



THE DEGREE OF CONTRIBUTION OF NORTHERN JORDANIAN UNIVERSITIES TO ACHIEVING SUSTAINABLE DEVELOPMENT GOALS AND ITS RELATIONSHIP TO THE QUALITY OF EDUCATIONAL OUTCOMES FROM THE POINT OF VIEW OF ACADEMIC LEADERS

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Abstract

The study aimed to identify the degree of contribution of northern Jordanian universities in achieving the sustainable development goals and its relationship to the quality of educational outcomes from the point of view of academic leaders. The descriptive survey correlational approach was used, and the questionnaire was a tool for collecting data. It was applied to a sample of (144) deans and heads of departments in northern Jordanian universities (Yarmouk, Al al-Bayt, and Science and Technology) They were chosen intentionally. The results showed that the degree of contribution of northern Jordanian universities in achieving the sustainable development goals as a whole was great, and the results showed that the level of educational outcomes in northern Jordanian universities was great, and the results showed the existence of a statistically significant correlation between the degree of contribution of northern Jordanian universities in achieving the sustainable development goals and the level of quality of educational outcomes.

Keywords: Degree of Contribution, Sustainable Development, Quality of Educational Outcomes, Academic Leaders.

Introduction

Sustainable development has garnered global attention through three major international summits on sustainable development: the *United Nations Conference on Environment and Development* held in Rio de Janeiro in 1992, the *World Summit on Sustainable Development* held in Johannesburg, South Africa in 2002, and the *United Nations Conference on Sustainable Development* hosted again in Rio de Janeiro, Brazil, in 2012. These conferences yielded significant outcomes, including the formulation of the *Sustainable Development Goals (SDGs)*, comprising 17 objectives to be achieved by the year 2030. They also played a vital role in enhancing international cooperation among nations, governments, and institutions, and in raising awareness about sustainability issues and the importance of collective action to protect the environment and achieve social justice. Moreover, the conferences emphasized the importance of sustainable planning by encouraging the development of national strategies aligned with global goals and securing the necessary financial resources to implement sustainable development projects (Roorda, 2020).

Muheiriq (2016) noted that higher education has been increasingly concerned with achieving the SDGs through various means inspired by these conferences. One strategic approach has been the integration of the goals into university curricula to raise students'

awareness of global social, economic, and environmental issues—such as climate change, poverty, gender equality, and human rights—thus enhancing their critical and analytical thinking in relation to these challenges. Regarding faculty engagement with SDGs, Al-Freijat (2019) argued that universities have directed faculty members to conduct research focused on sustainable development issues and to offer practical solutions to societal challenges. Universities have also sought to enhance faculty competencies in sustainability through training programs centered on sustainable development principles.

Universities strive to realize sustainable development in collaboration with governmental institutions and the private sector. These partnerships facilitate the exchange of knowledge and expertise to develop educational programs that support the SDGs. They also foster the creation of joint research initiatives and programs focused on innovation and sustainability, enabling the development of creative solutions to environmental and social challenges. Furthermore, universities organize events and conferences that bring together academics and decision-makers to identify sustainability priorities and promote learning and training opportunities for students, thereby equipping them with the skills necessary for the labor market and enhancing their employability. Through such partnerships, universities become pivotal actors in driving sustainable development at both local and regional levels (Tarawneh & Abu Ayada, 2024).

Dyke and Monbiot (2024) emphasized that higher education institutions play a leading role in achieving the SDGs. Through their core functions, universities are engaged in a range of sustainability-related activities, including teaching various branches of knowledge, conducting scientific research, engaging in community service, and offering voluntary contributions. Additionally, universities are responsible for preparing highly qualified graduates capable of meeting the demands of human activity and providing opportunities for higher education and lifelong learning—foundational pillars of sustainability.

Despite the importance placed by Jordanian universities on achieving the SDGs, some studies have indicated a limited role in this regard. For example, the study by Alomari and Khataybeh (2021) revealed a low level of understanding of the SDGs among students at Yarmouk University. Similarly, the findings of Abu-Anzeh, Ledraa, Nusair, and Obaidat (2022) showed that Jordan University of Science and Technology was not fully capable of fulfilling the requirements of a knowledge hub, particularly in terms of supporting businesses, promoting scientific research, and ensuring faculty diversity.

Higher education receives considerable attention from states as it is viewed as a key source of human capital and a central element in driving social, economic, political, environmental, and technological development. Since the goal of human development is to cultivate individuals' skills, knowledge, and capacities, the educational system is naturally the most appropriate setting for achieving such aims. The higher the quality and effectiveness of education, the greater the advancement in human development and the more progressive the socioeconomic and technological movement becomes. Consequently, educational institutions are expected to demonstrate the quality of their outputs (Al-Aqla, 2020).

Educational quality, therefore, seeks to ensure that the educational system meets specified standards and benchmarks across inputs, processes, outputs, and environments, thereby enabling the system to function at high levels of efficiency. Efforts to improve the quality of educational outcomes in universities refer to a deliberate, research-based process of

growth that involves comprehensive development across all educational fields—or in some cases, in specific areas such as academic/scientific disciplines, or economic, political, and social sectors. Universities undertake these efforts to elevate their educational outcomes to better levels. The process of enhancing outcome quality relies heavily on strategic academic planning to ensure that programs achieve their intended objectives and to prepare students capable of addressing life's challenges and ongoing transformations positively and effectively. This preparation also fosters students' creative and innovative thinking and encourages them to adopt deeper, more nuanced perspectives on life and the world around them.

