



The Level of Knowledge of the Concept of Sustainable Development in Palestine Among Employees of Sports and Government Institutions

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ABSTRACT

This study aimed to assess the level of knowledge of the concept of sustainable development among employees in sports and government institutions in Palestine and to examine whether gender-based differences exist. Using a descriptive-analytical approach, a questionnaire of (10) items measuring knowledge of sustainable development and its goals was administered to (2040) male and female employees across youth and sports-related institutions in Palestine, including the Higher Council for Youth and Sports, the Palestinian Olympic Committee, relevant ministries, and sports federations. The instrument was validated by experts, with reliability confirmed at Cronbach's alpha of (0.79) for the knowledge domain, and data were collected in (2022). Statistical analysis involved means, standard deviations, and an independent-samples t-test for gender differences. Findings revealed that the overall knowledge level was moderate, with a mean of (3.22) out of (5), as all (10) items scored at a moderate level. The highest-scoring aspects were recognizing that sustainable development instills environmental ethics (3.32) and enhances awareness of social issues (3.27), while the lowest were recognizing gender equality (3.14) and prior reading on sustainable development (3.11). Results further indicated a statistically significant difference favoring males. Overall, the moderate knowledge level reflects a general but incomplete understanding of sustainable development, highlighting the need to strengthen comprehension of specific aspects, particularly gender equality, through awareness and training programs that would enable institutions to contribute more effectively to achieving sustainability goals.

Keywords: Sustainable Development, Knowledge, Awareness, Palestine, Sports Sector.



Introduction

The concept of sustainable development has become central to global development strategies since the late twentieth century, especially after the release of the famous Brundtland Report in 1987, which defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” This concept encompasses interconnected dimensions, including economic and social development as well as environmental protection, ensuring a balance among them to guarantee the continuity of development and achieve intergenerational equity. Due to its comprehensive nature, definitions and interpretations of sustainable development have varied; some consider it a moral vision related to human behavior and environmental awareness, while others view it as a framework for comprehensive planning that balances economic growth, social justice, and environmental sustainability. For example, Al-Agha and Abu Jamea (2010, p. 470) indicate that sustainable development represents a comprehensive process of change aimed at enhancing educational, health, cultural, and economic awareness among all members of society, while ensuring fairness in resource distribution and protecting the environment.

In the current global context, the United Nations adopted the 2030 Agenda for Sustainable Development, which includes 17 Sustainable Development Goals (SDGs) that all countries strive to achieve by 2030. Palestine has joined these international efforts despite the major challenges it faces, most notably the Israeli occupation, which imposes a complex political and economic reality. Hilal (2008, p. 25) points out that the occupation and limited sovereignty have negatively affected development processes in Palestine, where human development suffers from structural obstacles that hinder the achievement of its goals. Nevertheless, the Palestinian authorities have made efforts to develop national strategies aligned with the SDGs, including integrating sustainability concepts into sectoral development plans and strengthening partnerships to achieve these goals. In this context, raising awareness of sustainable development among workers and society at large is vital to ensure their effective participation and support for development efforts.

The awareness of individuals working in governmental and civil institutions about sustainable development is a key foundation for the success of comprehensive development policies. Understanding the principles and objectives of sustainability enables employees to integrate them into their work plans and sectoral projects. For example, the sports and youth sector is a vital field that can contribute to achieving SDGs such as health, education, and equality, provided that awareness and commitment exist to direct activities toward those goals. Globally, sports have proven to be an effective tool for promoting development and peace, as many international studies have shown. Therefore, understanding the concept of sustainable development by personnel working in the Palestinian sports sector can positively impact sports programs and initiatives aimed at serving society and achieving social and developmental goals (Jarrar, 2023, pp. 103–125).



Based on the above, it becomes clear that research into the level of awareness of sustainable development in Palestine among employees in relevant institutions is important, given their vital role in planning, decision-making, and program implementation. Thus, this study aims to assess the extent of their knowledge of the concept of sustainable development and its multiple dimensions, as well as to provide data that can be used in developing education and training programs in the field of sustainability.

Problem Statement

The problem of the study lies in the need to understand the extent to which employees in Palestinian institutions perceive the concept of sustainable development and its importance. Despite the frequent mention of this concept in national policies and programs, there may still be variations in how it is understood by employees themselves. Accordingly, the research problem revolves around the following main question: What is the level of knowledge among the study sample about the concept of sustainable development in Palestine? From this main question, the following sub-questions arise:

1. What is the level of knowledge among employees in sports and governmental institutions regarding the dimensions and principles of sustainable development (economic, social, and environmental)?
2. Are there statistically significant differences in the level of knowledge of sustainable development among the sample that can be attributed to gender?

