ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

JOURNAL OF APPLIED LINGUISTICS AND TESOL

Vol.8. No.2.2025

ISLAMIC PROPHETIC TEACHINGS: PAVING THE WAY FOR OLIVE SUSTAINABILITY IN PUNJAB, PAKISTAN

1.Hafiz Muhammad Farooq Abdullah
Department of Interfaith Sciences
Allama Iqbal Open University
Islamabad Pakistan
farooq.abdullah@aiou.edu.pk
http://orcid.org/0000-0001-6946-0337
2.Fouzia Anjum
Department of Agricultural Sciences
Allama Iqbal Open University
Islamabad Pakistan
https://orcid.org/0000-0003-2336-2154
Corresponding author: fauziaanjum184@gmail.com

Abstract

Islamic principles aim to build a balanced, just economic system that supports sustainable development and aligns with Islamic values, honoring agricultural heritage and fostering regional sustainability. An adoption model is developed by integrating core elements from the Theory of Planned Behavior, and Technology Acceptance Model, and analyzed through structural equation modeling based on data collected from a survey of 197 agricultural experts. The results unveil significant mediating effects involving subjective norms (religious beliefs), attitudes (perceived usefulness), and perceived control (self-motivation), with higher coefficients (β = 0.69, 0.41, and 0.24) towards perception of olive sustainability (POS). Whereas, Islamic principles such as stewardship (Khalifah), community & cooperation (Ukhuwwah & Ta'awun), and Ilm (knowledge) account for the maximum variation (R^2 = 0.51) in relation to POS, which has an R^2 value of 0.78. Conversely, challenges linked to conventional practices were effective in impeding respondents' perception, showing a variation of (R^2 = 0.39). The model further successfully accounts the moderating effects of variables related to Islamic principles, indicating a robust association between perceived control behavior (p=0.04) and POS (0.001). Hence, incorporating these principles into agricultural policies can foster holistic and resilient olive farming systems for current and future generations.

Keywords: *Prophetic principles, sustainable farming, SEM approach.*

Introduction

Pakistan, holds significant potential for olive cultivation due to its favorable climate and soil conditions. Ali, Mueed, Jahangir et al. (2024b) reported that Pakistan possesses 80 million wild olive trees and 5 million planted ones, aiming to grow 50 million olive trees across 10 million acres by 2026. In addition to their food and nutritional benefits, olives hold religious significance, and their waste is also valuable. Olive cultivation in Pakistan will not only satisfy local edible oil needs but also offer various additional benefits. In 2022, Pakistan joined the IOC as its 19th member and exported virgin and extra virgin olive oil worth $1.9 million (Jan, Sumrah, Akhtar et al. 2021). Although numerous successful projects, such as the "50 Million Olive Tree Tsunami" and the "Promotion of Olive Cultivation for Economic Development and Poverty Alleviation," have significantly expanded olive cultivation, increased production, created jobs, and reduced poverty, there remains a critical need to address challenges. These include the socio-economic upliftment of farmers, improving farmer awareness and training, environmental and enhancing infrastructure for sustainability (Akram, Akram, Hongshu et al. 2019, Hamadani, Rashid, Parrah et al. 2021, Raza, Afzal, Luqman et al. 2023). Several studies emphasize that socio-economic factors, such as the economic challenges faced by small and medium-scale farmers, including limited financial resources, hinder their ability to invest in sustainable farming techniques or adopt modern technologies (Ali, Mueed, Jahangir et al.

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

2024a, Sumrah, Jan, Hussain et al. 2021). Additionally, inconsistent policies and the absence of targeted subsidies can constrain the growth of olive farming (Qureshi, Qadri, Jaskani et al. 2020). Furthermore, low literacy rates in rural farming communities impede the effective dissemination and application of new agricultural knowledge. Hence, awareness, training, infrastructure, and market facilities are needed in this connection. Olives have a notable significance in Islamic texts. The Quran refers to olives as a blessed fruit (Quran 24:35), and the Prophet Muhammad (PBUH) advocated for the use of olive oil. In Surah An-Nur, Allah describes the olive tree as "blessed":

"Allah is the light of the heavens and the earth. The example of His light is like a niche within which is a lamp; the lamp is within glass, the glass as if it were a pearly [white] star lit from [the oil of] a blessed olive tree, neither of the east nor of the west, whose oil would almost glow even if untouched by fire. Light upon light. Allah guides to His light whom He wills. And Allah presents examples for the people, and Allah is knowing of all things." *(Quran 24:35)*

This cultural and religious importance can encourage community support for sustainable olive farming.