Accordingly, higher education has garnered extensive interest due to its role as a source of human energy and its contribution to various developmental fields. The higher the quality of education, the more it contributes to human development and forward progress. Graduates represent the most crucial outputs of educational institutions, which aim to provide them with high-quality knowledge and skills. The qualitative level of graduates depends on their understanding of professional foundations and principles, as well as their ability to apply them in practical settings. Expanding graduates' intellectual horizons helps prepare them to become strategic leaders with holistic insights into the operational and administrative practices of the organizations they join (Al-Bouhi & Raafat, 2019).

Scientific research is also prioritized by higher education institutions, and the quality of research serves as a distinguishing feature that elevates a university's status. The relevance of research to labor market institutions lies in its foundation on theoretical and applied studies that address real community problems and needs. Since research is a core component of educational outputs, its quality indicators depend on factors such as a conducive research environment, incentives for faculty to conduct applied research that meets societal needs, prioritization of empirical research with tangible material and economic benefits, the involvement of research teams in supporting various productive sectors, the availability of dedicated financial resources for research funding and publication, and the expansion of relationships with diverse research institutions (Al-Amoush & Al-Ziyoud, 2022).

According to Azzam (2014), higher education institutions in Jordan have witnessed significant expansion. Higher education laws have facilitated a diversification of institutions and educational models, encompassing public universities governed by the Higher Education and Scientific Research Law and the Law on Public Universities, as well as private universities governed by the same overarching education law and a separate law for private institutions. Despite this expansion, Jordanian universities still face several challenges—most notably, a mismatch between graduates' qualifications and labor market needs, inconsistent quality in educational outputs, rising unemployment rates, outdated curricula, and a general lag in keeping pace with scientific and technological advancements. These issues have negatively affected students' ability to acquire new knowledge and adapt to global scientific developments. Addressing these challenges necessitates a re-engineering of administrative processes, the core of which lies in educational decision-making.

The researcher concludes that consumption and production practices and policies at the university level must focus on sustainability. Universities should offer student services that emphasize specific practices such as guidance and counseling to encourage students to engage in volunteer work both on and off campus, and to embrace the principles of sustainability. Moreover, students should be directed to participate in sustainability-related events such as

Earth Day celebrations, environmental, economic, and social seminars and lectures. Additionally, universities should maintain active engagement with leading local and international institutions—both public and private—in the field of sustainability, in order to transfer their knowledge and experience to the university community and to the surrounding society. It is essential to leverage global expertise and technologies to the fullest extent to enhance the quality of educational outcomes. This necessity underpins the rationale for conducting this study, which aims to examine the extent to which universities in Northern Jordan contribute to achieving the Sustainable Development Goals (SDGs) and how this relates to the quality of educational outputs.

Several studies have addressed issues relevant to the topic. For example, Alomari and Khataybeh (2021) aimed to assess university students' level of understanding of the SDGs in the scientific colleges at Yarmouk University. A descriptive survey method and questionnaire were used to collect data from a sample of 362 students. Results showed that students had a low level of understanding of the SDGs.

Aliwi, Zeyoud, and Abu Ayash (2022) conducted a study to identify the role of scientific research in supporting sustainable development from the perspective of faculty members at An-Najah National University. Using a descriptive methodology and questionnaire, the sample included 100 faculty members. Results indicated that all aspects related to the role of scientific research in supporting sustainable development in Palestine were rated highly.

Leal Filho, Salvia, and Eustachio (2023) conducted a global study to explore higher education institutions' involvement in implementing the United Nations' SDGs. Using a descriptive survey method and questionnaire, data were collected from 209 experts across 56 developing and developed countries. Results revealed that SDGs provide an opportunity for enhanced collaboration within and among universities. However, more attention should be paid to reviewing curricula and research programs to integrate the SDGs.

Sharabini (2024) conducted a study exploring the role of Egyptian universities in achieving the SDGs from the perspective of university leadership, within the frameworks of sustainable marketing and strategic leadership. The study employed both quantitative and qualitative survey approaches. A questionnaire was distributed to a sample of 120 academic leaders, and interviews were conducted with 30 university leaders. Results showed that Egyptian universities play a significant role in achieving the SDGs. Interview findings indicated that one of the primary reasons for adopting the SDGs was the perceived benefits to the nation and its citizens.

Oqilat, Taha, and Doudeen (2024) investigated the efforts of Al-Ahliyya Amman University in achieving the SDGs in light of the national strategy "Jordan Vision 2025" and the challenges facing the university in this regard. The study used content analysis methodology to review university reports and records from 2017 to 2021, and a descriptive analytical approach through a questionnaire distributed to 208 faculty members. Findings revealed that the university plays an active role in achieving the SDGs, especially in the area of education. However, moderate challenges were reported. No statistically significant differences were found based on gender, college, job title, or years of service at the university.

Regarding studies on the quality of educational outputs, Rawashdeh (2020) examined the relationship between the degree of strategic planning implementation and the alignment of educational outcomes in private universities in Amman from the perspective of faculty

members. Using a correlational descriptive method and a questionnaire, data were collected from 400 faculty members. Results indicated that the level of educational outputs was moderate.