Objectives of the Study

In line with the problem statement, this study seeks to achieve the following objectives:

- To determine the level of knowledge of employees in sports and governmental institutions in Palestine about sustainable development, by measuring their understanding of its principles and fundamental goals.
- To evaluate differences in the level of knowledge among the sample according to certain demographic variables especially gender.

Significance and Scope of the Study

The importance of this study stems from both theoretical and practical aspects, as follows:

- Theoretical significance: This study provides a scientific contribution to sustainable development research within the Palestinian and Arab contexts by highlighting the level of understanding of one of the core concepts in modern development literature among an important category of employees. It offers up-to-date data on the awareness and knowledge of employees in sports and governmental institutions about sustainable development, thereby enriching



local literature that often focuses on other aspects of development (such as economic or social) without addressing awareness of the concept itself. The study also connects sustainability concepts with employee empowerment and institutional capacity-building, which are theoretical aspects that deepen understanding of the role of knowledge in achieving development goals.

- **Practical significance:** The results of this study can be used by policymakers and institutional managers in Palestine. If the findings reveal low levels of knowledge in certain areas, it will be necessary to develop training programs and workshops to raise employees' awareness of sustainable development and ways to apply its principles in their fields of work. For example, relevant ministries could integrate training materials on sustainability into capacity-building plans for staff. In addition, academic and consulting institutions can benefit from these results to guide community education efforts about sustainable development. This study also aligns with the global orientation toward Education for Sustainable Development (ESD), as emphasized by UNESCO in its May 2021 report (UNESCO, 2021), which considers raising awareness and competencies across all segments of society on sustainability concepts as a fundamental condition for achieving the 2030 Agenda. Therefore, this study sheds light on the awareness level of employees, who are supposed to be the implementers of development plans, thereby helping to identify their training and awareness needs.

Study Limitations

To interpret the study results and understand its context accurately, it is important to clarify the boundaries it adopted, which are as follows:

- **Topical limitations:** The study is limited to measuring the level of knowledge of the concept of sustainable development and its goals among the sample participants. Thus, it does not address in detail other related aspects (such as employees' attitudes toward implementing sustainability or obstacles to achieving it in their institutions), except insofar as they relate to understanding the concept itself. In this study, sustainable development is covered through its three main dimensions (economic, social, and environmental) and some related values (such as intergenerational equity, equality, and awareness of social issues).
- **Spatial limitations:** The study was conducted in the State of Palestine and focused on institutions in the youth and sports sector as well as governmental institutions related to sustainable development. The sample included employees from various Palestinian governorates in the West Bank (north, center, and south), where the targeted institutions are located. Accordingly, the results reflect the Palestinian context, with its unique political and social characteristics.



- **Temporal limitations:** The fieldwork was carried out in 2022, a year that witnessed continued Palestinian efforts to achieve the SDGs despite challenges. The timeframe must be taken into consideration, especially since the level of societal awareness of a concept may evolve over time with the increase of awareness campaigns.
- **Human limitations:** The study was limited to employees in sports and governmental institutions connected to development and youth issues. This chosen sample means the results reflect this specific group only and cannot be generalized directly to the entire Palestinian society or even to all employees in other sectors. However, the findings may provide a general indicator useful for assessing awareness of sustainable development among similar groups.

In short, these limitations clarify the scope of the study and contribute to understanding the framework within which the data were collected and analyzed, helping to place the results in their proper context and avoid misinterpretation or inaccurate generalization.

Operational Definitions

For the purposes of this study, the following operational definitions are adopted for the key terms:

- **Sustainable Development:** Operationally defined as a comprehensive developmental process that addresses current societal needs in the fields of economy, society, and environment while preserving the rights of future generations to meet their needs. In the context of this study, the term refers to a set of principles and concepts that ensure the continuity of development. The participants' knowledge of these principles was measured through a questionnaire that included topics such as resource and environmental preservation, social justice, women's empowerment, and gender equality. Thus, the score obtained by a participant in the "sustainable development knowledge" domain of the questionnaire reflects his/her awareness and understanding of the concept and its theoretical dimensions.
- **Knowledge of the Concept of Sustainable Development:** Refers in this study to the extent of participants' understanding and awareness of the concept of sustainable development, its core principles, and goals. This was measured through the knowledge dimension of the questionnaire, where participants were asked to assess their level of agreement with statements related to various aspects of sustainable development, such as clarity of the concept for them, their prior exposure to it, and their awareness of its importance and values. The resulting quantitative value, representing the mean scores of individuals across the dimension's items, reflects their level of knowledge of the concept. This level was classified into three categories—low, medium, and high—according to a graded criterion explained in the research methodology.



