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Saudi citizens' understanding of sustainability and its role in ensuring a better future

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ABSTRACT

This study aims to investigate how Saudi citizens perceive sustainability and their belief in its role in ensuring a better future for future generations. To achieve this, multiple dimensions were considered, including knowledge and attitude, perceptions of future generations, behavior toward sustainability, sources of sustainability information, and the role of government and policies. A quantitative research methodology was adopted, utilizing a questionnaire based on previous studies. The survey was distributed to a convenience sample of 385 Saudi citizens through online platforms and social media. The data were analyzed using the Statistical Package for the Social Sciences (SPSS). The findings indicate that Saudi citizens have a high level of awareness regarding sustainability and demonstrate a strong willingness to adopt sustainable practices to contribute to a sustainable society. This study is expected to provide insights into the level of public understanding of sustainability in Saudi Arabia and its perceived role in securing a better future for future generations. Additionally, the research contributes to existing literature by enhancing knowledge on social perceptions of sustainability and supporting efforts to promote broader social adoption and implementation of sustainable practices.

1. Introduction

Preserving human life and focusing on its dignity is the main focus of sustainability. Trying to understand how citizens in a developing country like KSA may help in better understanding their beliefs and approaches to the concept of sustainability. This can take place through investigating citizens' comprehension of sustainability, how they see it, and how they apply it in their daily lives. In addition to that, reaching a high level of sustainability in a country that is connected to citizens may help in better understanding how aspects of the society itself may play a role in supporting sustainable initiatives based on citizens' awareness, educational level, governmental policies and regulations, in addition to social and environmental responsibility.

Understanding citizens' attitudes towards sustainability may ease the process to better apply sustainable strategies in the country that have the ability to meet citizens' desires and at the same time preserve the rights of the coming generations.

The knowledge of sustainability by the citizen is a key element of good management, as it serves as an insurance against the welfare of the upcoming generations. The meaning of sustainability is clear to the citizens who know that no area has independent existence, but all of those are related to environmental, social, and economic ones (Mondejar et al., 2021; Al-Duwailah and Hashem,2019). They take this responsibility seriously and understand that their actions and lifestyle choices have a direct bearing on the health of the environment and community. Such proactive behavior ensures sustainable decisions and a lifestyle that, in turn, discourages the misuse of natural resources and the fundamental rights of the new generations (Liang et al., 2024). As an outcome of the wide knowledge of the destruction people cause by their actions with relation to the environment, society, and economy, citizens become able to make reasonable environmentally-friendly decisions as well as to take real steps towards preserving natural resources, biodiversity and national heritage, which is beneficial for humans and wildlife overall. Aside from that, the involvement of these volunteers in helping the community and making people collaborate to achieve certain sustainable goals

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improves the awareness and understanding. It is the people who are the foundation of a society that view the protection of social conscience is essential and realize that they hold as much responsibility as everyone else who seeks to build an egalitarian and sustainable society that ensures there is a balance between currently and the future generation's needs (Emina, 2021).

Based on the above argument, there appeared a lack of literature regarding sustainability from citizens' point of view and how they look at the concept of sustainability within the Saudi environment. The literature review might show that other studies could briefly discuss the Saudi people's overall attitude toward sustainability but not reveal how cultural, stereotyped model of behavior, and values affect their thinking and acting in the sphere of sustainability. As highlighted above, cultural issues may influence decision-making on issues related to do with environmental responsibilities, conservation of the physical resources, and the concerns of stakeholders.

To fill this gap could involve expanding to how cultural values, which may include beliefs about nature, interdependence of communities, or faith, influence Saudi citizens' opinion on sustainability. Moreover, the analysis of the correspondence between the identified culture and its norms and values to the principles of sustainable development might also shed light on the difficulties found in the Saudi Arabian context to change the culture and people's behavior for the better with reference to the principles of sustainability.