Prophetic teachings in Agriculture

The Islamic economic system is guided by principles derived from the Quran and the Hadith (Prophet Muhammad's sayings). Prophet Muhammad (PBUH) emphasized sustainability, environmental stewardship Emari, Vazifehdoust and Nikoomaram (2017), moderation and efficient resource management in his agricultural practices and teachings (Bsoul, Omer, Kucukalic et al. 2022, Härmälä 2014, Kamali 2016). However, amid challenges like water scarcity and environmental degradation, sustainable olive farming is crucial for long-term productivity. While traditional practices have supported local communities, they often lack modern techniques. Islamic Prophetic teachings offer valuable principles such as Khalifah (environmental stewardship) (Bsoul et al. 2022, Emari et al. 2017, Lopez-Brenes and Marin-Guzman 2019), Iqtisad (moderation) (BOUYELLI 2023, Islam and Khatun 2015, Zafran 2022), Ukhuwwah *and* Ta'awun (community cooperation) (Kamali 2016), and Ilm (knowledge and innovation) (Abdelzaher, Kotb and Helfaya 2019b, Akeel 2022, Kowanda-Yassin 2021), promoting resource responsibility, efficient farming, and community-driven solutions.

Islamic teachings can effectively address contemporary agricultural practices by aligning principles like Khalifah (stewardship) and Ukhuwwah (community cooperation) with modern sustainable farming methods. Comparative studies from other regions can provide valuable insights into how Islamic principles can enhance and integrate with current agricultural practices, creating a more comprehensive and sustainable approach to farming. For example, the challenge of water scarcity can be mitigated by adopting modern irrigation techniques, like drip irrigation, which have proven successful in developed areas (Al Hiary, Dhehibi and Kassam 2019, Wang, Zhang, Farooqi et al. 2019).

Statement of the problem

The agricultural sector in Punjab, Pakistan, encounters significant challenges in promoting sustainable farming practices, particularly in olive cultivation. Despite the region holds great potential for olive farming, progress is impeded by traditional methods and a lack of awareness regarding sustainable practices. This situation is further intensified by environmental degradation, water scarcity, and limited access to modern agricultural technologies. Hence, by aligning sustainable olive farming with core Islamic teachings, communities can adopt a holistic approach that balances religious values and environmental needs, while the selected respondents, with diverse agricultural backgrounds and direct involvement in research, are well-equipped to understand and address the pressing challenges faced by farming communities.

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

The present study has following key contributions. **First**, recent studies reveal a lack of literature integrating Islamic Prophetic teachings with sustainable farming. The study addresses this gap by employing a multidisciplinary approach that combines Islamic and agricultural studies, focusing on olive sustainability. **Second,** the study explores the perceptions of agricultural experts to gain insights into the relevance and application of Islamic teachings for sustainable olive farming. **Third**, this study fills this gap by employing a combination of Theory of Planned behavior (TPB) and Technology Acceptance Model (TAM) to assess experts' intention towards adopting olive sustainability using Partial Least Squares Structural Equation Modeling (PLS-SEM) for mediation and moderation analysis. Hence, this study aims to investigate the socio-psychological and religious factors influencing experts' perceptions of olive sustainability in Punjab, Pakistan, with an emphasis on the challenges posed by conventional farming practices and the integration of Islamic principles, utilizing TPB and the TAM through SEM.

Conceptual Framework of the proposed model

Understanding the sustainability of olive farming through the lens of expert perceptions requires a robust model that can capture the influence of challenges of conventional farming and the integration of Islamic principles. This study designs a PLS-SEM framework to assess how these factors influence experts' views on sustainable olive farming. The proposed model based on theory of planned behavior (TPB) and technology acceptance model (TAM) incorporates three latent constructs. (a) Challenges of conventional practices (CCP) captures limitations and issues faced in traditional olive farming, such as water scarcity, pest management, and outdated techniques. (b) Islamic principles in agriculture (IPA) encompasses ethical and sustainable practices encouraged by Islamic teachings, such as environmental stewardship (khalifah) and prohibition of waste (israf). (c) Perception of olive sustainability (POS) reflects experts' evaluations and beliefs about the potential for achieving long-term, eco-friendly olive production (Figure 1).

Model hypotheses

H_1: Attitude towards behavior (ATB), Perceived behavioral control, and Subjective norms positively influence perception of olive sustainability (POS).

H_2: All observed variables (PU, PeOU, RB, SI, EX, SM, and ER) have significant and positive effects on POS.

H_3: Attitude mediates positive effect of Perceived Usefulness (PU) and perceived ease of use (PEoU) towards POS.