- **Sports and Governmental Institutions Related to the Study:** Refers to official and civil institutions in Palestine that focus on issues of development, youth, and sports. The study includes the Higher Council for Youth and Sports, a governmental body supervising the youth and sports sectors; the Palestinian Olympic Committee, responsible for sports development and athletes; the Palestinian Council of Ministers, which includes some departments related to sustainable development; and both the Ministry of Higher Education and Scientific Research and the Ministry of Education, due to their focus on education as a means to achieve sustainable development. The study also covers the Ministry of Women's Affairs, given its role in women's empowerment within the SDGs, and various sports federations. Employees from these entities were selected because of their direct or indirect connection to sustainable development, whether through youth and sports programs or through educational and social policies.
- **Gender Differences in Knowledge Levels:** Refers to potential differences in the average scores of sustainable development knowledge between male and female participants in the sample. This was operationalized by conducting a statistical test (independent samples t-test) comparing male and female scores in the knowledge domain of sustainable development. If the difference was statistically significant (at a significance level typically set at 0.05), gender-based differences were inferred; if not significant, the knowledge level was considered comparable between genders.

These operational definitions help clarify how the terms are understood within the scope of the research and ensure that readers and users of the research instrument share a common understanding of the key concepts employed.

Theoretical framework

The concept of sustainable development emerged as a global response to the shortcomings of traditional development models that prioritized economic growth and improved living standards while neglecting the environment and the rights of future generations. This neglect produced critical challenges such as climate change, resource depletion, and social inequality, leading to the organization of international conferences like the United Nations Conference on Environment and Development (Earth Summit, Rio, 1992), which established sustainable development as a multidimensional paradigm integrating economic, social, and environmental considerations. The Arab Women Organization (2016) emphasized that this integration distinguishes sustainable development from earlier development approaches by ensuring that growth does not occur at the expense of environmental protection or social justice.

From an economic perspective, sustainable development seeks to achieve growth, income improvement, and poverty reduction through rational use of resources and the promotion of the green economy. It also prioritizes balancing production and



consumption, raising productivity, and reducing unemployment (Arab Women Organization, 2016). At the same time, the social dimension focuses on enhancing human development indicators such as health and education, while ensuring justice, equality, and participation. It underscores the empowerment of marginalized groups, particularly women and youth, and stresses the equitable distribution of development benefits. According to the Arab Women Organization (2016), social sustainability requires building human capital and achieving gender equality as conditions for inclusive and resilient societies.

The environmental dimension, which is central to the sustainable development framework, involves protecting ecosystems, conserving natural resources, and addressing issues such as pollution and climate change. The “golden rule” of sustainability stresses that resources must be used moderately and within the regenerative capacity of nature (Arab Women Organization, 2016). Thus, ecological sustainability is viewed as the foundation for ensuring life quality for present and future generations, linking the concept of intergenerational equity with practical policies of resource management.

The integration of these three dimensions has been widely acknowledged as a cultural and institutional shift. In a regional study, the Arab Women Organization (2016) emphasized that sustainable development requires transformative changes across governance and society, with women playing a vital role in fostering inclusivity and sustainability. This aligns with international perspectives that stress the role of education and awareness. UNESCO (2022) identified Education for Sustainable Development (ESD) as essential for equipping individuals with the skills, knowledge, and values necessary to contribute effectively to sustainability goals. Public awareness, therefore, becomes a critical factor in ensuring responsible consumption, gender equality, and climate action.

Empirical evidence supports the theoretical importance of awareness and education. For example, Chong et al. (2022) found that sports-based programs have contributed to advancing gender equality, one of the Sustainable Development Goals, by empowering girls, though their impacts have not yet reached systemic levels. Similarly, Coulibaly et al. (2018) argued that the lack of public awareness about sustainability principles may hinder the effective implementation of environmental policies, even when legal frameworks are in place. This underscores the idea that awareness is necessary but insufficient without accompanying institutional support and policy enforcement.

Within the Palestinian context, awareness of sustainable development is influenced by structural challenges, including occupation and economic restrictions, but also by growing national interest in sustainability. The Palestinian Central Bureau of Statistics (2019; 2022) issued reports tracking progress toward the SDGs and contributed to the development of a national sustainability strategy. However, gaps remain in measuring public awareness and the knowledge levels of specific groups, such as institutional

employees. These gaps highlight the need for field studies that rely on surveys and questionnaires to evaluate sustainability awareness at the organizational level.

Against this backdrop, several studies provide valuable insights. Tim and Al-Nadi (2010) highlighted the contribution of Palestinian women to development from the perspective of graduate students, showing a broad consensus on women's developmental roles despite societal challenges. Al-Agha and Abu Jamea (2010) proposed a comprehensive strategy for development in Palestine based on sustainability principles, emphasizing the importance of planned and conscious resource use. Mortaja (2017) underscored the role of women in promoting sustainability values in Gaza, noting their influence through family education and social awareness. Abu Ali (2018) examined women's empowerment in Egypt, concluding that continuous education and training were essential for women's effective contribution to the 2030 Agenda, while also identifying socio-cultural barriers. Lahmadi (2019) revealed that cultural traditions in Yemen limited women's participation in development, a finding consistent with broader Arab contexts. More recently, Al-Rubaie and Al-Dairi (2021) examined Omani society's perceptions of sports in achieving the SDGs, finding high levels of awareness and positive attitudes, but also gender-based differences in knowledge.