The cultural profiles influence the sustainability perceptions of Saudi Arabia; this is a country that is overly conservative and heir to Islamic values. Thus, sustainability is considered within the parameters of both the man's relationship with the environment and the perspective of economic sustainability based on Islamic values (Yusuf and Lytras, 2023). The idea of 'barakah,' meaning divine charity and bountiful, underpins Saudi culture and even defines sustainability, the idea of saving for the next generation. Furthermore, they also embrace the Islamic concept that 'Tawakkul,' or relying on Allah, means advocating the wise use of resources and other principles of sustainability to meet Islamic legal obligations and the needs of society in the afterlife. These cultures explain the natural relationship between sustainable and ethical practices in constructing perceptions of and behavior toward a balance between material advancement and protection of the earth (Rahman and Qattan, 2021).

Also in Saudi Arabia, what culture defines as 'Al-Mizan,' which means balance or ratio in doing everything also present in sustainability activities. With regards to affective perceptions, this cultural value is essential as it encourages the adoption of the bottom line, tying together the societal, economic, and natural environments as one. KSA's Vision 2030, the blueprint for the future development of the kingdom, presents an emerging understanding of the sustainable development goals and the need to attain sustainable growth alongside its economic diversification, socio-economic development, and environmental conservation. It is important for organizations and policymakers in Saudi Arabia to take the time to inspire greater acceptance and understanding of sustainability, these practices need to be explained within the current culture and norms of the Saudi Arabian society to ensure that changes towards a more sustainable and more resilient kingdom for the future will be made (AlArjani et al., 2021).

Thus, filling this gap in literature, the study could provide a more comprehensive approach to analyse the factors that might support or hinder sustainable practices in Saudi Arabia and reveal some new angles for Saudi Arabia culture that could be used in enhancing the sustainable initiatives for the future generation.

From that point, the current study seeks to answer the following question: How can Saudi citizens' understanding of sustainability play a role in preserving a better future for the coming generations?

The importance of this question lies in the fact that the awareness of sustainability for the population plays an incredible part in genuine change to a sustainable future and the welfare of the next generation. The effectiveness of education promotes a shift towards a sustainable way of living. It provides a foundation for informed citizens who have a say in the decision-making process and understand the importance of being actively engaged in the community, inspiring further social responsibility that reflects interconnectedness between current and future generations as the pillar of social sustainability.

The current study is a trial that aims to determine the degree of comprehension and understanding of sustainability in accordance with specific variables, including (Knowledge and Attitude, Perceptions of Future Generations, Behavior towards Sustainability, Sources of Sustainability Information, Role of Government and Policies) in KSA.

Reaching such an aim will be done through accomplishing the following objectives:

- Examine the level of Saudi citizens' understanding of sustainability according to their perspective
- Examine the role of (Knowledge and Attitude, Perceptions of Future Generations, Behavior towards Sustainability, Sources of Sustainability Information, Role of Government and Policies) in forming Saudi citizen attitudes towards sustainability
- Explore areas of sustainability that are adopted by Saudi citizens

In order to better explain the aim of the study, we have built a model that sheds light on the relationship between variables and from which hypotheses were extracted as shown in Fig. 1.