Battah (2020) conducted a study aiming to develop proposed policies for doctoral student admissions at the University of Jordan, aligning educational outputs with labor market needs and improving the university's global ranking, drawing on Canadian university experiences. Using descriptive, quantitative, and evolutionary survey methods and analytical synthesis, the study employed both questionnaires and interviews with 20 academic leaders. Findings indicated that the current admission policy for postgraduate students, especially doctoral candidates, does not align with global changes, lacks effectiveness, and does not contribute to sustainable development. The policy mainly aims to increase revenue through higher enrollment numbers, focusing on quantity over quality. This was attributed to the limited awareness of academic department heads in selecting appropriate admission policies to attract outstanding doctoral candidates.

Nakhleh and Hanini (2022) explored the relationship between Palestinian university graduates' competencies and labor market needs from the perspective of faculty members. Using a descriptive analytical method and questionnaire, data were collected from 362 faculty members. Results showed that the alignment between graduates' competencies and labor market requirements was very high.

Finally, Sabbagh (2023) investigated the outcomes of the postgraduate programs in the College of Education at Umm Al-Qura University and their alignment with labor market demands from the perspective of graduates. A descriptive approach was used, and data were collected via a questionnaire from a sample of 284 graduates. Results indicated that the level of educational outcomes was moderate, while the programs' contribution to fulfilling labor market demands was low.

The Problem Statement and Research Questions

Sustainability has become one of the essential needs for higher education institutions. Consequently, universities have strived to meet sustainability requirements by offering environmental, social, economic, and educational consultations both within and beyond the university. They have also worked on updating their academic programs and curricula in alignment with the objectives of sustainable development, while recruiting and training qualified academic and administrative staff to support the implementation of their sustainable strategic plans and to respond to the evolving demands of society.

Despite the efforts of educational institutions to address the goals and requirements of sustainable development, the researcher has observed through her investigation in universities located in northern Jordan that universities' roles are often limited to theoretical planning for sustainability needs. Faculty members are typically provided with outcomes from meetings and assigned tasks related to sustainability without being actively involved in decision-making processes. Furthermore, most scientific and humanities faculties lack specialized programs directly related to sustainability.

This observation is corroborated by the findings of Banihani (2024), which revealed several challenges that hinder the role of Jordanian higher education in achieving sustainable development goals. Among these challenges are: low quality of education and research,

insufficient financial support, inadequate curriculum updates, and weak partnerships with community institutions.

Moreover, given that the educational outcomes of Jordanian universities have not yet reached the desired levels in accordance with international university standards, there is a pressing need to enhance the quality of these outcomes. This is further supported by the results of Dagher, Tarawneh, and Al-Qudah (2017), which indicated a mismatch between graduates' competencies and labor market demands, as well as deficiencies in the quality of educational outcomes.

These realities have provided the primary motivation for the researcher to conduct the present study, which seeks to address the following research questions:

1. What is the extent of northern Jordanian universities' contribution to achieving sustainable development goals from the perspective of academic leadership?
2. What is the level of quality of educational outcomes in northern Jordanian universities from the perspective of academic leadership?
3. Is there a statistically significant correlation at the ($\alpha = 0.05$) level between the extent of northern Jordanian universities' contribution to achieving sustainable development goals and the quality level of educational outcomes?

The Study Objectives

The present study aims to achieve the following objectives:

- To identify the extent of northern Jordanian universities' contribution to achieving sustainable development goals from the perspective of academic leadership.
- To assess the level of quality of educational outcomes in northern Jordanian universities from the perspective of academic leadership.
- To determine the correlation between the extent of northern Jordanian universities' contribution to achieving sustainable development goals and the level of quality of educational outcomes.

The significance of this study is reflected in the following aspects:

First: Theoretical Significance

To the best of the researcher's knowledge, this study is among the recent scholarly works addressing the extent of contribution by northern Jordanian universities to the achievement of sustainable development goals and its relationship to the quality of educational outcomes. The study's importance lies in evaluating universities' contributions to sustainable development in both economic and social domains. The research may offer valuable insights into how academic programs can be enhanced to meet labor market and societal needs, as well as into developing effective strategies that improve education quality and contribute to the attainment of sustainable development goals. Moreover, the study enriches the academic literature on education and sustainable development, particularly within the Jordanian and regional context.

Second: Practical Significance

The findings of this study are expected to benefit the following entities:

- **The Ministry of Higher Education**, by encouraging a review of its strategies and plans to improve the sustainability of higher education, address existing obstacles scientifically and realistically, and contribute to the enhancement of educational output quality.

- **The Higher Education Accreditation Commission**, where the study results may assist the commission in revising academic standards and programs, canceling or freezing certain academic offerings to ensure that educational programs align with societal and environmental needs. Furthermore, the study supports the commission's role in improving education quality by encouraging universities to integrate sustainability concepts into their curricula, thereby graduating students equipped to address environmental and social challenges.
- **University Presidents in Northern Jordan**, as the study provides feedback regarding their institutions' role in achieving sustainable development goals and its impact on improving educational output quality.
- **Educational Researchers**, by serving as a valuable reference for conducting similar studies on this topic, accessible and convenient for future academic enrichment.

