opportunities alone, without active participation and practical utilization, does not directly impact scientific quality. These results highlight the need to revise research policies and focus on the practical and result-oriented implementation of research within Afghanistan’s higher education system.

4.5. The Overall Role of Scientific Research in Enhancing Academic Quality

A simple linear regression analysis was performed to examine the overarching role of scientific research in enhancing academic quality. As presented in Table 7, the correlation coefficient ($R = 0.624$) indicates a positive and relatively strong association between scientific research and academic quality. Furthermore, the coefficient of determination ($R^2 = 0.389$) suggests that approximately 38.9% of the variance in academic quality can be explained by the scientific research variable. Given the complexity and interrelated nature of variables typically encountered in the social sciences, this proportion represents a relatively substantial explanatory power. The adjusted R^2 (0.384) closely approximates the original value, indicating a robust and stable model with reliable generalizability to a larger population.

Table 7. Summary of regression model.

Statistic	Value
R	0.624
R^2	0.389
Adjusted R^2	0.384
F	75.144
Sig. (ANOVA)	0.000

The ANOVA results further corroborate the model’s validity, with an F-value of 75.144 and a significance level below 0.001. These findings confirm the statistical significance of the regression model and demonstrate that the effect of scientific research on academic quality is not attributable to chance but rather reflects a genuine and systematic relationship.

The regression coefficients provide further insights into the magnitude of this effect (table 8). The unstandardized coefficient ($B = 0.484$) indicates that, on average, a one-unit increase in the scientific research score is associated with a 0.484-unit improvement in

academic quality. This coefficient is not only statistically significant ($p < 0.001$) but also practically meaningful. Moreover, the standardized Beta coefficient ($\beta = 0.624$) highlights a strong positive impact, signifying that approximately 62% of standardized variations in academic quality are directly attributable to scientific research. The t-value ($t = 8.669$) further reinforces the reliability of this relationship.

Table 8. Regression coefficients.

Model	Coefficients					
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1.	(Constant)	2.310	.194		11.907	.000
	Scientific Research	.484	.056	.624	8.669	.000

a. Dependent variable: academic quality

Collectively, these findings demonstrate that scientific research exerts a significant, positive, and substantial influence on academic quality. The results lend strong empirical support to the main hypothesis and underscore the importance of fostering a research-oriented culture, providing institutional support for scholarly activities, and integrating research outcomes into academic practices. Accordingly, policymakers and higher education authorities are encouraged to allocate greater resources toward research initiatives and create enabling environments for faculty engagement in research.

4.6. Hypothesis Testing

The inferential analyses provided below clarify the acceptance or rejection of the main and subsidiary hypotheses.

Main Hypothesis:

“Scientific research has a positive and significant effect on improving academic quality within the Ministry of Higher Education.”

The correlation results ($r = 0.624$, $p < 0.001$) and the simple regression analysis ($\beta = 0.624$, $p < 0.001$) consistently demonstrate a strong, positive, and statistically significant relationship between scientific research and academic quality. These findings unequivocally confirm the main research hypothesis, indicating that increasing research activities leads to a measurable and meaningful enhancement in academic quality.

Sub-Hypothesis 1:

“Structural support for research is significantly associated with academic quality at Bamyán University.”

While a significant bivariate correlation was observed between structural support and academic quality ($r = 0.320$, $p < 0.001$), the multiple regression analysis revealed no significant effect, with a negative coefficient reported ($\beta = -0.085$, $p = 0.344$). Consequently, this hypothesis is statistically rejected, implying that structural support alone is insufficient to drive improvements in academic quality.

Sub-Hypothesis 2:

“Professors’ participation in research has a significant relationship with academic quality.”

Both the correlation analysis ($r = 0.585$, $p < 0.001$) and regression results ($\beta = 0.294$, $p = 0.001$) support this hypothesis. The findings highlight that active faculty involvement in research positively contributes to teaching quality, scholarly output, and curriculum development, thereby playing a pivotal role in enhancing academic quality.

Sub-Hypothesis 3:

“The application of research findings strengthens academic quality in educational institutions.”

This hypothesis is strongly supported by both the high correlation coefficient ($r = 0.658$, $p < 0.001$) and the strongest standardized regression coefficient among all variables ($\beta = 0.475$, $p < 0.001$). These results emphasize that the integration of research findings into educational planning, policymaking, and teaching practices yields substantial and direct improvements in academic quality.

Sub-Hypothesis 4:

“Research opportunities and facilities have a significant relationship with academic quality.”

Although a significant correlation was initially observed ($r = 0.404$, $p < 0.001$), the

multiple regression analysis revealed no statistically significant effect ($\beta = 0.144$, $p = 0.114$). Therefore, this hypothesis is rejected, suggesting that the mere availability of research facilities, without effective utilization, does not necessarily translate into enhanced academic quality.