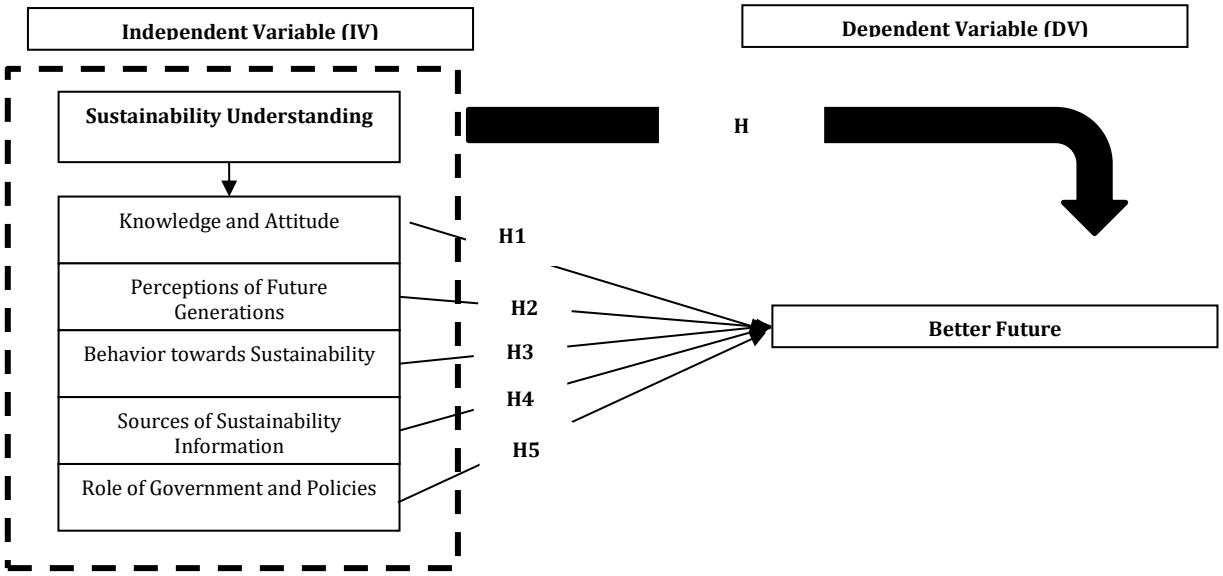

Fig. 1: Study model

H: Saudi citizens enjoy a high level of sustainability understanding that can lead to a better future for the coming generations.
H1: Saudi citizens' knowledge and attitudes of sustainability lead to a better future for the coming generations.
H2: Saudi citizens' perceptions of future generations lead to a better future for the coming generations.
H3: Saudi citizens' behavior towards sustainability leads to a better future for the coming generations.
H4: Saudi citizens' source of sustainability information leads to a better future for the coming generations.
H5: Saudi citizens' role in government and policies leads to a better future for the coming generations.

2. Literature review

2.1. Sustainability through Saudi eyes

Sustainability as an issue within the context of the Kingdom of Saudi Arabia is an emerging consideration as the country continues to work to advance both its economic success and its environmentally and socially beneficial initiatives (Alqahtany and Aravindakshan, 2022). According to Yusuf and Lytras (2023), Saudi Arabia, being an oil and gas-operated country and with plenty of natural reserves, should diversify its economy, and yet, it should leave the resources for the next generations. On the governmental level, Saudi Arabia has offered several staking points to sustainable development in the recent past (Vinodkumar and Alarifi, 2022). The Vision 2030 plan adopted in 2016 also speaks of sustainability by seeking to diversify the kingdom's economy and cut its reliance on oil, encourage the use of renewable energy, and strengthen environmental governance. This strategic vision is consistent with global sustainable development goals, including the United Nations Sustainable Development Goals (UN-SDGs), which merges with Saudi Arabia's vision to ensure it offers the global commons a positive value addition (Haque and Khan, 2022). In its effort to contribute to the cause of environmental sustainability, Saudi Arabia has, over the years, been investing in renewable energy sources, for instance, solar and wind power, to minimize emissions of carbon (Bataeineh and Aga, 2023). Efforts to save water have also been in vogue due to the scarcity of water in the country due to its geographical location. In addition, increasing sustainability in the agricultural practices and the programs to support conservation of the environment in order to reach sustainable environmental stability have also been increasing (Jamoussi et al., 2022).

Ebaid (2022) stated that social sustainability in Saudi Arabia involves efforts to improve living conditions, reduce social inequality, and strengthen community capacity. Initiatives to improve healthcare, education, and other essential services aim to build a more sustainable and resilient nation. The Kingdom has adopted sustainability as a key objective, aiming to benefit both current and future generations, positioning itself as a global leader in sustainability efforts (Samargandi et al., 2024).

2.2. Sustainability in Saudi Vision 2030

In sustainability, Saudi Vision 2030 is central since the kingdom aims at a balanced, stable, and environmentally friendly economy. Based on this, the grand vision of this paper is predicated on an understanding of the idea that sustainable development is instrumental towards future growth and welfare (Wasiq et al., 2023). Aljuaid et al. (2024) argued that Vision 2030 is basically the long-term development plan of Saudi Arabia, where it plans to reduce its reliance on oil and aspires to develop new sectors such as technical ones, renewable energy sectors, etc. According to Alfalih and Hadj (2022), there are strategic objectives of the Saudi Vision 2030 associated with environmental protection, the efficient use of resources, and the move to green technologies. This vision therefore emphasizes good balancing between the growth of the economy and

the conservation of the environment; the latter being very essential in supporting the quality of life of both the present and forthcoming generations. Hence, through financing renewable energy generation, sustainable agriculture, and water-saving schemes, Saudi Arabia wants to decrease adverse environmental effects, improve resource efficiency, and promote international effort to tackle climate change, which meets the principles of sustainability at the domestic and global level (Chaaben et al., 2024).

