



## Investigating the relationship between Higher education and sustainable development (A Case Study of Professors of Governmental Universities)

Noorullah Abedi<sup>1\*</sup>; Naqibullah Gulestani<sup>1</sup>; Mudasser Durrani<sup>1</sup>

<sup>1</sup>Department of Business Administration, Faculty of Economics, Nimruz higher education institute, Afghanistan

\*Corresponding Email: [Noorullah.abedi122@gmail.com](mailto:Noorullah.abedi122@gmail.com) Phone Number: +93706482373

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### Abstract

This study aims to explore the relationship between the higher education and sustainable development in governmental universities of Afghanistan. This study intends to provide light on the significance of higher education and the ways in which it can support sustainable development. The research used quantitative research methodology and the data came from 349 professors of the governmental universities of Afghanistan through a five-point Likert scale online questionnaire, and was analyzed by SPSS program. Cronbach's alpha was found 0.881 which it shows a strong reliability of the instrument. Also, the validity of the questionnaire has been confirmed by a number of experts in the field of economics. Hypotheses was developed and were tested through Spearman's rho correlation to determine the relationship between the variables. The finding exhibited that higher education has a positive and significant impact on sustainable development as much as 0.543. The research results show that research has the greatest effect of 0.482 and training has the least effect of 0.423 on sustainable development.

**Keywords:** Governmental Universities, Higher Education, Research, Sustainable Development, Training.

### Introduction

The concept of development has been extracted from natural sciences and applied to the process of change in human societies (Malaki Nia, 1393: 2). Economic development refers to a process that aims to create the welfare of society through increasing production, optimal use of natural resources, raising the level of employment and income, fair distribution of income, and providing better conditions for the consumption of goods and services (Malaki Nia, 1395: 2). In today's era, the connection between the university and the industry is one of the effective factors in increasing the capabilities of science and technology in every country (Shafiee, 1399: 17).

The impact of higher education on economic development has become a topic of increasing interest in both academic and policy circles (Bing, 2023: 1). Nowadays the realization that certain economic units, universities or other objects have impact on the economy of their

region comes more and more into prominence (Kotosz, 2015: 3). Higher education can lead to economic growth and development through both social and private channels (Malaki Nia, 1395: 3).

A trained person is the most important component of sustainable development (Musavi,1400,101). Sustainable development can be attributed for the first time to the report of the World Environment Commission, which was published by the United Nations in 1987. Sustainable development is development that meets the current needs of the world, without jeopardizing the ability of future generations to meet their needs (Malaki Nia, 1393: 2). So far, there have been various researches related to the impact of higher education on sustainable development in the world. According to a study by Parwin, Nadoshan and Mohammadi (1393), it was determined, in order to achieve sustainable development, the educational system is one of the elements that can pave the way to development and direct its path towards smooth development. Herath Bandara (2023) conducted a study on the relationship between higher education and economic development in west Virginia. The authors found that higher education has positive and significant effects on economic development in West Virginia, while investing in professional and business services, education and health care are delivering more results. Nnyanzi and Kilimani (2018) conducted a study on estimation of disaggregated impacts of education expansion on economic growth in Sub-Saharan Africa. The results point to a significant but differential impact of educational expansion in facilitating economic performance in the SSA region. Essentially, the growth enhancing impact of education depends on the type of education with secondary education yielding the largest impacts. Agasisti and Bertoletti (2022) conducted a study on higher education and economic growth. The results reveal that an increase in number of universities in a region is conducive to stronger economic growth within that region. And universities impact positively on the regions' economic development. Dr Verma, Ms Kumari and pal (2024).