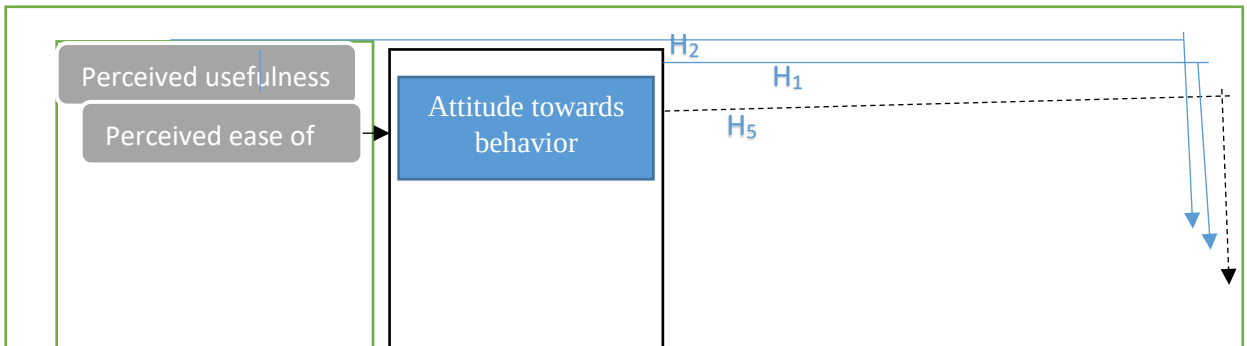
H_4: Subjective norms mediate the positive response of religious beliefs, social influence, and extension service towards POS.

H_5: Perceived behavior control mediate the positive influence of self-motivation and external resources on POS

H_6: Attitude towards behavior (ATB), Perceived behavioral control, and Subjective norms mediates the positive influence of Islamic principles in agriculture on POS.

H_7: Attitude towards behavior (ATB), Perceived behavioral control, and Subjective norms mediates negatively influence the challenges of conventional Practices (CCP) regarding POS.

H_8: Islamic Principles in Agriculture (IPA) moderate the relationship between Perceived Behavioral Control and Perception of Olive Sustainability (POS).



ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

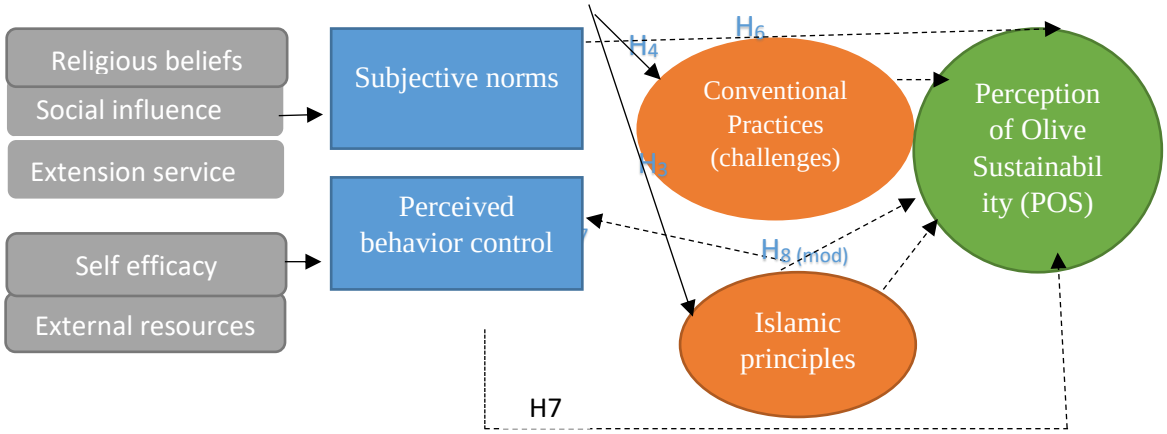


Figure 1 Conceptual framework of a proposed study model based on core Islamic Prophetic principles regrading olive sustainability

Materials and Methods

The study area

The study was conducted in Punjab, Pakistan, a region with diverse geographical characteristics, ranging from latitudes approximately 27.6°N to 32.5°N and altitudes between 150 and 500 meters above sea level (Akhtar, Zhao and Gao 2021). The province is mainly a fertile plain, sustained by the extensive river system of the Indus and its tributaries, such as the Jhelum, Chenab, Ravi, and Sutlej rivers. In the north, the terrain becomes the Pothohar Plateau, with rolling hills and elevations up to 500 meters (Akhtar, Zhao, Gao et al. 2022). The climate ranges from arid in the south to temperate in the north, fostering a rich agricultural economy. This geographical diversity cements Punjab's role as Pakistan's agricultural heartland.