Taken together, these studies show that sustainable development awareness is uneven across contexts and dimensions. While environmental awareness is often more widely understood, aspects such as social justice and gender equality remain less recognized due to cultural and structural barriers. The present study distinguishes itself by focusing specifically on employees in sports and governmental institutions in Palestine, a group that plays a direct role in planning and implementing development programs. By concentrating on explicit knowledge of sustainability concepts rather than general perceptions, and by linking the sports/youth dimension to sustainable development, this research aims to fill an existing gap in local literature while also contributing to comparative understanding across regional contexts.

Research Method

This study adopted the descriptive-analytical method, which was considered the most appropriate for achieving its objectives of describing the level of knowledge among the study sample and analyzing quantitative data to identify differences and relationships. The method was chosen for its ability to depict phenomena as they exist in reality by collecting direct data from participants and analyzing it statistically to reach objective conclusions. Data were collected using a structured closed-ended questionnaire and analyzed with descriptive statistics such as means and standard deviations, as well as inferential statistics including the independent samples t-test to examine differences between means. The descriptive approach was applied within a specific temporal and spatial framework, following systematic steps in instrument design, data collection, and data processing.



Study Population

The study population included all employees working in official and civil institutions related to the sectors of youth, sports, and development in Palestine, specifically in the West Bank. The research focused on seven main institutions: the Higher Council for Youth and Sports, the Palestinian Olympic Committee, the General Secretariat of the Council of Ministers, the Ministry of Higher Education and Scientific Research, the Ministry of Education, the Ministry of Women's Affairs, and sports federations affiliated with the Palestinian Olympic Committee. These institutions were selected due to their direct or indirect involvement in developmental issues such as youth and women's empowerment, community sports development, and the promotion of education and culture, all of which are closely linked to the Sustainable Development Goals.

Study Sample

The sample was selected using a non-probability convenience sampling method, given the diversity of institutions, the difficulty of implementing proportional random sampling across all of them, and logistical obstacles such as political instability during the data collection period. The final sample consisted of (2040) employees who agreed to complete the questionnaire in either paper or electronic format. To ensure broad geographic representation, the sample was distributed across the West Bank as follows: (39%) from the north, (29%) from the center, and (31%) from the south. Demographically, males constituted (43.1%) of the sample while females accounted for (56.9%), allowing for gender-based comparisons. Age groups were also diverse, with (32%) of participants aged 30 years or younger, (35%) between 31–40 years, and (33%) above 40 years, thus covering young, middle-aged, and older groups. In terms of education, all participants held at least a university degree, with the majority holding either a bachelor's or a master's degree, indicating a relatively homogenous educational profile across the sample.

Data Collection Tools

The primary data collection tool was a structured closed-ended questionnaire designed to measure participants' knowledge of sustainable development and its key dimensions, covering economic, social, and environmental aspects along with related values such as gender equality, intergenerational justice, and community awareness. To complement the quantitative data, the researcher also conducted (10) semi-structured interviews with key leaders in the sports and development sectors. These interviews provided deeper qualitative insights into institutional awareness and practices of sustainability, though the main emphasis of this research remained on the quantitative findings from the questionnaire, while the qualitative insights were used to enrich and contextualize the analysis.



Validity and Reliability

The questionnaire was reviewed by (8) experts, and modifications were made based on their feedback. A pilot test with (45) participants confirmed internal consistency, with significant correlations between items and their domains. Cronbach's Alpha coefficients were 0.79 for the knowledge section, 0.85 for the sports section, 0.87 for the challenges section, and 0.87 for the entire instrument, indicating high reliability.

Data Collection Procedures

Following validation of the instrument, coordination was established with the administrations of the target institutions to obtain approval for distributing the questionnaire. Electronic copies were sent via official institutional emails to those willing to participate, and paper copies were distributed during selected meetings and workshops. A cover letter clarified the study objectives, ensured confidentiality, and confirmed that responses would be used solely for research purposes. Data collection spanned two months at the beginning of 2022, during which continuous follow-up was conducted to secure sufficient responses from each institution for balanced representation. A total of (2120) questionnaires were retrieved, of which (2040) were complete and valid for analysis, representing a satisfactory response rate and ensuring adequate reliability and generalizability of the results.

Statistical Analysis

Data were coded and entered into SPSS for analysis. Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to describe demographic characteristics and assess knowledge levels across items and domains. A three-level interpretation scale was applied for Likert means: (1.00–2.33 = low, 2.34–3.66 = moderate, 3.67–5.00 = high). Inferential statistics included independent samples t-tests to examine gender-based differences in knowledge, using a significance level of ($\alpha = 0.05$), and one-way ANOVA to test the effects of age and years of experience. Results were presented in sequentially numbered tables and figures with concise titles, and were later compared with theoretical and empirical studies to support the discussion.