conducted a study on the role of higher education in economic development. The result show Higher education is a critical driver of economic development, contributing to workforce development, innovation, social mobility, and global competitiveness. However, to maximize its impact, it is essential to address the challenges of rising costs and alignment with labour market needs. Chaudhary et al (2009) conducted a study on The nexus between higher education and economic growth: An empirical investigation for Pakistan. The empirical results of causality test indicate that there exists a unidirectional causality running from economic growth to higher education and no other direction of causality found between these variables. Noahlumun et al (2020) conducted a study on the role of higher education in sustainable economic development in Nigeria. The study indicates that higher education is a cardinal tool for sustainable economic growth and development that create a quality workforce, instills in individuals the value of achievement, promote life learning, support business and industries, carryout research and promote technologies as well as innovations. Higher education enhances upward socio-economic mobility and is an instrument of escaping poverty and unemployment. Considering that Afghanistan is a country with a young workforce, so the Islamic Emirate should try to provide the path to sustainable development through the provision of higher education for all its citizens. Conducting this research is very important because it helps the leadership of the Islamic Emirate in planning the country's economic development policies. This research tried to

check whether there is a relationship between higher education based on training, research and service components and sustainable development at Afghanistan's public universities.

Objective:

To investigate the relationship between higher education and sustainable development

To investigate the relationship between training and sustainable development

To investigate the relationship between research and sustainable development

To investigate the relationship between service and sustainable development

Main hypothesis

H1: there is a significant relationship between higher education and sustainable development

Sub hypothesis:

H1: there is a significant relationship between training and sustainable development

H2: there is a significant relationship between research and sustainable development

H3: there is a significant relationship between service and sustainable development

## Material and Method

Field of study

This research is practical in terms of purpose and correlational in terms of method. Its results are useful for the officials of the Ministry of Higher Education of Afghanistan, especially the universities of the country and other organizations with a similar management structure. The population of the research includes all the professors of public universities of Afghanistan and the sample size was calculated by Cochran's formula. The sample size is selected randomly.

$$n = \frac{\frac{z^2 pq}{d^2}}{1 + \frac{1}{N} (\frac{z^2 pq}{d^2} - 1)} = \frac{\frac{1.96^2 0.5 * 0.5}{0.05^2}}{1 + \frac{1}{5943} (\frac{1.96^2 0.5 * 0.5}{0.05^2} - 1)} = 360.89 \cong 361$$

Data collection methods

In this research, a researcher-made questionnaire was used to collect data. The questionnaire is arranged in two parts of higher education in the form of 12 questions and sustainable development in the form of 14 questions. The questionnaires were sent to 361 people online and only 349 questionnaires were answered. The Cronbach's Alpha was found for all the variables and they are shown in the table 1, below.

**Table 1.** Cronbach's Alpha Reliability

Variables	Cronbach Alpha	Number or Items
Training	0.705	5
Research	0.715	5
Service	0.723	2
Economic	0.766	6
Social	0.738	4
Environmental	0.769	4
Overall Cronbach Alpha	0.881	26

Source: Author compilation

Field (2009) recommended that questionnaires with an alpha of ( $\alpha=0.8$ ) are considered reliable, Pallant (2001) also supported that variables with alpha greater than 0.70 indicate the high reliability of the questionnaire for the study. Therefore, based on the reliability results the questionnaires were accepted and considered reliable for the study.

### Data analysis

After collecting the questionnaire, it was analyzed through descriptive and inferential statistics. Percentage and frequency were used in descriptive statistics analysis, and regression coefficient was used in inferential statistics analysis. Also, SPSS 26.0 software was used to measure correlation coefficient and regression coefficient.

### Findings

#### Descriptive findings

The research findings are presented in two section descriptive and inferential. In the descriptive part demographic questions and some general questions have been examined and it is shown in the tables 2 and 3 below.