Conceptual and Operational Definitions

This study includes the following definitions:

- **Sustainable Development (Conceptually)**: "The activity that leads to maximizing social welfare while preserving natural resources and minimizing environmental harm, reflecting the fact that sustainable development is more complex and intertwined than general development, incorporating economic, social, and environmental dimensions." (Kafi, 2017, p. 36).
- **Sustainable Development (Operationally)**: A process undertaken by northern Jordanian universities that begins with setting future goals and policies, followed by the formulation of implementation plans. This is conducted through effective utilization of available resources while analyzing the internal environment and understanding the external surroundings, thereby enhancing the university's capacity to confront both present and future challenges, improving its competitive abilities. This was measured by participants' responses to the instrument developed for this purpose.
- **Quality of Educational Outcomes (Conceptually)**: "The knowledge, skills, values, and attitudes that an educational institution seeks to instill in students through its curricula, upon completion of academic programs aligned with its mission, reflecting internationally acceptable standards and measured by outcomes rather than educational activities or curricula alone." (Al-Rubaie, Abdulhadi, & Al-Taie, 2013).
- **Quality of Educational Outcomes (Operationally)**: The degree attained by northern Jordanian universities based on academic leaders' responses to the instrument developed to measure this construct.
- **Degree of Universities' Contribution (Operationally)**: A quantitative description indicating the responses of deans and heads of academic departments in northern Jordanian universities regarding their institutions' roles in achieving sustainable development goals across the domains of community service, human development, economic development, and technological development. These efforts aim to equip students with the knowledge and skills necessary to engage with these issues effectively, thereby enhancing graduate quality and their capacity to meet labor market demands.

- **Academic Leaders and Department Heads (Operationally):** Individuals holding academic leadership positions within the public universities included in this study, specifically deans of faculties and heads of academic departments.

Delimitations of the Study

This study is confined to the following delimitations:

- **Subject Delimitation:** The contribution of northern Jordanian universities to achieving sustainable development goals and improving students' educational outcomes from the perspective of academic leaders.
- **Human Delimitation:** Deans and department heads at public universities located in northern Jordan.
- **Geographical Delimitation:** The study was conducted at public universities in northern Jordan.
- **Temporal Delimitation:** The study was conducted during the first semester of the 2024/2025 academic year.

Methodology and Procedures

Research Methodology: The study adopted the descriptive correlational survey approach, as it is most appropriate for the purposes of this research.

Population of the Study: The study population comprised all deans and department heads at northern Jordanian universities—namely, Yarmouk University, Al al-Bayt University, and Jordan University of Science and Technology—during the first semester of the 2024/2025 academic year. The total population consisted of 225 academic leaders, including 52 deans and 173 department heads, according to the statistics provided by the Human Resources departments of the aforementioned universities (2025).

Sample of the Study: The study sample included 144 deans and department heads from northern Jordanian universities.

Study Instrument

Two scales were developed to collect the data necessary to achieve the study's objectives, encompassing two main dimensions: (1) the degree of northern Jordanian universities' contribution to achieving sustainable development goals, and (2) the level of educational output quality.

To formulate the items for the first scale (degree of universities' contribution to sustainable development goals), relevant literature and previous studies were consulted, such as Shurbini (2024). This process resulted in 36 items distributed across four domains: economic development, human development, technological development, and community service.

For the second scale (level of educational output quality), items were developed based on the literature and studies such as Rawashdeh (2020) and Sabbagh (2023), resulting in 21 items.

Face Validity of the Scale

To verify the face validity of the scale, it was presented to a panel of ten (10) expert judges specializing in administration, educational foundations, curriculum and instruction, and measurement and evaluation from several Jordanian universities. They were asked to provide their feedback regarding the linguistic formulation and clarity of the scale, as well as any modifications they deemed appropriate. An item was accepted if at least 80% of the judges agreed upon it. The modifications unanimously recommended by the panel were as follows:

First: For the scale titled “*The Degree of Contribution of Northern Jordanian Universities to Achieving Sustainable Development Goals*”:

- Item (17): "Links its educational curricula to the state's development plans" was modified to: "Links its professional programs to the state's development plans."
- Item (22): "Enables students to build databases and adapt them for sustainable development programs" was modified to: "Enables students to build databases to adapt them for sustainable development programs."
- Item (31): "Provides educational courses and workshops for the local community, allowing individuals to learn new skills and increase their knowledge" was modified to: "Provides courses and workshops for the local community to allow individuals to learn new skills and increase their knowledge."
- Item (32): "Organizes cultural, sports, and social events, thereby enhancing communication between the university and the community" was modified to: "Organizes cultural, sports, and social events to enhance communication between the university and the community."

As a result, the final version of this scale consisted of 37 items.

Regarding the Educational Output Quality Scale:

- The term "graduate" was added to all items of the scale.
- Item (9): "The graduate possesses appropriate and serious time management skills to accomplish assigned tasks" was modified to: "The graduate possesses appropriate time management skills to accomplish assigned tasks."

Thus, the final version of this scale consisted of 21 items.

Scale Reliability

To calculate the internal consistency reliability of the study instrument, Cronbach's Alpha (α) was used based on data collected from the initial application to the sample. To estimate test-retest reliability, the instrument was administered to the pilot sample twice with a two-week interval between applications. Pearson's correlation coefficient was calculated to assess the relationship between the two administrations, as shown in Tables (1) and (2).

Table (1): Internal Consistency Reliability Coefficients for the Scale Measuring the Degree of Contribution of Northern Jordanian Universities to Achieving Sustainable Development Goals and its Domains

Scale and Domains	Internal Consistency Reliability
Economic Development	0.95
Human Development	0.94
Technological Development	0.94
Community Service	0.94
Total	0.98

As shown in Table (1), the overall internal consistency reliability coefficient for the scale measuring the degree of contribution of Northern Jordanian universities to achieving sustainable development goals was (0.98), while the coefficients for its domains ranged between (0.94–0.95). These high values indicate the scale's strong construction and its appropriateness for the purposes of this study.