Study Results

The following section presents the detailed results related to the first research question: "What is the level of knowledge among the study sample regarding the concept of sustainable development in Palestine?" This includes descriptive results (means and standard deviations) for all items under the knowledge dimension of sustainable development, in addition to the overall result for the dimension. A brief reference will also be made to the test of differences by gender in knowledge level.

**Level of Knowledge of the Study Sample about Sustainable Development****Table (1): Means and Standard Deviations of the Study Sample's Knowledge of the Concept of Sustainable Development (n = 2040)**

No.	Item	Mean	Std. Dev.	Level
1	The concept of sustainable development is clear to you	3.16	1.13	Medium
2	You have previously read about sustainable development	3.11	1.13	Medium
3	You know the importance of sustainable development	3.20	1.13	Medium
4	Sustainable development preserves public facilities	3.22	1.16	Medium
5	Sustainable development instills positive ethics in dealing with the environment	3.32	1.18	Medium
6	Sustainable development spreads awareness among members of society	3.28	1.17	Medium
7	Sustainable development focuses on educating members of society	3.26	1.15	Medium
8	Sustainable development achieves equality without discrimination between males and females	3.14	1.13	Medium
9	Sustainable development contributes to achieving fairness in job opportunities	3.20	1.15	Medium
10	Sustainable development enhances awareness of community issues	3.27	1.16	Medium
	Overall level of knowledge of the concept of sustainable development	3.22	1.07	Medium

As shown in Table (1), the mean responses of the participants on all items of the knowledge dimension regarding sustainable development fell within the medium category (ranging between 3.11 and 3.32). This indicates that the overall level of knowledge can be classified as medium, both at the individual item level and at the dimension level as a whole. The overall mean score for the dimension (knowledge of sustainable development) was 3.22 with a standard deviation of 1.07, confirming that the employees' knowledge of this concept is not low but also not high, remaining within an acceptable range with room for improvement.

Looking at the details of the items, statement (5) "Sustainable development instills positive ethics in dealing with the environment" ranked first with a mean score of (3.32 out of 5). This indicates that the majority of participants recognized the ethical-environmental aspect of sustainable development, reflecting an understanding that it encourages adopting positive practices and behaviors toward protecting the environment. In fact, around 60% of the sample agreed with this statement, which can be explained by the relatively widespread environmental awareness, possibly resulting from awareness campaigns or people's direct experiences with issues such as pollution and resource scarcity.

In second place came statement (10) "Sustainable development enhances awareness of community issues" with a mean of (3.27). This also highlights a value-based dimension, as participants associated sustainable development with raising awareness of societal problems and addressing them. This perception may stem from the recognition that concepts such as social justice and empowering vulnerable groups are



integral to sustainable development, and may have been emphasized in previous training sessions or workshops attended by the participants. Approximately 60% also agreed with this item, reinforcing the conclusion that most of the sample acknowledged the role of sustainable development in community awareness.

A group of items showed relatively close means, between (3.20–3.28). These included statement (6) on the role of sustainable development in spreading awareness among community members (3.28), statement (7) on its focus on educating members of society (3.26), statement (4) on preserving public facilities (3.22), statement (9) on achieving fairness in job opportunities (3.20), and statement (3) on knowing the importance of sustainable development (3.20). These results indicate a moderate level of understanding of these aspects. For example, preserving public facilities (statement 4, mean 3.22) revealed divided views: about half of the participants believed that sustainable development includes preserving public facilities, while the other half were either unsure or disagreed. Some explained in open comments and interviews that the lack of tangible results on the ground, such as continued neglect of facilities or limited green spaces, made them less convinced of this aspect. Nearly 50% of the participants even stated that “there is no preservation of public facilities” in the current situation, likely due to the absence of visible improvements in infrastructure.

Similarly, many participants expressed uncertainty about whether sustainable development leads to equal job opportunities. About 50% agreed that fairness in employment opportunities does not exist in reality, pointing to gaps between supply and demand in the labor market and high unemployment among youth and graduates. This reflects the difficult Palestinian economic reality, where fair employment opportunities are seen as a distant goal, despite the principle of equity embedded in sustainable development.

For statement (3), “You know the importance of sustainable development,” the mean of 3.20 shows that most participants were generally aware of its importance but with varying levels of depth in their understanding. Many may have heard of sustainable development as a slogan or general concept without fully grasping its rationale, which explains the moderate level of agreement.