**Table 2.** Demographic questions

Variables		Frequency	Percentage
age	Below 30 years	115	33 %
	31- 40 years	208	59.6 %
	41-50 years	26	7.4%
	More than 50 years	0	0
	Total	349	100%
Scientific rank	Namzad Pohanyar	109	31.2%
	Teaching assistant	140	40.1%
	Senior teaching assistant	75	21.5%
	Assistant professor	22	6.3%
	Associate professor	3	0.9%
	Professor	0	0
	Total	349	100%
Level of education	Graduate	90	25.8%
	Post graduate	223	63.9%
	Doctoral	36	10.3%
	Total	349	100%
Experience	Less than 1 year	28	8%
	1-3 years	98	28.1%
	4-6 years	64	18.3%
	7-9 years	43	12.3%
	More than 9 years	116	33.3%
	Total	349	100%

Source: Author compilation

The demographic table shows that the majority of the respondents are between 31-40 years old and it is about 56.9%. the majority of the respondents about 40.1% have teaching assistant scientific rank. The results also show that most of the respondents received post graduate level of education and about 33.3% of the sample have more than 9 years, experience.

**Table 3.** general questions

Questions		Frequency	Percentage
How important do you think higher education is for economic development?	Not at all important	1	0.3%
	Slightly important	9	2.6%
	Moderately important	41	11.7%
	Very important	298	85.4%
	Total	349	100%
Do you think higher education leads to higher salaries and better job opportunities?	Yes, always	192	55%
	Yes, sometimes	139	39.8%
	No, not usually	18	5%
	Total	349	100
How do you think higher education contributes to economic development?	By creating a more educated workforce	31	8.9%
	By promoting innovation and research	77	22.1%
	By improving productivity and efficiency	2	0.6%
	All of the above	239	68.5%
	Total	349	100
Do you think there is a correlation between a country's GDP and the level of higher education of its citizens?	Yes, a strong correlation	263	75.4%
	Yes, a weak correlation	48	13.8%
	No correlation	6	1.7%
	I'm not sure	32	9.2%
	Total	349	100

Source: Author compilation

The results in table 3 show that 85.4% of the respondents believe higher education is very important for economic development. About 55% believe higher education always lead to higher salaries and better job opportunities. The findings also indicate 68.5% of the respondents believe that higher education contributes to economic development by creating more educated workforce, promoting innovation and research and improving productivity and efficiency.

## 5.2 Inferential findings

For using statistical analyzes it should be determined that the data is normally distributed or not, if the data is normally distributed for testing hypotheses, parametric testing is used and if the data is not normally distributed non parametric testing is used for testing of

hypotheses. In this step, it is checked whether the data is normal or not by Kolmogorov-Smirnov normality test.

H0: data is normally distributed.

H1: data is not normally distributed

**Table 4.**Tests of Normality

Variables	Kolmogorov-Smirnova			
	Statistic	df	Sig.	Result
Training	.125	349	.000	Not normal
Research	.135	349	.000	Not normal
Service	.186	349	.000	Not normal
Economical	.138	349	.000	Not normal
Social	.125	349	.000	Not normal
Environmental	.059	349	.005	Not normal

Source: Author compilation

Based on the table 4 above, if the significant value of the data is more than critical value (0.05), Ho is accepted and the data will be normal, and if the significant value of the data is less than critical value (0.05), H1 is accepted and the data will not be normal.

### 5.3 Checking hypotheses

Considering that the data of the variables are not normal, non-parametric tests (spearman's rho) are used to determine the relationship between the research variables. The correlation of the variables according to the spearman's rho correlation coefficient is shown in the table 5 below,

**Table 5.**spearman's rho correlation

Variables		Economical	Social	Environmental	Sustainable development
Training	Correlation Coefficient	.413**	.294**	.335**	.423**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	349	349	349	349
Research	Correlation Coefficient	.379**	.435**	.391**	.482**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	349	349	349	349
Service	Correlation Coefficient	.398**	.322**	.390**	.450**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	349	349	349	349

Higher education	Correlation Coefficient	.483**	.423**	.436**	.543**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	349	349	349	349

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

Source: Author compilation

Main hypothesis: there is a significant relationship between Higher education and sustainable development

H0: there is not a significant relationship between higher education and Sustainable development

H1: there is a significant relationship between Higher education and Sustainable development

In the above table, correlation coefficient between higher education and sustainable development is obtained 0.543 which it shows moderate and significant relationship between the variables. This means by increasing 1 unit of higher education, sustainable development increases 0.543 units.