2.3. Engaging the private sector

Yusuf and Lytras (2023), Elimam (2022), Alfalih (2022), and Chaaben et al. (2024) argued that through Vision 2030, Saudi Arabia aims at partnering with the private sector in sustainability through various approaches. Here are some key ways in which the kingdom aims to collaborate with private enterprises to promote sustainability:

1. Public-private partnerships (PPPs): Saudi Arabia aims to facilitate government and private sector partnerships through PPPs in sustainability projects. Public-private partnerships allow the government to access specialist knowledge, skills, capital, and creativity necessary for sustainable development plans like the application of sustainable energy, efficient water usage, and environmentally friendly structures.
2. Incentives and regulations: The Saudi government has the intention to put policies and measures to stimulate the private sector towards sustainability. This is through the offer of grants, discounts or rebates on taxes, and subsidies, which are accorded to companies that endeavor to embrace sustainable management and green technologies. On the same note, there can be a viewpoint that laws are set to govern environmental conservation and standards and sustainable practices.
3. Green financing: Saudi Arabia seeks to encourage financial mechanisms that will facilitate financing of sustainable projects or programs in the private sector. Issuing green bonds, loans, and investment platforms for the kingdom, sustainable opportunities can be extended with the hope that more businesses and investors become inclined to adopt sustainable deals on their operations.
4. Capacity building and knowledge sharing: The government also intends to fund measures to strengthen institutions and exchange information to improve sustainability measures in the private sector. It may entail extending higher education courses, seminars, and consultancy services to help organizations integrate sustainability concerns into their planning, system implementation, and procurement.

2.4. Related studies

Severo et al. (2021) examined the impact of the COVID-19 pandemic on environmental awareness, sustainable consumption, and socially responsible behavior among elderly individuals, millennials, and residents of Brazil and Portugal. The study used a quantitative, descriptive research design based on a survey of 3,236 participants, analyzed using Structural Equation Modeling. The results strongly indicate that the pandemic significantly influenced changes in people's behavior toward environmental sustainability and social responsibility. In my view, the pandemic caused a major shift—first in sustainable consumption, followed by environmental awareness, and finally in social responsibility. The study also highlighted notable perspectives from Portugal and the Baby Boomer generation. Additionally, it contributed to a better understanding of key concepts such as the role of sustainability metrics and the importance of conscious consumption during the pandemic in shaping global socio-environmental change.

Han and Kim (2021) argued that the level of citizens' adoption and understanding of sustainability plays a role in increasing the effect of sustainability in smart living and sustainable cities. Through analyzing 73 previous studies, the authors concluded that there are many aspects that play a role in increasing citizens' adoption of sustainability, including their awareness, understanding of what sustainability means, and the type of regimen and regulation that the country is following when it comes to sustainability.

Sauermann et al. (2020) talked about how the marriage of these two views might serve as the foundation of integrated citizen researcher platforms that are paramount to complex sustainability transitions in fields such as renewable energy, public health, and environmental conservation, among others. We first identify three pathways through which such impacts can occur: (1) Setting the agenda and identifying the problems; (2) Collecting resources; and (3) Guiding co-evolution of socio-technical aspects. To realize this potential, CS needs to address important challenges that emerge especially in the context of sustainability transitions: Widen the governance, cultural change, and the depth of participation; consider the social and technical dimensions of sustainability problems alongside the CS, and finally, ease the conflicts between CSs and traditional higher education institutes science mission. This article, which is based on a literature review comprising academic literature and policy reports, as well as the body of case examples, adds to those studies that look at science, innovation, and sustainability transitions.