The lowest mean was recorded for statement (2), “You have previously read about sustainable development,” at (3.11). This suggests that a notable proportion of the sample had not read directly about sustainable development or had not engaged with specialized sources on the subject. Instead, their knowledge may have been acquired through training, informal learning, or general media exposure rather than self-directed reading. This points to the fact that sustainable development has not yet become firmly established as acquired knowledge for many, but rather remains a general awareness shaped by work or community contexts.

Interestingly, statement (8), “Sustainable development achieves equality without discrimination between males and females,” scored the second lowest mean (3.14). This reflects some skepticism among participants regarding the realization of gender



equality within sustainable development. Only about 20% of the sample agreed that sustainable development ensures gender equality, while the majority either disagreed or remained neutral. This is an important finding, suggesting that gender equality—despite being a core goal of the SDGs (Goal 5)—is still viewed with doubt or seen as unattainable in practice. This hesitation may stem from cultural traditions that limit women's full participation in certain fields and from the conservative nature of some communities. Participants may not perceive significant changes in gender roles in their workplaces or communities. The ongoing occupation and conflict may also shift priorities toward survival and security at the expense of women's empowerment, making gender equality appear less realistic in the current context. Nevertheless, it is worth noting that some participants, particularly women, expressed optimism that continued development efforts would gradually lead to greater fairness. Several comments also indicated that Palestinian women themselves have become more aware of their rights and are actively engaged in community and workplace contributions, although the path toward full equality remains long.

Overall, all items were classified at a medium level, with none reaching a high level (≥ 3.67) or dropping to a very low level (< 2.33). This indicates that employees' knowledge of sustainable development across its different aspects is generally basic to moderate but not deeply rooted or comprehensive. Considering the overall mean of (3.22), it can be concluded that employees have a fair general understanding of sustainable development and its principles, but there is clear room for improvement, particularly in areas where uncertainty or weak agreement was observed, such as gender equality and fairness in employment opportunities.

Differences in Knowledge Levels by Gender

One of the study's sub-questions sought to examine whether there were differences in sustainable development knowledge between male and female participants. To answer this, an independent samples t-test was conducted on the mean scores of the knowledge dimension for both genders. The results can be summarized as follows:

- The mean knowledge score for males was approximately (3.30), while the mean for females was (3.16). Although both means fall within the medium level, the difference of about (0.14) favored males.
- The t-test showed that this difference was statistically significant at the ($\alpha = 0.05$) level, as the calculated significance value (Sig.) was less than 0.05. Therefore, the null hypothesis of no difference was rejected, and it was concluded that there is a statistically significant difference in sustainable development knowledge between males and females, in favor of males.
- The size of the difference, although not very large in practical terms, suggests that males in the sample had greater exposure to or knowledge of certain aspects of sustainable development compared to females. This may be attributed to the fact that many of the male participants occupied leadership or planning positions within their institutions, which provided them with more



opportunities to engage with sustainable development concepts through training or external participation. In contrast, females—despite being the majority in the sample—may have been employed in roles not directly linked to sustainable development projects or had fewer training opportunities.

- This result is consistent with the findings of Al-Rubaie and Al-Dairi (2021) in the Omani context, where differences were also found between males and females in knowledge and perceptions of sustainable development, again favoring males. Such findings may be explained by the tendency of men in Arab societies to be more engaged with public affairs and development discourse, or perhaps more assertive in assessing their own knowledge compared to women, who may be more cautious in self-evaluation. In any case, these differences highlight the need to place greater emphasis on strengthening female employees' knowledge of sustainable development, perhaps through greater involvement in workshops and relevant conferences.

On the other hand, no clear differences were found in knowledge levels attributed to age or years of experience (based on ANOVA tests). This indicates that understanding of sustainable development was relatively similar across different age groups and among employees with varying levels of experience. Such a result may suggest that sustainable development is a relatively new concept not tied to a particular generation of employees, with all groups still in the process of developing their understanding regardless of age or professional background.

In summary, the results of the first research question indicate that the overall level of knowledge among Palestinian employees in sports and governmental institutions regarding sustainable development is generally medium, with some variation in understanding certain aspects (highest for the environmental and ethical dimension, and lowest for gender equality). Small but statistically significant differences exist by gender, in favor of males. These findings reflect a reality that requires improvement through awareness-raising and capacity-building programs, a topic that will be discussed in detail in the following section and linked with insights from the literature and previous studies.

Discussion of Results

This study discusses the findings of the first research question in light of the theoretical framework and previous studies, with a focus on interpreting the discovered level of knowledge, its different dimensions, and the possible factors influencing it. It also compares the results with related research in local and regional contexts, while considering their practical implications within Palestinian institutions.

Level of Knowledge: Why is it Moderate?

The results showed that the knowledge of the participants regarding sustainable development was at a moderate level. This indicates a general awareness of its

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principles among employees, though not a deep or comprehensive understanding of all aspects of the concept. Several factors may explain this outcome.