Sampling population and sample size

The study used a pre-structured questionnaire administered through online surveys as the primary method to collect data from agricultural experts at universities and institutes in Punjab. Experts from agricultural universities with academic backgrounds in agricultural extension contribute valuable research-based insights into agricultural practices, sustainability, and the application of Islamic principles. Their expertise in research, and education complements practical farming knowledge, aiding in the development of a comprehensive framework for sustainable farming that extends to farming communities. Meanwhile, agricultural personnel, such as extensionists from agricultural institutes, play a crucial role in decision-making and the practical implementation of field-oriented practices. Initially, academic faculty lists of 347 faculty members were collected from the online websites of six major Agricultural universities in Punjab: University of Agriculture Faisalabad, PMAS-Arid Agriculture University Rawalpindi, University of Sargodha, Bahauddin Zakariya University Multan, Muhammad Nawaz Shareef University of Agriculture Multan, and Ghazi University D.G. Khan. Subsequently, a list (43) of agricultural officers was obtained from the Directorate General of Agricultural Information, Punjab (Figure 2). The combined total population of 390 individuals from both universities and institutes constituted the sampling frame for the study. A sample size of 197 was determined and randomly selected using simple random sampling based on the following Yamane Formula (Yamane, 1973) (Bolarinwa 2020) .

$$\text{Sample size (n)} = \frac{N}{1+ Ne^2}$$

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

Where, n = sample size, N = population size = 390, *e* = level of precision always set the value of 0.05.

Therefore, the questionnaire was administered to the selected respondents by sharing an online questionnaire link through Google Forms, and data was subsequently collected. During the pilot testing stage, a panel of experts from the Department of Agricultural Sciences and Islamic and Interfaith Studies at AIOU assessed the face and content validity of the questionnaire. The reliability of the research instrument was further examined to analyze internal consistency McCormac, Calic, Parsons et al. (2016), resulting in a Cronbach's Alpha of 0.84.

Data Analysis

Descriptive statistics were calculated from the collected data, followed by the design of a proposed conceptual model to test the perceptions of agricultural experts regarding sustainable olive farming in alignment with core Islamic principles using PLS-SEM. The model evaluated the knowledge level of the experts on olive sustainability as an external variable, while challenges associated with conventional practices and Islamic principles were considered internal variables.

Structural Equation Modelling (SEM)

SEM is a robust statistical method that enables the examination of intricate relationships among variables (Hair, Risher, Sarstedt et al. 2019). It is particularly useful for integrating and testing theoretical frameworks, such as those derived from principle theories.

Structure of SEM

The variables studied were latent (unobserved) and evaluated through observable statements, with approximately 37 statements used in the questionnaire. These statements were categorized into 12 factors.

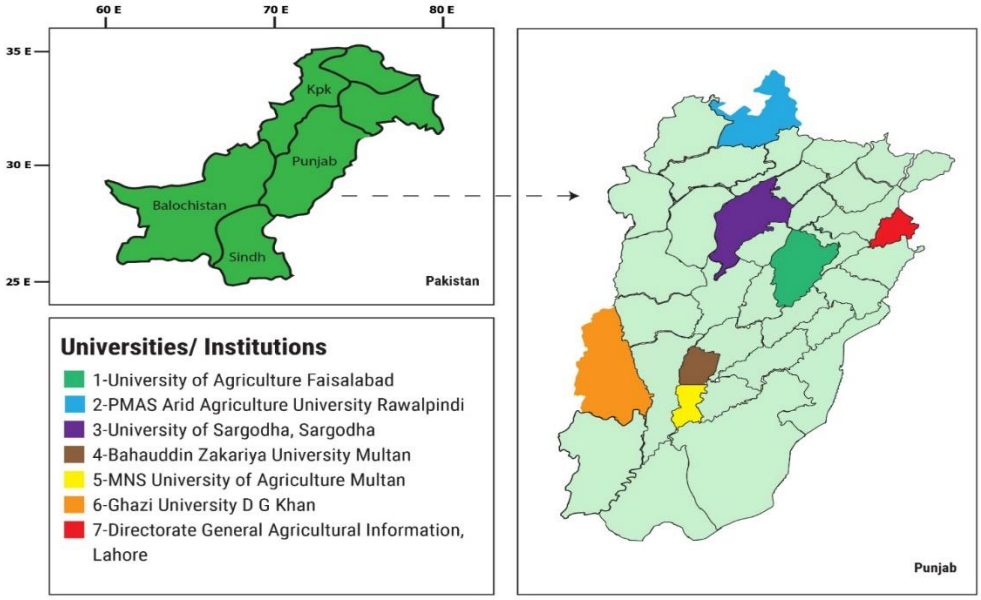


Figure 2 Map of the study area comprising selected agricultural universities and Directorate General of Agricultural Information System