3. Methods and materials

3.1. Methodological approach

Quantitative methodology was adopted in the current study. Quantitative methodology is best suited due to its ability to merge a larger sample size for the sake of primary data, which will help in testing hypotheses and generalizing results.

3.2. Population and sampling

The study population included all adult citizens in Saudi Arabia. A convenience sample of 385 participants was selected to represent this population. A structured questionnaire was developed to measure sub-variables such as knowledge and attitude, perceptions of future generations, behavior toward sustainability, sources of sustainability information, and the role of government and policies. The questionnaire items were adapted from previous studies and validated by expert reviewers to ensure content validity.

Participants gave their consent to take part in the study by selecting a checkbox at the beginning of the survey. If they agreed, the questionnaire was displayed for completion. To minimize bias in this self-administered questionnaire—focused on Saudi citizens' perceptions of sustainability and its impact on future generations—several steps were taken. First, questionnaire items were carefully reviewed to avoid leading questions. Definitions of key sustainability concepts were clearly provided, and participants were encouraged to express their current understanding to support accurate interpretation. A diverse set of questions addressing multiple dimensions of sustainable development—such as knowledge, attitudes, behavior, and information sources—was used to capture a more comprehensive view of participants' perceptions.

To further reduce response bias, techniques such as randomizing item order and response options were considered. A pilot test of the questionnaire with a smaller group was also conducted to identify and correct any ambiguous items or response patterns before full-scale data collection. These steps aimed to enhance the reliability and validity of the findings, providing a clearer picture of how Saudi citizens perceive sustainability and its relevance to future generations.

3.3. Statistical processing

The collected primary data was first organized to ensure it was suitable for analysis using SPSS software. Multiple and linear regression analyses were then conducted to test the study hypotheses and determine whether they should be accepted or rejected. Additionally, descriptive statistics—including frequency, percentage, mean, and standard deviation—were used to analyze demographic variables such as gender, age, educational qualification, and professional background.

This study was grounded in the Environmental Kuznets Curve (EKC) framework, which suggests that economic growth can initially harm the environment but may eventually lead to improvements in environmental quality as income levels rise. This theory is particularly relevant in assessing the attitudes of Saudi citizens, who may perceive a trade-off between economic development and environmental protection. The EKC framework helps explore how economic progress influences public perceptions of sustainability in Saudi Arabia.

To ensure the reliability and internal consistency of the questionnaire, a reliability test was performed using Cronbach's alpha. As shown in Table 1, all measured variables had alpha values exceeding the commonly accepted threshold of 0.70, indicating that the instrument was statistically reliable.

Table 1: Reliability test

Variable	α
Knowledge and attitude	0.784
Perceptions of future generations	0.864
Behavior towards sustainability	0.852
Sources of sustainability information	0.825
Role of government and policies	0.801
Better future for the coming generations	0.867

4. Results and discussion

4.1. Demographics

Frequencies and percentages were calculated to describe the characteristics of the study participants. As shown in Table 2, the majority of respondents were female, representing 76.5% of the total sample. In terms of age, 60.4% of participants were between 18 and 28 years old. Most respondents held a bachelor's degree (69.4%). Regarding monthly income, the largest proportion (38.4%) reported earning more than $2,000, followed by 36.9% who reported an income between $1,000 and $2,000.

4.2. Questionnaire analysis

Mean (μ) and standard deviation (σ) were used in order to analyze the questionnaire of the study. Table 3 presents the survey statement data, including the average and standard deviation for each item. All participants demonstrated a pleasant disposition, as evidenced by their average score of 3.00 or above on every survey topic. The statistics clearly indicate that the emotions were positive. The individuals surveyed appeared to hold an optimistic perspective regarding the variables that were the focus of the study. From a statistical perspective, it is noteworthy that all of the variables examined in this study recorded scores exceeding the mean value of 3.00.

4.3. Multicolleniarity test

The independent variables underwent VIF (Variance Inflation Factor) and Tolerance analysis to evaluate multicollinearity. The following potential developments can be linked to these calculations. The data in Table 4 shows no signs of multicollinearity, demonstrated by all Variance Inflation Factor (VIF) values being below 10 and all Tolerance values exceeding 0.10.