First, sustainable development is relatively new in the Palestinian context. Although the 2030 Agenda has been adopted globally, integrating sustainability concepts into institutional strategies and projects in Palestine remains at an early stage. Many employees may have encountered the concept through national discourse or reports, but without direct engagement in detailed training. Thus, their knowledge remains moderate rather than high, reflecting the fact that the shift toward sustainability is a gradual collective learning process rather than a mere administrative decision.

Second, the concept itself is broad and abstract, encompassing multiple principles and goals. Individuals may understand some of these dimensions while overlooking others. Indeed, participants showed stronger awareness of environmental-ethical aspects—likely due to the visibility of global and local environmental messages—along with community awareness dimensions. In contrast, gender equality and fair economic opportunities were less understood, as employees may perceive these as separate social issues rather than integral parts of sustainability. Yet, sustainability literature emphasizes that empowering women and ensuring equity are essential pillars of the concept. This disconnection in participants' perceptions likely explains the variations in their responses.

Third, practical realities and personal experiences shape participants' views. Employees who do not observe tangible sustainability initiatives in their institutions (such as green practices or gender-inclusive policies) may perceive the concept as theoretical and not fully applicable, reducing their conviction about certain elements. Their doubts about fairness in job opportunities or the preservation of public facilities reflect judgments based on current economic hardships, high unemployment, and infrastructural challenges in Palestine. As a result, knowledge of sustainable development often remains theoretical rather than grounded in lived institutional practices.

Finally, the role of education and general cultural awareness cannot be overlooked. Although most participants held university degrees, not all were trained in fields related to development or the environment. Their knowledge was therefore secondary, shaped by general culture or personal interest. Those with broader exposure or who occupied leadership positions—more often men—tended to report higher levels of knowledge. By contrast, those whose fields were less directly linked to sustainability relied on limited and indirect exposure. In this light, the moderate level is not entirely negative; rather, it provides a reasonable foundation that can be developed further.

Comparison with Previous Studies

The finding of a moderate level of knowledge is consistent with earlier regional studies. For example, Al-Rubaie and Al-Dairi (2021) in Oman reported relatively high percentages of respondents claiming awareness of the SDGs, but this awareness was not necessarily deep. A similar situation appears in the Palestinian context: nearly



everyone has some idea about sustainable development, but the level of detail varies. Likewise, Mortaja (2017) in Gaza stressed that successful sustainability programs require raising awareness, particularly among women, noting that their empowerment in this field depends on continuous educational efforts. This echoes the present study's conclusion that current knowledge levels are insufficient to drive transformational change.

In Egypt, Abu Ali (2018) also emphasized the importance of continuous education for women in achieving sustainable development. This resonates with the present finding that female employees, despite their higher proportion in the sample, showed lower knowledge than their male counterparts. It suggests a need for targeted training initiatives designed specifically to connect women with the goals and applications of sustainability. Traditional cultural norms may not directly associate women with economic or developmental roles, yet sustainability requires their full inclusion across all sectors.

Gender equality emerged as a particularly sensitive issue in this study, with participants expressing doubts about its realization in practice. This mirrors the findings of Lahmadi (2019) in Yemen, which showed that while legal frameworks for women's empowerment existed, cultural and societal barriers hindered implementation. In the Palestinian context, despite cross-sectoral gender strategies and policies, employees still perceived a gender gap, reflected in the relatively low scores for items on equality. This points to an urgent need to emphasize, through awareness and training, that gender equality is inseparable from sustainable development. Future training should include concrete examples of how women's empowerment contributes to economic and social benefits, such as increased female labor force participation driving economic growth or girls' education reducing poverty and improving family health. Local and regional success stories could help reshape perceptions and demonstrate the tangible links between equality and development.

Gender Differences

The study also revealed small but statistically significant differences in knowledge levels by gender, with males scoring slightly higher. This may reflect differences in opportunities, positions, or access to training. Men are still overrepresented in senior administrative roles that require engaging with development frameworks, whereas women may have fewer chances to attend relevant workshops or conferences. Informal feedback suggested that men also participated in development-related training at higher rates, while women faced constraints such as household responsibilities or lack of nomination by supervisors. Thus, the statistical differences have a broader social context. Training organizations should be mindful of these barriers and actively encourage greater female participation to ensure equitable knowledge-building opportunities.



Interpreting Results in the Palestinian Context

The political and economic dimension cannot be ignored when considering employees' understanding of sustainable development. Sustainable development requires national sovereignty that allows states to manage resources freely and implement long-term plans. In the Palestinian context, the lack of control over land and resources (such as water), combined with restrictions imposed by the Israeli occupation, obstructs the implementation of development projects and makes the realization of sustainability highly challenging. Many employees are aware of this reality, which shapes their responses with skepticism about whether sustainable development can deliver on its promises under occupation. Some interviewees expressed the view that "real development is postponed until the occupation ends," while current efforts are perceived as "attempts to mitigate crises." Such perceptions likely influenced responses, where some participants rated items lower not on the basis of conceptual knowledge but on how achievable they believe those goals are under current conditions. For example, an item such as "Sustainable development achieves equality without discrimination..." may have been interpreted in terms of present reality rather than as an intended principle, leading to lower agreement. This overlap between knowledge and perceived feasibility should be taken into account.