Sub- hypotheses 1: there is a significant relationship between training and Sustainable development.

H0: there is not a significant relationship between training and Sustainable development.

H1: there is a significant relationship between training and Sustainable development.

In the above table, correlation coefficient between training and sustainable development 0.423 which it shows weak and significant relationship between the variables. This means by increasing 1 unit of training, sustainable development increases 0.423 units.

Sub- hypotheses 2: there is a significant relationship between research and sustainable development

H0: there is not a significant relationship between research and sustainable development.

H1: there is a significant relationship between research and sustainable development.

In the above table, correlation coefficient between research and sustainable development is obtained 0.482 which it shows moderate and significant between the variables. This means by increasing 1 unit of research, sustainable development increases 0.482 units.

Sub- hypotheses 3: there is a significant relationship between service and sustainable development

H0: there is not a significant relationship between service and sustainable development.

H1: there is a significant relationship between service and sustainable development.

In the above table, correlation coefficient between service and sustainable economic development is obtained 0.450 which it shows moderate and significant between the variables. This means by increasing 1 unit of service, sustainable development increases 0.450 units.



## Discussion

The growing number of publications on the impacts of HEIs on SD since 2014 illustrates the increasing relevance of the growing field of study, in practice and academia (Finder et al, 2018). Universities are a crucial factor for the achievement of SDGs because they are a source of knowledge creation and transfer, and training, and they improve the awareness of environmental, economic, and social sustainability (Sart, 2022). The current research investigates the relationship between the higher education and sustainable development. The results obtained from the spearman's rho test show a positive and significant relationship between the higher education and sustainable development. Also it was determined that there is a positive and significant relationship between the components of higher education and components of sustainable development. The general results of the current research are consistent with many researches that have been done in the past. Some of the researches that have been done on this topic and are generally consistent with this current research are Nnyanzi and Kilimani (2018), Agasisti and Bertolotti (2022), Dr Verma, Ms Kumari and pal (2024), Noahlumun et al (2020) and Chaudhary et al (2009). All these researchers have reached the conclusion that higher education has a positive and significant impact on sustainable development. Overall, the findings suggest that government policymakers and educators should prioritize increasing access to higher education for underprivileged communities and provide government funding and support for higher education institutions to adapt to changing job market demands. Additionally, higher education institutions should make a balance between research and academic pursuits and practical, job-oriented education to meet the needs of the economy and society.

## Conclusion

This study aims to explore the relationship between the higher education and sustainable development in governmental universities of Afghanistan. This study intends to provide light on the significance of higher education and the ways in which it can support sustainable development. Based on the survey results, it is clear that higher education is very important for economic development. Based on the findings higher education contributes to economic development by creating more educated workforce, promoting innovation and research and improving productivity and efficiency and lead to higher salaries and better job opportunities which it affects sustainable economic development. correlation coefficient between higher education and sustainable economic development is obtained 0.543 which it shows moderate and significant relationship between the variables. This means by increasing 1 unit of higher education, sustainable economic development increases 0.238 units. The results of correlation also indicate that there are weak and significant (0.423), moderate and significant (0.482) and weak and significant (0.450) between components of higher education (training, research and service) and sustainable development. Therefore, the government should pay special attention to increasing the quality of universities as it can help to get sustainable economic development.



## Recommendations

1. The government should solve the financial problems of universities as it can provide better condition for research.
2. Ministry of higher education should adjust the curriculum of all the field according to the labor market.
3. Universities should increase entrepreneurial activities for providing new job market.
4. Universities should adjust their research according to market needs
5. Government should assign special budget for research
6. All universities should play an active role in economic, social and cultural projects.
7. The Ministry of Higher Education should provide conditions for joint projects (universities with industry).
8. Allocating a part of the workload of the academic staff members to the presence in the

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## Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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