5. Discussion

The findings of this study indicate a positive and significant impact of scientific research on academic quality at Bamyan University, aligning closely with previous research, particularly domestic studies. Specifically, the results demonstrate that scientific research contributes to the enhancement of academic quality through active faculty participation and the practical application of research findings in teaching and educational planning. This is consistent with Rahimi and Ayubi (2023), who emphasized that the effective implementation of quality assurance criteria, including research indicators, plays a pivotal role in knowledge production and scientific innovation.

The study also highlights the limited direct impact of “structural support for research” on academic quality. This finding aligns with Auzarmi (2023) and the theoretical analysis by Rahimi and Ayoubi (2022), who identified inadequate financial resources, institutional fragmentation, and structural barriers as significant obstacles to the performance of quality assurance systems in research. In other words, the mere presence of supportive structures or institutions, without genuine engagement and application of research findings, is insufficient to enhance academic quality.

At the international level, these findings are consistent with studies such as Faria, Wanke, Ferreira, and Mixon (2018) in Brazil as well as Ai Tran, Van, Thuy Phuong Nguyen, Thi Thanh Nguyen, and Minh Nguyen (2025), which demonstrated that effective research in higher education requires a meaningful connection between research, policymaking, and university performance. The current study confirms that the “application of research findings” is the most influential factor affecting academic quality, indicating that research that remains confined to publication without practical implementation has limited impact.

Furthermore, the relationship between scientific research and certain dimensions of academic quality, such as “institutional credibility” and “professors’ scientific growth,” was found to be weakly significant. This may be attributed to factors such as promotion policies not based on research performance, a limited research-oriented organizational culture, and ineffective reward systems – issues also noted in international studies (Farajollahi et al., 2013).

Descriptive findings also reveal the active involvement of young, educated faculty with mid-level academic ranks at Bamyan University, reflecting considerable potential for scientific development. However, the absence of female participation in the sample represents a significant limitation for a comprehensive assessment of research practices in Afghanistan’s higher education institutions. This gap has received limited attention in the literature and warrants in-depth investigation in future studies.

Overall, while confirming the decisive role of scientific research in enhancing university quality, the findings suggest that this impact is contingent upon three key factors: genuine faculty participation in research, practical application of research outcomes in teaching and policy-making, and effective utilization of research opportunities and resources. Failure to achieve any of these factors may weaken the impact of scientific research, even in the presence of supportive structures.

Consequently, policymakers and administrators in higher education, particularly in Afghanistan, must move beyond purely structural approaches and emphasize cultivating a research culture, fostering intrinsic motivation among faculty, and ensuring the practical application of research to fully leverage its potential in improving academic quality.

6. Conclusions

This study provides clear evidence that scientific research plays a fundamental and significant role in enhancing academic quality in higher education institutions, particularly at Bamyan University. Using SPSS for data analysis, including Pearson correlation and multiple regression tests, the study found a positive, relatively strong, and statistically significant relationship between scientific research and academic quality. The correlation coefficient ($r = 0.624$) and a highly significant p-value ($p < 0.01$) indicate that higher levels of research activity at the university are directly associated with improved academic quality.

Among the research indicators, “application of research findings” and “professors’

participation in research” emerged as the most influential factors in enhancing academic quality. This suggests that conducting research alone, without integrating findings into policymaking, educational planning, and curriculum development, does not achieve the desired impact. In contrast, when research outcomes are applied practically in academic processes, their impact is maximized. Active faculty engagement in research projects and interaction with academic structures not only improves teaching quality but also enhances scientific output and enriches the university environment.

Although indicators such as “structural support for research” and “research opportunities and facilities” showed positive correlations with academic quality, their effects were not statistically significant in the multiple regression model. This indicates that resources and support alone are insufficient; effective utilization, combined with faculty commitment and genuine participation, is crucial for achieving academic quality. Structures and resources must align with faculty needs, motivations, and competencies.

Simple regression analysis further confirmed that scientific research, even independently, has a strong and direct impact on academic quality. The Beta coefficient of 0.624 and an R^2 value of 0.389 indicate that approximately 39% of the variance in academic quality can be explained solely by overall research activity – a relatively high and noteworthy figure in social science research.

In conclusion, this study not only confirms the positive and significant relationship between scientific research and academic quality but also underscores that improving university standards in Afghanistan requires more than investment in research resources. Creating mechanisms for applying research findings in education and decision-making, and encouraging active faculty participation in research, are critical. Policymakers and educational administrators should revise research management practices, establish incentive systems, allocate targeted resources, and provide practical research opportunities to foster the quality enhancement of higher education through scientific research.

The demographic profile of respondents indicates that the study primarily reflects the views of young male faculty with master’s degrees and mid-level academic ranks. This highlights substantial academic potential at Bamyán University; however, limited female participation and the low number of faculty with doctoral degrees present significant challenges for academic development.