The educational and awareness dimension also emerged clearly. The results point to the urgent need for broader education on sustainable development. This aligns with international recommendations, such as the Sustainable Development Report – Empowering Women and Girls Better (2019) issued by UN agencies, which emphasizes that achieving sustainability goals requires the participation of all groups, particularly women and youth, in learning and transformation. In Palestine, creating mass awareness programs could enhance employees' knowledge while generating positive public pressure for real implementation. Media and social media platforms can be leveraged to promote sustainability in accessible and engaging ways, for instance through local success stories such as a community association succeeding in recycling waste in a village, or a youth initiative advancing digital education in refugee camps. These examples would help employees and the broader public see sustainable development as tangible and locally relevant rather than as abstract global rhetoric.

When compared with other contexts, the Palestinian case presents both similarities and differences. In advanced economies, employees' awareness of sustainability is typically higher because sustainability and corporate social responsibility are embedded in organizational culture and practice. In contrast, in developing countries, awareness levels vary depending on education and policy support. The findings of this study, along with those of Al-Rubaie and Al-Dairi, suggest that in Arab societies there is moderate-to-high theoretical awareness of sustainability, but practical application is hindered by systemic challenges. Kothari (2013) argued that the real challenge for the Global South is not a lack of vision but weak institutional implementation and limited monitoring. This also applies in the Palestinian context: employees possess partial knowledge, but converting it into practice requires stronger institutional support.



Hence, one of the key recommendations is to encourage institutions to integrate sustainability principles into their operational plans, thereby reinforcing learning through practice.

Recommendations Derived from the Results

Based on the results and their discussion, several recommendations are proposed to strengthen knowledge of sustainable development among employees in Palestinian institutions and enhance their role in achieving sustainability goals:

1. **Develop and implement specialized training programs:** Relevant authorities such as the Ministry of Planning, the Higher Council for Youth and Sports, the Ministry of Women's Affairs, and civil society organizations should design training courses and workshops that cover all three sustainability dimensions (economic, social, and environmental). These should include local examples, be offered as short targeted modules, and ensure the active participation of women both as trainees and trainers.
2. **Integrate sustainability into institutional policies and practices:** Institutions should embed sustainability into operational strategies. For example, the Ministry of Education could include sustainability concepts in school curricula, while the Higher Council for Youth and Sports could adopt a "Green Institution" initiative promoting practices such as energy efficiency and recycling. Embedding sustainability in everyday institutional culture would move it from theory to practice.
3. **Launch media and community awareness campaigns:** Large-scale campaigns should simplify and explain the 17 SDGs and link them to everyday Palestinian life. Social media infographics, television and radio segments, and interviews with local employees can help normalize sustainability as a local priority.
4. **Promote regional and international exchanges:** Institutions should enable employees to participate in regional and international conferences—whether in person or online—such as the Arab Forum on Sustainable Development. Study visits to municipalities or institutions that have achieved progress in sustainability would also enrich employees' understanding and skills.
5. **Mainstream gender in development plans:** Given the gaps revealed in gender-related knowledge, institutions should adopt tangible measures to empower women, such as providing childcare facilities at workplaces, enforcing gender-balanced hiring, and promoting female participation in decision-making. Demonstrating visible progress toward gender equity would strengthen employees' conviction that sustainability encompasses real social change.
6. **Encourage future research:** Periodic surveys (every 2–3 years) should monitor changes in employees' knowledge and the impact of training



programs. Expanding research to include the private sector, NGOs, and university students would provide a broader picture of societal awareness. Qualitative research such as interviews and focus groups could further clarify challenges in applying sustainability.

7. **Strengthen sustainability education:** In the long term, the Ministries of Education and Higher Education should integrate sustainability into curricula at all levels, ensuring that new generations enter the workforce with deeper knowledge of sustainable development, green economy, and global citizenship.
8. **Introduce incentives for sustainable initiatives:** A system of recognition—such as an annual award for “Best Sustainable Institutional Initiative”—should be established to encourage teams and institutions to adopt sustainable practices, from reducing energy consumption to launching community awareness projects.

In summary, these recommendations address the weaknesses highlighted by the study—such as limited understanding of certain aspects and gender-based differences—while building on strengths such as awareness of environmental and community issues. Implementing them will require coordination among government bodies, civil society, and academic institutions, but the benefits will contribute significantly to achieving comprehensive and sustainable development in Palestine.

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