Table 2: Demographic results

Variable	f	%
Gender		
Female	365	76.5
Male	112	23.5
Age		
18-28	288	60.4
29-39	38	8.0
40-50	67	14.0
51-60	52	10.9
More than 60 years	32	6.7
Education		
BA	331	69.4
Diploma or Less	18	3.8
MA	88	18.4
PhD	40	8.4
Income		
$1000-$2000	176	36.9
More than $2000	183	38.4
$1000 or less	118	24.7
Total	477	100.0

Table 3: Questionnaire analysis

Statement	μ	σ
I have a general understanding of what sustainability means	4.199	.850
I am able to identify certain actions as sustainable	4.143	.776
I do not fully understand the concept of sustainability, but I associate it with environmental issues	4.145	.864
I find it challenging to implement sustainable practices in my daily life	3.990	.829
I consistently make sustainable choices within my household and for my family	3.727	.975
I want my family members to have a better future and improved quality of life	4.041	.631
I believe that taking care of our children contributes to better environmental preservation	4.008	.893
I am concerned that our current actions may negatively impact the lives of my grandchildren	3.971	.857
I believe future generations might cause more harm to the environment than the current generation	4.010	.851
I worry that future generations may lack empathy and concern for the environment	4.034	.793
I actively recycle and make additional efforts to protect the environment	4.113	.775
I regularly purchase organic products to help preserve the environment	4.030	.671
Many retailers do not offer sustainable options such as paper bags	4.019	.875
A lack of awareness about sustainability among those around me makes it difficult to act sustainably	4.096	.796
I feel encouraged and motivated when I make sustainable decisions	4.004	.820
I frequently seek information about Saudi Arabia's Vision 2030	4.019	.883
When I need more information, I consult the Saudi national platform (https://www.my.gov.sa/)	4.088	.789
I am aware that Saudi Arabia aims to achieve net-zero carbon emissions by 2060, which I find inspiring	4.045	.660
The Saudi Data and AI Authority for Sustainable Development is a helpful source of sustainability information	4.002	.906
Local Saudi newspapers regularly publish content related to sustainability	3.979	.946
I believe the Saudi government is taking significant measures to promote sustainability	4.055	.773
I trust that the government is leading the country in the right direction regarding sustainability	4.023	.849
Policies and regulations in Saudi Arabia consistently support sustainable practices	4.052	.755
I am proud to be a citizen of a country that prioritizes the well-being of future generations	4.022	.651
I believe the Saudi government has a clear roadmap for achieving sustainability	4.042	.795
I believe our current actions will significantly affect future generations	4.034	.829
Environmental awareness should be more strongly emphasized in schools and educational institutions	4.153	.698
Ignoring sustainability issues paints a grim picture for the future of our grandchildren	4.092	.884
It is essential to take additional steps to improve public understanding of sustainability	3.845	.910
I believe the Kingdom has a strong understanding of sustainability and effectively communicates it to its citizens	4.033	.617
I greatly value the Saudi government's efforts to ensure a better future for coming generations	4.034	.752
I am extremely proud of my government's proactive sustainability policies	4.040	.742
I have a general understanding of what sustainability means	3.979	.807
I am able to identify certain actions as sustainable	3.985	.831
I do not fully understand the concept of sustainability, but I associate it with environmental issues	3.929	.837
I find it challenging to implement sustainable practices in my daily life	3.994	.720
I consistently make sustainable choices within my household and for my family	3.857	.924
I want my family members to have a better future and improved quality of life	3.974	.601

Table 4: Multicolleniarity

variable	Tolerance	VIF
Knowledge and attitude	.377	2.649
Perceptions of future generations	.343	2.912
Behavior towards sustainability	.339	2.950
Sources of sustainability information	.302	3.311
Role of government and policies	.385	2.597

4.4. Hypothesis testing

Multiple regression was used to test hypotheses. Results indicated that the F value held statistical significance at the 0.05 level. The data indicated that Saudi citizens enjoyed a high level of sustainability understanding that can lead to a better future for the coming generations. A correlation coefficient of 0.844 signified a strong relationship. The independent variables accounted for 71.2% of the observed variance in the dependent variable.
In addition, the coefficient Table 5 shows that:

- Saudi citizens' knowledge and attitudes of sustainability lead to a better future for the coming

generations, since t-value is significant with beta=0.097.
- Saudi citizens' perceptions of future generations lead to a better future for the coming generations, since t-value is significant with beta=0.099.
- Saudi citizens' behavior towards sustainability leads to a better future for the coming generations, since t-value is significant with beta=0.088.
- Saudi citizens' source of sustainability information leads to a better future for the coming generations, since t-value is significant with beta=0.316.
- The role of government and policies, as perceived by Saudi citizens, significantly contributes to ensuring a better future for upcoming generations, since t-value is significant with beta=0.352.