Table (2): Internal Consistency Reliability Coefficient for the Educational Output Quality Scale at Northern Jordanian Universities

Scale	Internal Consistency Reliability
Educational Output Quality	0.98

It is evident that the internal consistency reliability coefficient for the Educational Output Quality Scale at Northern Jordanian universities reached (0.98), indicating the scale's strong construction and its suitability for the study.

Scoring Criteria for the Scales

In order to interpret the means for the two scales, a five-point Likert scale was utilized. The score range (1–5) was divided into five categories by calculating the interval length as follows:

$$\text{Interval length} = (\text{Highest score} - \text{Lowest score}) \div \text{Number of categories} = (5 - 1) \div 5 = 0.8$$

Based on this, the levels were classified as follows:

- From 1.00 to less than 1.80: Very Low
- From 1.80 to less than 2.60: Low
- From 2.60 to less than 3.40: Moderate
- From 3.40 to less than 4.20: High
- 4.20 and above: Very High

Results Presentation and Discussion

First: Results for the first research question: *"To what extent do Northern Jordanian universities contribute to achieving sustainable development goals from the perspective of academic leaders?"*

The means and standard deviations for the degree of contribution of Northern Jordanian universities to achieving sustainable development goals were calculated. The domains were ranked in descending order based on their overall means, as presented in Table (3).

Table (3): Means and Standard Deviations for the Sample's Estimates of the Degree of Contribution of Northern Jordanian Universities to Achieving Sustainable Development Goals, Ranked in Descending Order

Rank	Domain	Mean	Standard Deviation	Level
1	Community Service	4.02	0.63	High
2	Human Development	3.90	0.61	High
3	Economic Development	3.78	0.73	High
4	Technological Development	3.46	0.97	High
-	Total	3.79	0.49	High

As shown in Table (3), the overall degree of contribution of Northern Jordanian universities to achieving sustainable development goals was high, with a mean of (3.79) and a standard deviation of (0.49). This high level indicates that the role of these universities aligns with expectations.

Such results may be attributed to the universities' vibrant environments that foster creativity and innovation through the integration of modern information and communication

technologies. This aligns with the findings of Abu Qdais, Saadeh, Al-Widyan, Al-Tal, and Abu-Dalo (2025), which demonstrated that Jordanian universities contribute to achieving technological sustainable development goals by enhancing students' and faculty members' technological and innovative competencies, organizing seminars and conferences via e-learning platforms, facilitating knowledge dissemination, open dialogue, and raising awareness about sustainable development goals and their implementation.

Additionally, universities contribute through the development of student projects and active partnerships with civil society institutions, thus positively impacting both universities and the broader community in alignment with sustainable development standards in the digital era. Universities further promote student activities that cultivate critical thinking and positive values, encouraging faculty to employ teaching methods that enhance students' creative and innovative thinking skills. These results may also stem from curricula being updated according to the latest technological and scientific developments, fostering future-oriented skills that align with labor market needs within the framework of sustainable development.

Furthermore, Jordanian universities direct faculty research towards sustainable development issues, positioning such efforts as key mechanisms for achieving global sustainable development goals. This reflects the Jordanian state's commitment, through the Higher Education Council, to international environmental protection agreements and broader SDGs, as part of numerous national initiatives contributing to the 2030 sustainable development agenda.

The domains ranked as follows:

- **Community Service** ranked first ($M = 4.02$, $SD = 0.63$, High), likely due to universities offering educational programs focused on environmental, social, and economic issues, promoting global awareness among students and faculty. Universities encourage faculty and students to conduct research aimed at developing innovative solutions to societal problems. They also actively collaborate with local communities through service programs and voluntary initiatives, improving quality of life and strengthening community resilience while preparing a generation equipped with the skills necessary to achieve sustainable development goals. Furthermore, universities have established partnerships with local schools and healthcare centers to develop joint projects addressing social issues and advancing sustainable development.
- **Human Development** ranked second ($M = 3.90$, $SD = 0.61$, High), which may be attributed to universities providing continuous training and workshops for faculty and staff in teaching skills, research, administration, and communication, along with orientation programs for new employees to ease adaptation and foster institutional culture. Additionally, partnerships with governmental and private institutions facilitate knowledge and expertise exchange to sustainably develop human resources in line with national development plans.
- **Economic Development** ranked third ($M = 3.78$, $SD = 0.73$, High), possibly due to universities investing in innovative research and collaborative projects with local institutions, creating job opportunities and preparing youth to launch economically viable enterprises. Universities are also incorporating economic dimensions into strategic planning, optimizing resource utilization to achieve financial independence and reduce reliance on government budgets, foreign grants, and donations.

- **Technological Development** ranked fourth ($M = 3.46$, $SD = 0.97$, High), likely reflecting universities' efforts to update curricula with emerging technologies such as artificial intelligence, data analytics, and machine learning, and to equip laboratories and research centers with advanced technology.