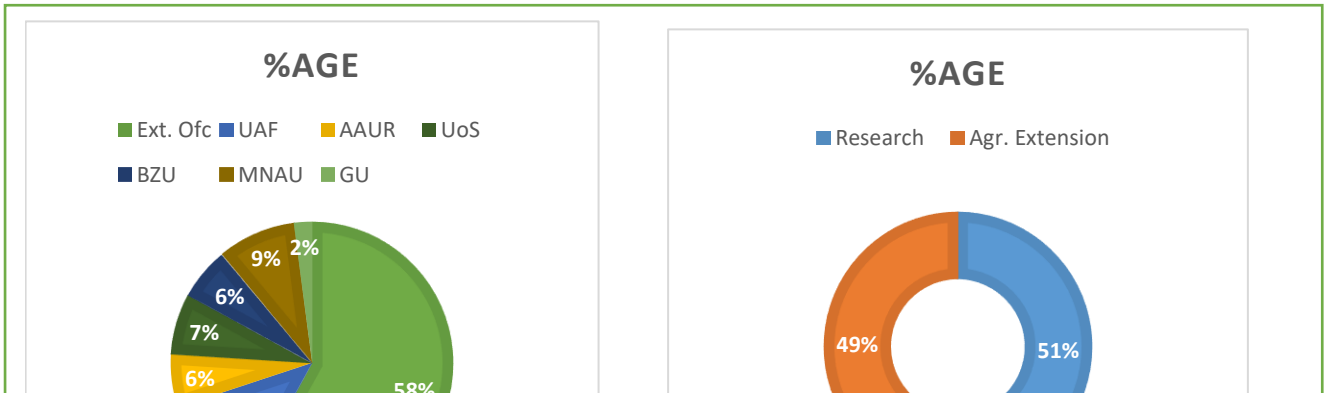
Results and Discussions

Demographic analysis

The demographic analysis of the experts outlined their personal attributes, diverse educational backgrounds, organizational status, and job experiences. Demographic status is

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

often used in research to understand the structure and dynamics of a population and how these factors influence behaviors, opinions, and outcomes. Results presented in figure 3(a) indicate that the majority of respondents (58%) were extension personnel selected from agricultural institutes. Whereas, remaining 42% experts selected from agricultural universities. Among agricultural universities, majority (12%) were from the University of Agriculture, Faisalabad (UF). This is because UAF is the largest and oldest agricultural university in Punjab and Asia, with the highest number of faculty members. They are actively engaged in research and teaching across various agricultural disciplines. Bahauddin Zakariya University and MNS University of Agriculture, Multan, follow in the number of respondents. Moreover, equal proportions of the respondents came from academia and extension departments. This is due to their academic and professional backgrounds (figure 3(b). Results displayed in figure 3(c) indicate that most of the experts (37%) in the selected study areas (academia and research) were in the older age group, specifically between 41 and 50 years old. The majority of them were highly educated, with 59% holding



ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

Figure 3 Demographic status of the respondents

Doctorate degrees in various agricultural disciplines, particularly in extension and outreach activities (figure 3(d). Regarding their job experience, most respondents fell into the 11-20 years category. They are considered highly experienced professionals, specializing in various agricultural disciplines (Figure 3(e). Despite the numerous benefits of growing olives in the Punjab region of Pakistan, researchers from various agricultural disciplines have conducted extensive studies to address gaps and enhance the crop's adaptability across the country. This is the primary reason for selecting agricultural experts from diverse fields to record their opinions on olive suitability in alignment with Islamic core principles. Apart from the selection of respondents, their demographic characteristics also play a crucial role in this context.

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

Compared to their younger counterparts, elderly growers often possesses in-depth knowledge of the issues and risks involved in farming. This is aligned with the findings of Özsayın, Tan and Everest (2018), who argue that age is a significant socioeconomic factor impacting risk-related barriers and the expansion of olive farming. Similarly, education is a key social variable that significantly enhances individuals' knowledge levels compared to those who are illiterate. To thrive, agricultural sectors must continuously learn and innovate their practices. Joint innovation capacity is crucial for success, necessitating a rethinking of education/learning and the development of agricultural professionals (Allahyari, Mohammadzadeh and Nastis 2016). Moreover, experienced agricultural professionals are crucial in exploring new practices, as their advanced knowledge and experience enable them to adopt innovative techniques effectively, driving advancements and sustainability in agriculture (Šūmane, Kunda, Knickel et al. 2018).