Table 5: Hypothesis testing

Coefficients								
Model		Unstandardized coefficients		Standardized coefficients	t	Sig.		
		B	Standard error	Beta			R	R-squared
1	(Constant)	.368	.109		3.371	.001	.844	.712
	Knowledge and attitude	.092	.038	.097	2.404	.017		
	Perceptions of future generations	.088	.038	.099	2.344	.019		
	Behavior towards sustainability	.080	.039	.088	2.082	.038		
	Sources of sustainability information	.291	.041	.316	7.015	.000		
	Role of government and policies	.342	.039	.352	8.835	.000		

H: Saudi citizens enjoy a high level of sustainability understanding that can lead to a better future for the coming generations

5. Discussion

This study aimed to explore how Saudi citizens perceive the concept of sustainability and the extent to which they believe it can contribute to a better future for coming generations. To achieve this, we examined multiple dimensions of sustainability, including knowledge and attitude, perceptions of future generations, behavior toward sustainability, sources of sustainability information, and the role of government and policies.

A quantitative research design was employed using a self-administered online questionnaire, which was distributed via social media and completed by 385 Saudi citizens. The collected primary data were analyzed using the Statistical Package for the Social Sciences (SPSS), and the study hypotheses were tested through multiple regression analysis.

The results supported the main hypothesis, which stated that "Saudi citizens possess a high level of sustainability awareness that can contribute to a better future for future generations." The correlation coefficient was 0.844, indicating a strong positive relationship. Among the various dimensions, government policies and regulations emerged as the most influential factor, with a statistically significant t-value and a standardized beta coefficient of 0.352.

The study proved that policies and regulations from the Saudi Arabian government, for example, have been instrumental in increasing the citizens' knowledge on sustainability through policy provision, awareness creation, and provision of incentives for sustainability. Alqahtany and Aravindakshan (2022) and Bataeineh and Aga (2023) agreed on the same results, arguing that according to Vision 2030 and a number of other developmental frameworks, the government has put in place measures on policy on environmental conservation, resource use, and development as espoused by the developmental principles.

In addition to that, the Saudi government has intervened in public relations, educational and community platforms to sensitize the public on the issue and the idea of sustainability and its preservation for future generations. In various media campaigns, workshops, community activities, and other forums, the government has gained a lot of ground in sensitizing the people and making them more responsible towards sustainable practices. All such efforts have also helped in not only increasing awareness of the various environmental problems but have also encouraged the populace to practice changes which keep Saudi Arabia environmentally fit.

In the second rank of influence, it was seen that sustainability information was influential, with t-value being significant with beta=0.316. The Saudi Arabian setting has shown that sustainability information has played an important role in informing the citizens about sustainable development, sustainability, and their implications on the environment, society, and the economy. People have had an opportunity to access information through different avenues, including schools, awareness creation, the internet, and community meetings, and thus have enhanced knowledge in sustainable ideas, practices, and gains on sustainability. Chaaben et al. (2024) and Alfalih (2022) came up with the same conclusion, adding that in this context, Saudi Arabia has successfully educated its citizens on how to include sustainability and change the world by giving them clear and relevant information to act upon.

In addition, through access to sustainability information, there has been an improvement in the general perception of Saudi citizens towards the environment and social responsibility. Sustaining environmental conservation has been made possible

through enhanced awareness of environmental issues, including Water shortages, air pollution, and climate change. Due to these factors, the Saudi government has created awareness for citizens to adopt green technologies, renewable energy resources, measures to control waste, and other sustainable practices. Haque and Khan (2022) and Jamoussi et al. (2022) agreed on the same results and noted that information sharing plays a positive role in modifying the demeanor of the KSA citizens and helps in the enhancement of the sustainability culture in the Kingdom of Saudi Arabia agreed this on.