Community Service Domain

Table (4): Mean Scores and Standard Deviations of the Study Sample's Estimates on the Items of the *Community Service* Domain, Arranged in Descending Order According to Their Means

Rank	Item	The University Contributes to Achieving Sustainable Development Goals as Follows:	Mean	Standard Deviation	Degree
1	26	Plays a role in developing local areas through supporting economic and social projects	4.32	0.88	Very High
2	29	Provides courses and workshops for the local community to enable individuals to acquire new skills and increase their knowledge	4.31	0.85	Very High
3	28	Encourages faculty members to participate in volunteer and social service programs	4.30	0.90	Very High
4	25	Opens its doors to the local community for the establishment of its developmental activities	4.22	0.84	Very High
5	27	Invites representatives of community institutions to participate in its seminars, conferences, and scientific programs	4.13	0.86	High
6	30	Promotes cultural understanding and communication among various community components through its activities	4.09	0.87	High
7	24	Monitors various changes in the community environment and designs appropriate programs accordingly	3.88	0.90	High
8	23	Supports local entrepreneurs by providing advice and financial support for start-up projects	3.70	0.89	High
9	31	Organizes cultural, athletic, and social events to strengthen university-community interaction	3.66	0.95	High
10	32	Encourages students to participate in community service activities	3.61	0.85	High
Overall			4.02	0.63	High

It is evident from Table (4) that the means and standard deviations of the study sample's estimates regarding the extent of North Jordanian universities' contribution to achieving sustainable development goals in the *Community Service* domain ranged between (3.61–4.32).

Item (26), "Plays a role in developing local areas through supporting economic and social projects," ranked first with a mean of (4.32), a standard deviation of (0.88), and a very high degree. This may be attributed to the fact that North Jordanian universities serve as centers

for research and innovation, enabling faculty and students to develop ideas and solutions to address challenges facing their communities. Additionally, universities offer programs and workshops to help community members develop their skills for the job market and secure appropriate employment opportunities. Moreover, they take the initiative to support local entrepreneurs by providing guidance and counseling and encouraging them to build their projects, thus improving quality of life in local areas.

Conversely, item (32), "Encourages students to participate in community service activities," ranked last with a mean of (3.61), a standard deviation of (0.85), and a high degree. This may be due to North Jordanian universities' efforts to develop students' social and leadership skills, teamwork abilities, communication, problem-solving, and awareness of societal challenges, thereby motivating students to devise innovative ideas to improve their communities.

Human Development Domain

Table (5): Mean Scores and Standard Deviations of the Study Sample's Estimates on the Items of the *Human Development* Domain, Arranged in Descending Order According to Their Means

Rank	Item	The University Contributes to Achieving Sustainable Development Goals as Follows:	Mean	Standard Deviation	Degree
1	11	Designs specialized training programs for administrative and leadership development of its employees	4.33	0.86	Very High
2	14	Provides promotion opportunities for distinguished employees	4.32	0.81	Very High
3	16	Encourages employees to adopt new work methods	4.26	0.86	Very High
4	12	Supports the principle of lifelong learning for its staff	4.22	0.90	Very High
5	13	Encourages its staff to pursue specialized postgraduate studies	3.91	0.97	High
6	15	Conducts training workshops for staff on values, principles, and desired practices	3.90	0.94	High
7	10	Aligns its professional programs with national development plans	3.65	0.99	High
8	9	Creates a positive work environment among employees	3.51	1.08	High
9	17	Provides social welfare to retain employees by investing in offered services	3.46	0.81	High
10	18	Enhances employees' capabilities to achieve excellence and quality	3.44	0.86	High
Overall			3.90	0.61	High

As shown in Table (5), the means of the study sample's estimates on the items of the *Human Development* domain ranged between (3.44–4.33). Item (11), "Designs specialized training programs for administrative and leadership development of its employees," ranked first with a mean of (4.33), a standard deviation of (0.86), and a very high degree. This may be attributed to North Jordanian universities' practice of conducting comprehensive surveys of their employees' training and knowledge needs on an ongoing basis and developing training programs aligned with those needs, thereby enhancing academic and administrative skills to meet evolving demands and support the achievement of institutional strategic goals.

Conversely, item (18), "Enhances employees' capabilities to achieve excellence and quality," ranked last with a mean of (3.44), a standard deviation of (0.86), and a high degree. This may be due to the universities' sustainable efforts to implement their planned strategic and developmental objectives, improve employee competencies for job performance, and elevate institutional rankings both locally and internationally.

Economic Development Domain

Table (6): Mean Scores and Standard Deviations of the Study Sample's Estimates on the Items of the *Economic Development* Domain, Arranged in Descending Order According to Their Means

Rank	Item	The University Contributes to Achieving Sustainable Development Goals as Follows:	Mean	Standard Deviation	Degree
1	4	Engages with relevant entities in scientific research to support economic development	4.10	0.82	High
2	1	Encourages the alignment of scientific research with economic development plans	4.08	0.85	High
3	2	Provides sufficient funding to support research focused on economic development	4.01	0.90	High
4	3	Sets its objectives and strategies in line with economic development needs	3.98	0.84	High
5	7	Seeks to generate additional financial revenues	3.71	1.03	High
6	8	Cooperates with local community institutions to implement productive projects that benefit the university	3.69	1.02	High
7	5	Offers economic and developmental services through scientific research	3.60	1.07	High
8	6	Diversifies its projects according to various economic needs	3.45	1.13	High
9	9	Invests its financial resources in alignment with its vision and strategy	3.43	1.03	High
Overall			3.78	0.73	High

As shown in Table (6), the means of the study sample's estimates on the items of the *Economic Development* domain ranged between (3.43–4.10).