Knowledge level of the experts regrading olive sustainable framing based on Islamic Prophetic teachings

Results presented in Table 1 depicts the knowledge level of the field experts about olive sustainability align with Prophetic teachings. The findings reveal that most respondents responded positively to the majority of statements regarding their knowledge level, with notable mean differences. They were well-informed about Prophetic teachings that promote the preservation of natural resources for future generations, managing environmental pollution through agricultural planning as guided by the Seerah and Ahadith, and improving productivity while ensuring long-term sustainability. In contrast, they were unfamiliar with the state's policies on implementing transparent pricing mechanisms in agricultural trade and sales facilities, the concept of Ihyaa al-mawat, and measures to prevent the stockpiling of agricultural produce in accordance with Islamic Prophetic teachings.

All respondents were selected for their expertise and practical knowledge in sustainability. They were well-informed about the practical implementation of agricultural policies by the government at both local and state levels. Although they were aware with some of the statements in the questionnaire, they lacked awareness about how these implementations align with Islamic principles. Islam always guides towards righteousness and prohibits wrongdoing, including in agricultural sustainability, such as in olive farming, where the application of Islamic rules and Prophetic teachings is often lacking. A prime example is the transparent pricing mechanisms in agricultural trade and sales facilities, as mandated by Islam and reflected in the Prophet’s sayings in the Seerah and Ahadith

Table 1 Knowledge level of the respondents regarding sustainable farming from Islamic Prophetic teachings

Sr.#	Statement/variable	Response	
		Yes%	Mean ± SD
1.	An agricultural policy rooted in Prophetic teachings has the potential to enhance productivity while ensuring long-term sustainability.	17.5	3.49 ± .83c

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

2.	Do you believe that current agricultural or state policies align with efforts to revive dead (barren) land?	7.1	2.71 ± .43f
3.	Are you aware of the state's policy on implementing transparent pricing mechanisms in agricultural trade in alignment with Islamic Prophetic teachings?	14	3.23 ± .71d
4.	Do you believe that government initiatives are designed to establish agricultural and sales facilities in alignment with Islamic Prophetic teachings?	10.1	2.99 ± .53e
5.	Do you believe that government policies, ideally influenced by Islamic teachings, effectively aim to prevent fraudulent practices and the stockpiling of agricultural produce at the local or state level?	6.0	2.48 ± .36g
6.	Are you aware that Prophetic teachings emphasize the preservation of natural resources for the benefit of future generations?	25.3	3.88 ± 1.08a
7.	Do you know how the Seerah and Ahadith address controlling environmental pollution through agricultural planning?	20.0	3.61 ± .91b

The statements were evaluated using a five-point Likert scale, where “1 = Highly disagree” and “5 = Highly agree.” Letters and SD indicate statistically significant differences between groups. SD = Standard deviation.

The Prophet Muhammad (peace be upon him) emphasized honesty and transparency in transactions. In a well-known Hadith reported by Al-Muqdam ibn Ma’di Karib, the Prophet said:

"He who cheats us is not one of us." (Sahih Muslim).

This Hadith highlights the ethical necessity of honesty in trade, suggesting that deception, such as unfair pricing and hoarding, contradicts Islamic principles. Furthermore, the Prophet Muhammad (peace be upon him) established a standard for fair trade practices. For example, he condemned individuals who engaged in unfair practices, such as selling goods they did not yet possess or manipulating prices to take advantage of others.

The Prophet Muhammad (peace be upon him) said, "The buyer and seller have the option of canceling or confirming the bargain unless they separate, and if they spoke the truth and made clear the defects of the goods, then they will be blessed in their bargain, but if they hid something and told lies, their bargain will be deprived of Allah’s blessings**."** (Sahih al-Bukhari).

“When you buy and sell, be honest and make a fair deal**.”** (Sunan Abi Dawood).

These Aadith underscores the significance of transparency and honesty in trade. It highlights that both parties in a transaction must reveal any defects and provide truthful information about the product. If either party conceals defects or gives false information, the transaction will be deprived of blessings. This reflects the principles of ethical and transparent pricing and embodies the Islamic values of fairness and integrity.

In another example concerning the prohibition of hoarding essential goods. The Prophet Muhammad (peace be upon him) said:

“Whoever hoards food to raise its price is a sinner.” (Sahih Muslim)

This Hadith deals with the issue of hoarding with the intention of manipulating market prices, which can result in unfair trade practices. In the context of olive farming and agricultural sustainability, this teaching prohibits hoarding olive produce to artificially raise prices.