To address these issues, it is recommended to prioritize the practical application of research findings in planning, teaching, and management. Incentive policies such as promotion opportunities, study leave, and domestic and international collaboration should be implemented to encourage faculty participation. Revising research support structures with an emphasis on transparency, national prioritization, and the creation of a research project database can strengthen research capacity.

Developing research infrastructure, including libraries, laboratories, and data centers in underserved areas, is essential. Institutionalizing a research culture requires promoting scholarly discourse among faculty and students and providing platforms for academic journals, conferences, and workshops. Targeted support for young faculty through small grants, mentoring programs, and short-term study opportunities will further stimulate research activity.

Strengthening university-society linkages by selecting research topics relevant to local needs and collaborating with governmental and non-governmental institutions can enhance the university’s role in addressing societal challenges. Finally, ensuring gender equity and facilitating active participation of women in research are essential for balanced and sustainable academic development.

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References

- Ahmadi, R., & Tekemen, H. (2024). Akdeniz Üniversitesi Öğrencilerinin ChatGPT’nin Günlük Kullanımına İlişkin Eğilimleri. *Sosyolojik Bağlam Dergisi*, 5(3), 446–480. <https://aperta.ulakbim.gov.tr/record/274132>
- Ai Tran, C., Van, D. H., Thuy Phuong Nguyen, T., Thi Thanh Nguyen, T., & Minh Nguyen, T. (2025). Research in higher education quality assurance worldwide (2003–2023): a bibliometric analysis from the Scopus database. *Cogent Education*, 12(1). <https://doi.org/10.1080/2331186X.2025.2479405>

- Auzarmi, Z. K. R. (2023). The Study of Effectiveness of Quality Assurance Framework in Higher Education System of Afghanistan from Kabul University Instructors' Perspective. *Journal of Natural Sciences – Kabul University*, 6(2), 342–355. <https://doi.org/10.62810/jns.v6i2.382>
- Bryman, A. (2008). *Social research methods*. Oxford University Press.
- Darmani, M. (2021). Analysis of the legal and practical dimensions of the structural and functional guidelines for quality enhancement programs of the Ministry of Higher Education. *Kardan Legal Journal*, 3(1), 16–35. <http://dx.doi.org/%2010.31841/KJL.2021.15>
- Farajollahi, A., Sedaghat, K., Alizadeh, M., Hafez, A., & Bostani, H. (2013). Investigating limiting and reinforcing factors in conducting research by faculty members of Tabriz University of Medical Sciences. *Scientific Journal of Ilam University of Medical Sciences*, 21, 45–57. <https://sjimu.medilam.ac.ir/article-1-1235-fa.html>
- Faria, J., Wanke, P., Ferreira, J., & Mixon, F. Jr. (2018). Research and innovation in higher education: Empirical evidence from research and patenting in Brazil. *Scientometrics*, 123(1), 487–504. <https://doi.org/10.1007/s11192-018-2744-4>
- Gün, E. (2023). Çalışma kültürü, girişimcilik ve yeni üretim biçimleri: Antalya küçük sanayi esnafı üzerine bir araştırma [Doctoral dissertation]. Akdeniz Üniversitesi.
- Mohammadbeigi, A., Mohammadsalehi, N., & Aligol, M. (2015). Validity and Reliability of the Instruments and Types of Measurements in Health Applied Researches. *Journal of Rafsanjan University of Medical Sciences*, 13(12), 1153–1170. <http://journal.rums.ac.ir/article-1-2274-fa.html>
- Mohammadi, J., Zamani Moghaddam, A., Taghipour Zahir, A., & Ejtehadi, M. (2023). Investigating the Effective Factors on Qualitative Promotion of Science and Research Development in Higher Education. *Quarterly Journal of Social Development*, 17(4), 201–224. https://qjds.scu.ac.ir/article_18496.html
- Rahimi, A., & Ayoubi, M. O. (2023). The Role of Quality Assurance Criteria and Accreditation in Knowledge Production. *Jami Scientific Research Quarterly Journal*, 8(1), 5–26. <https://doi.org/10.61438/jsrq.v8i1.16>
- Rahimi, A., & Ayubi, M. O. (2022). Theoretical analysis of quality assurance and accreditation criteria of Ministry of Higher Education of Afghanistan. *Jami Scientific Research Quarterly Journal*, 7(2.3), 1–25. <https://doi.org/10.61438/jsrq.v7i2.3.1>
- Yazdi Moghaddam, H., & Mohammadi, A. (2008). Investigating the causes of the practical ineffectiveness of nursing research findings in improving education. *Horizon of Knowledge: Journal of Gonabad University of Medical Sciences and Health Services*, 13(4), 66–73. <http://imtj.gmu.ac.ir/article-1-302-fa.html>