Item (4), "Engages with relevant entities in scientific research to support economic development," ranked first with a mean of (4.10), a standard deviation of (0.82), and a high degree. This may be attributed to the activation of research centers in North Jordanian universities to conduct quantitative and qualitative studies on community economic development, alongside the provision of financial and moral incentives to distinguished researchers offering practical solutions for advancing economic development in the country. Conversely, item (9), "Invests its financial resources in alignment with its vision and strategy," ranked last with a mean of (3.43), a standard deviation of (1.03), and a high degree. This may be due to the universities' efforts to achieve financial self-sufficiency by effectively investing all their facilities, utilizing revenues to achieve sustainable economic development, thereby enhancing their infrastructure and expanding educational environments that foster creativity and innovation.

D. The Field of Technological Development

Table (7): Means and Standard Deviations of the Study Sample Members' Estimates on the Items of the Field (Technological Development), Arranged Descendingly According to Their Means

Rank	Item	The University Contributes to Achieving Sustainable Development Goals as Follows:	Mean	Standard Deviation	Degree
1	19	Employs modern technologies to analyze and address sustainable development challenges	3.65	1.17	High
2	17	Graduates specialists capable of linking development programs with technology	3.58	1.10	High
3	20	Promotes awareness of the importance of using ICT in development	3.51	1.14	High
4	21	Utilizes computer networks in its internal and external transactions	3.50	1.08	High
5	18	Enables students to build databases to serve sustainable development programs	3.41	1.11	High
6	22	Equips students with the latest technologies, knowledge, and skills to serve development planning	3.38	1.13	High
7	23	Holds training courses and workshops for staff and students to familiarize them with technological advancements	3.37	1.09	Moderate
8	24	Continuously updates its technological means	3.35	1.10	Moderate
Overall			3.46	0.97	Low

It is noted from Table (7) that the means of the study sample members' estimates on the items of the technological development field ranged between (3.35–3.65). Item (19), "Employs modern technologies to analyze and address sustainable development challenges," ranked first, with a mean of (3.65), a standard deviation of (1.17), and a high degree. This may

be attributed to the keenness of universities in Northern Jordan to collect and analyze environmental data and employ technological tools that reduce environmental harm.

Meanwhile, item (24), “Continuously updates its technological means,” ranked last, with a mean of (3.35), a standard deviation of (1.10), and a moderate degree. This may be due to the universities' continuous efforts to update their technological infrastructure to align with the requirements of the knowledge era, thereby enabling their members to adopt and integrate modern technologies into their academic and administrative tasks.

Secondly: Results of the Second Question: “What is the level of quality of educational outputs in Northern Jordanian universities from the perspective of academic leaders?”

The means and standard deviations for the items measuring the level of quality of educational outputs in Northern Jordanian universities from the perspective of academic leaders were calculated, as presented in Table (8).

Table (8): Means and Standard Deviations of the Study Sample Members' Estimates of the Level of Quality of Educational Outputs in Northern Jordanian Universities, Arranged Descending According to Their Means

Rank	Item	The Level of Quality of Educational Outputs is Represented as Follows:	Mean	Standard Deviation	Level
1	1	The graduate possesses the knowledge and skills necessary to perform their job	4.06	0.85	High
2	18	The graduate is able to link theory and practice at work	4.01	1.00	High
3	3	The graduate has the ability to work as part of a team	3.96	0.90	High
3	5	The graduate has appropriate oral and written communication skills	3.96	0.86	High
5	16	The graduate employs the necessary knowledge and skills in their specialization	3.94	0.88	High
6	6	The graduate can address and solve problems scientifically	3.93	0.92	High
7	19	The graduate adapts and understands the work environment	3.91	0.91	High
8	8	The graduate demonstrates high competence at the beginning of employment	3.90	0.88	High
8	12	The graduate demonstrates high professional ethics	3.90	0.93	High
10	10	The graduate can express and regulate emotions	3.89	0.93	High
11	11	The graduate possesses analytical, objective, and critical thinking	3.87	0.90	High
12	9	The graduate demonstrates adequate time management to complete required tasks	3.86	0.92	High

Rank	Item	The Level of Quality of Educational Outputs is Represented as Follows:	Mean	Standard Deviation	Level
13	13	The graduate acts responsibly in personal and professional relationships	3.85	0.89	High
14	14	The graduate takes responsibility for self-learning and personal and professional development	3.84	0.92	High
15	15	The graduate suggests appropriate recommendations to perform and develop work based on their specialization	3.83	0.94	High
16	2	The graduate can write work reports	3.81	0.88	High
17	17	The graduate demonstrates adequate innovation skills	3.80	0.92	High
18	4	The graduate possesses managerial and leadership skills	3.79	0.91	High
19	7	The graduate has the necessary skills in using various information technologies	3.78	0.93	High
20	20	The graduate demonstrates loyalty to the institution they work for	3.75	0.95	High
Overall			3.88	0.67	High

It is observed from Table (8) that the means for the quality level of educational outputs in Northern Jordanian universities, from the academic leaders' perspectives, ranged between (3.75–4.06), with an overall high level. This may be attributed to the universities' continuous efforts to update their curricula according to the labor market needs in Jordan. Some universities also monitor the employment status of their graduates, identify areas of weakness, and work on improving them for future graduates, particularly in technical outputs.

Additionally, universities strive to equip students with communication, teamwork, problem-solving, adaptability, time management, emotional regulation, and self-discipline skills to contribute effectively to both the Jordanian and international labor markets.