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

In another Hadith, the Prophet Muhammad (peace be upon him) advised against hoarding produce:

"Do not withhold your produce to raise its price, for it is not permissible to hoard food." (Sunan Ibn Majah).

This teaching underscores that hoarding to artificially induce shortages or raise prices is prohibited, thereby fostering fairness in the availability of produce. The results are also in accordance with the findings of Righi and Viganò (2023), Samoggia and Beyhan (2022), that a fair price is one that is equitable for both buyers and sellers. Ensuring just and principled practices throughout the agricultural supply chain is crucial for sustainability and effectiveness. Adisa, Ilugbusi, Adewunmi et al. (2024) support the fact that fair pricing mechanisms and sustainability by ensuring that essential agricultural products are accessible and reasonably priced for all consumers, thus fostering ethical practices and market stability. Moreover, agricultural experts emphasized the importance and distribution of pricing mechanism in agricultural trade. Equitable resource sharing needed for crop production is essential to foster ecological integrity across several cultivation methods. This includes factoring environmental costs into the pricing mechanism (Del Prete, Golossenko, Gorton et al. 2024, Mishenin, Yarova and Koblianska 2021). According to Islam, there must be a harmonious balance between the operational costs, the price of goods, and the community welfare (Islam 2017). This balance is reflected in the Quranic verse: "Only be a trade agreed amongst you" (Quran 4:29), which implies that agreements among stakeholders—producers, owners, sellers, and buyers—must be upheld. This balance ensures that no stakeholder suffers harm. Consequently, Islamic states generally refrain from intervening in price setting unless a grievance is raised by any of the parties involved. In another research study, Saeidi Abu Ishaghi, Mirjalili and Mirhoseini (2024) stated that the Holy Prophet (Peace Be Upon Him) sought to foster economic growth among Muslims by addressing several pre-Islamic economic issues. He focused on achieving economic parity, curbing monopolies, utilizing surplus resources, controlling price surge, and combating bribery, dishonesty in transactions, and hoarding.

Estimation results of the measurement model using PLS-SEM

Table 2 presents the mean and factor loading results for each variable in the proposed model. Cronbach's alpha (α) was also evaluated for each variable, with the highest values being 0.81 for perception of olive sustainability (POS) and 0.79 for Islamic principles (IPA). The convergent validity, assessed by AVE, exceeded 0.5 for each inferred variable, indicating that each variable can account for over 50% of the indicator variance in the model.

Table 2 Results for the measurement model concerning knowledge level of the experts about olive sustainability align with conventional and Islamic principles

Variable	Statement	Mean	α	AFL	AVE	P-value
Perception of olive sust. (POS)	3	3.53	0.81	0.75	0.59	0.000
Challenges of Conventional practices (CCP)	3	2.94	0.75	0.88	0.61	0.000

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

Attitude towards behavior (ATB)	4	3.26	0.79	0.76	0.64	0.000
Perceived usefulness (PU)	4	3.92	0.71	0.83	0.60	0.000
Perceived ease of use (PeOU)	3	2.91	0.72	0.87	0.57	0.000
Perceived behavior control (PBC)	3	3.26	0.79	0.70	0.60	0.000
Islamic principles (IP)	3	3.67	0.71	0.74	0.67	0.000
Subjective norm (RI)	3	3.24	0.80	0.80	0.62	0.000

Cut-off level: $\alpha > 0.7$; AFL > 0.7; CR > 0.7; AVE > 0.5; p value < 0.005 "non-normality"
α Cronbach- α (reliability) *AFL* Average factor loading, *CR* composite reliability *AVE* average variance extracted. 'RI' = religious influnece
Statements were evaluated utilizing a five-point Likert scale (1 = highly disagree; 5 = highly agree)

The estimation results under the measurement scale demonstrate significant values regarding reliability and validity. According to Cheung, Cooper-Thomas, Lau et al. (2024), Matthes and Ball (2019), Rönkkö and Cho (2022), the discriminant validity of the model should not exceed a value of 0.9 for any construct, which is supported by the results. Furthermore, Cronbach's alpha, similar to the CR value, estimates internal consistency and should exceed 0.7 to effectively measure an underlying variable (Assis Gomes, Golino and de Souza Peres 2018, Cheah, Sarstedt, Ringle et al. 2018, Lai 2021).