Overall, Saudi citizens' perceptions of sustainable development are multifaceted, shaped by various dimensions including knowledge and attitude, perceptions of future generations, behavior toward sustainability, sources of sustainability information, and the role of government and policy. These perceptions are deeply influenced by the cultural and religious values embedded in Saudi society, particularly those derived from Islamic teachings. Concepts such as environmental stewardship, social and corporate responsibility, and accountability toward future generations are strongly upheld, reflecting a cultural commitment to preserving resources for long-term well-being.

Saudi citizens' attitudes toward sustainability also reflect their broader views on societal structures, particularly the role of government and its strategic policy frameworks. Sustainability is a central theme in the national agenda, especially through Vision 2030, which emphasizes environmental protection, social welfare, and economic diversification. These governmental initiatives not only guide individual behavior but also shape a collective awareness and sense of responsibility toward the environment and future generations.

Moreover, the availability of sustainability-related information through educational programs, media campaigns, and community engagement activities plays a crucial role in shaping public awareness and promoting sustainable behavior. These societal influences help cultivate a supportive environment for advancing a culture of sustainability and foster a collective commitment to building a future that aligns with the values and needs of upcoming generations in Saudi Arabia.

6. Conclusion

The findings of this study point towards a positive and distinct improvement in Saudi citizens' sustainability knowledge, which is said to be more sustainable for coming generations. This is an indication that people are now ready for sustainable solutions that ensure that society becomes more sustainable and socially responsible as well. Having gained an understanding of sustainability principles, Saudi citizens can become the initiators of change for their children and descendants to live in a world that will show success in economic development alongside the preservation of the environment and improvement of people's quality of life. The derived results support the idea of the Saudi Arabian sustainability improvement and progress. People are slowly and steadily getting informed on the sustainable principles, and are practicing sustainability; hence, there is a very tangible opportunity to enhance sustainable advancement in Environmental Conservation, resource management, and Sustainable Development. With this knowledge and dedication toward sustainability at its grasp, Saudi Arabia today presents itself for a sustainable future that is sustainable, strong, and will set forth the foundation for future generations; put it as a model in the international community of sustainable development.

From the results and conclusions, the current study recommended:

- Develop and run campaigns aimed at sensitizing citizens about the sustainability tenets and practices, focusing more on the need to conserve natural resources for the next generations.
- Integrate efforts of the state, private, and civil societies in doing sustainability projects in order to nurture people's attitude towards sustainability in action.
- Devise a sustainability strategy either as an inter-sectoral strategy or as a stand-alone sector strategy through the promotion of policy and legislative reforms.

From a theoretical perspective, this research has the potential to enhance the precepts of environmental psychology by documenting the thoughts of Saudi nationals about sustainability and its values to the generations to come, particularly on the relevant tenets of culture and society and how these determine the views on sustainability. On the practical level, this research helps Saudi Arabia's policymakers and educators to understand the current existing citizens' views and knowledge of sustainability and the gaps therein, and so they can devise more programs that are effective programs and policies in encouraging the appropriate behaviors and practices.

Due to the possible sampling bias present in the study, results may be limited in terms of generalizability and applicability, for example, due to skewness with respect to certain age groups or geographical regions in the study of Saudi Arabia. Most importantly, self-reporting is a vital aspect of any research, and studies using this form of data are always subject to abuse in sociocultural terms, for instance, the social desirability bias, where the participants' understanding of sustainability-related concepts is inflated.

It is recommended that a longitudinal study be undertaken to evaluate changes over time in Saudi citizens' attitudes and behaviors as regards sustainability in order to determine the impact of the educational and policy strategies. In addition to that, there could be a space to conduct a study on the

sustainability of Saudi citizens versus other groups in different countries for the purpose of finding the diversity in attitudes and actions towards such concepts.

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Compliance with ethical standards

Ethical considerations

Informed consent was obtained from all participants. The study was conducted in accordance with institutional ethical guidelines.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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