The highest mean was for item (1), "The graduate possesses the knowledge and skills necessary to perform their job," with a mean of (4.06) and a standard deviation of (0.85), at a high level. This may be due to the universities' success in providing their graduates with scientific knowledge and skills to compete in the labor market and enhance the university's reputation and global ranking.

Following this, item (18), "The graduate is able to link theory and practice at work," ranked second with a mean of (4.01) and a standard deviation of (1.00). This may reflect the universities' focus on balancing theoretical and practical aspects, establishing scientific laboratories and training workshops to effectively prepare students according to labor market needs.

In third place were items (3) and (5), both scoring a mean of (3.96), addressing teamwork and communication skills respectively. This reflects universities' emphasis on

guiding faculty members to integrate leadership and life skills into their teaching, enabling students to collaborate and benefit from each other's expertise.

Item (17), "The graduate demonstrates adequate innovation skills," ranked seventeenth with a mean of (3.80) and a standard deviation of (0.92), at a high level. This may be due to universities providing students with the knowledge and skills necessary to develop creative ideas, identify weaknesses in their work, and address them, thereby enhancing trust in the university's educational outputs.

In eighteenth place was item (4), "The graduate possesses managerial and leadership skills," with a mean of (3.79) and a standard deviation of (0.91). This may be attributed to universities' efforts to develop students' leadership skills in line with 21st-century requirements, and to nurture their psychological aspirations and hidden intellectual talents, thus strengthening their self-confidence.

Lastly, item (20), "The graduate demonstrates loyalty to the institution they work for," ranked twentieth with a mean of (3.75) and a standard deviation of (0.95), at a high level. This may reflect the universities' efforts to instill public service ethics, adherence to professional codes of conduct, and the importance of field training that fosters a sense of commitment among students.

The results of the present study differ from Rawashdeh's (2020) study, which found that the level of educational outputs was moderate. They also differ from Battah's (2020) findings, which indicated that the current admission policy for graduate (especially doctoral) students at the University of Jordan does not keep pace with global changes, is ineffective, and does not contribute to sustainable development.

Third: Results of the Third Question:

The third research question states: *"Is there a statistically significant correlational relationship at the significance level ($\alpha = 0.05$) between the degree of contribution of Northern Jordanian universities in achieving sustainable development goals and the level of quality of educational outputs?"* Pearson correlation coefficients were calculated between the axis measuring the degree of contribution of Northern Jordanian universities to achieving sustainable development goals and its domains, and the axis measuring the level of quality of educational outputs, as presented in Table (9).

Table (9): Pearson Correlation Coefficients Between the Axis of the Degree of Contribution of Northern Jordanian Universities to Achieving Sustainable Development Goals and Its Domains, and the Axis of the Level of Quality of Educational Outputs

Relationship	Statistic	Sustainable Development Goals	Community Service	Human Development	Economic Development	Technological Development
Educational Output Quality	Correlation Coefficient	0.74**	0.61**	0.63**	0.23**	0.65**
	Statistical Significance	0.000	0.000	0.000	0.000	0.000

Relationship	Statistic	Sustainable Development Goals	Community Service	Human Development	Economic Development	Technological Development
	Sample Size	144	144	144	144	144

* Statistically significant at the 0.05 level.

The results in Table (9) indicate that there is a statistically significant moderate positive correlation at the significance level ($\alpha = 0.05$) between the axis of the contribution of Northern Jordanian universities to achieving sustainable development goals and its domains, and the axis of the level of quality of educational outputs. This suggests that universities play a significant role in promoting sustainable development through improving the quality of education and providing services that contribute to community development. The positive correlation implies that increasing the universities' contribution in these domains may lead to an enhancement in the quality of education, thereby underscoring the importance of higher education in achieving sustainable development.

Consequently, universities can be considered primary drivers of societal development by focusing on the quality of education and the educational outputs that meet community needs and contribute to developmental goals. This may be attributed to the fact that Northern Jordanian universities are working on developing educational programs that align with community needs, improving the educational levels of students, and equipping them with the necessary skills for the labor market. This, in turn, promotes human development and improves living standards within the community.

Moreover, universities play a role in economic development by researching innovative methods and solutions through collaboration with the private sector and local communities, addressing economic and social challenges, which reflects the significance of higher education as a tool for achieving sustainable development. Such efforts also contribute to technological advancement and increased productivity.

Recommendations

In light of the study findings, the following recommendations are proposed:

- **To maintain this high level of sustainable development in Northern Jordanian universities**, it is recommended that universities establish a specialized unit dedicated to sustainable development. This unit would oversee all activities related to sustainable development, such as organizing seminars, offering courses, and supporting student activities both inside and outside the university to promote sustainable behavior.
- **The university should continue to introduce specialized academic programs focused on sustainable development at both undergraduate and postgraduate levels**, as well as incorporate specialized courses on sustainable development into the curricula of compulsory and elective courses.
- **Faculty members should be granted scholarships to study at leading universities specializing in sustainable development**, thereby expanding their knowledge in this field and transferring those experiences to their home institutions. This would enhance their knowledge, practices, and attitudes related to education for sustainable

development and allow for the integration of such knowledge into their research, thus elevating their universities' global rankings.

- **Researchers and specialists are encouraged to conduct qualitative studies on the degree of contribution of Northern Jordanian universities to achieving sustainable development goals and its relationship with the quality of educational outputs, from the perspectives of administrative leadership in both public and private sector institutions.**

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