Structure model of PLS-SEM

Table 3 presents the SEM results, detailing path coefficients, p-values, and effect sizes (f^2-value). Experts' perceptions accounted for approximately 78% of the explained variance in olive sustainable farming. Attitude toward behavior (ATB), perceived behavioral control (PBC), and subjective norms (SN) emerged as significant predictors of experts' opinions regarding the perception of sustainability (POS). Respondents who demonstrated positive attitudes, as indicated by standardized coefficients, showed stronger intentions to adopt sustainable olive farming (R^2 = 61%) (β = 0.48). The explained variance (R^2) for subjective norms in relation to POS was 71%. The latent construct 'perceived behavioral control,' which included both self-motivation and perceived resources, accounted for 54% of the explained variance in perception. Overall, the findings supported the hypotheses (H_1), demonstrating that favorable ATB, PBC, and SN have a significant influence on experts' intentions to pursue sustainable olive cultivation in the region.

The results indicate that perceived usefulness and ease of use positively influence respondents' intended behavior. Subjective norms, including religious influence and social media, have significant direct impacts on experts' intentions regarding POS. Conversely, extension services show negative indirect effects on their perception. Perceived controls, such as self-motivation, significantly influence intentions, with the exception of perceived resources (p = 0.25). These findings support H_2, suggesting that observed variables generally have positive direct effects on intentions, except for perceived resources and extension services.

Mediation analysis using PLS-SEM

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

Mediation analysis using PLS-SEM explores how an independent variable influences a dependent variable through one or more mediators, offering insights into the mechanisms underlying observed relationships in the data (Sarstedt, Hair, Nitzl et al. 2020). Table 3 illustrates the mediation results of the inner or structural model PLS-SEM for experts' perceptions about sustainable olive farming. Attitude explains approximately 41% of available variance (R^2) in respondents' perception towards olive sustainability. Improved attitudes by 21% and 16% for PU and PeOU, respectively. Thus, the findings support the H_3, indicating attitudes mediate the positive effect of PU and PeOU on experts' intentions for POS.

Subjective norms, which encompass religious beliefs and social influence, demonstrated significant positive effects on POS, with the exception of extension services. Notably, religious influence showed a higher coefficient (β = 0.69) for POS. In contrast, extension services did not have a substantial impact on experts' subjective norms related to olive sustainability with non-significant effect (p= 0.54). Therefore, hypothesis H_4, which proposed positive and significant mediating effects of religious beliefs and social peers on respondents' intentions through subjective norms, was supported for POS. However, extension services did not exhibit a positive mediating effect on intentions.

Perceived resources have significant and positive direct effects on individuals' intentions toward sustainable olive farming, mediated by perceived control. Self-motivation shows positive direct effects, while perceived external resources have a non-significant effect (p=0.13). These findings support Hypothesis (H_5), indicating that perceived control mediates the positive influence of personal willingness, but not external resources, on intentions. Additionally, large effect sizes were observed for perceived usefulness on attitude towards behavior (f^2 = 1.01), religious beliefs on subjective norms (f^2 = 1.88), and social influence on POS (f^2 = 0.81).

The explained variance (R^2) for Islamic principles (IPA) was 51%. Respondents who demonstrated positive attitudes, as indicated by standardized coefficients (β = 0.35), showed stronger intentions to adopt sustainable olive farming based on Islamic principles (IPA). Similarly, respondents having religious beliefs (β = 0.47) and self-motivation (β = 0.22) on principles such as stewardship, community & cooperation (Ukhuwwah & Ta'awun)**,** and Ilm (knowledge) have had a significant and positive impact on the respondents' perception of sustainability. Thus, H_6, which posits that ATB, PBC, and SN positively influence perception of Islamic principles in agriculture on POS.

The explained variance (R^2) for challenges of conventional practices (CCP) was 39%. The analysis shows that respondents with attitudes (β = 37), subjective norms (β = 46), and perceived control (β = 22) tended to exhibit that CCP, associated with poor sustainability, limited knowledge and skills, and water scarcity, has a significant but negative impact on experts' perceptions about sustainability. Consequently, the findings support hypothesis H_7, indicating that ATB, PBC, and SN negatively influence perception of Islamic principles in agriculture on POS.

Table 3. PLS-SEM results for the structure model for POS (n =170)

Model	Variable's path	Path-coeffici	P-valu	f-square
Perception of sustainability (*POS*	AT -> POS	0.48	0.000	0.25
	SN -> POS	0.59	0.030	0.24
	PC -> POS	0.32	0.000	0.17
	Perceived usefulness	0.24	0.000	

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

	Perceived ease of use	0.38	0.000	
	Religious beliefs	0.35	0.000	
	Social influence	0.49	0.001	
	Extension service	-0.02	0.263	
	Self-motivation	0.16	0.009	
	Perceived resources	0.13	0.135	
Islamic principles in agri.(IPA)	AT -> IPA	0.35	0.010	0.11
	SN -> IPA	0.47	0.001	0.21
	PC -> IPA	0.22	0.004	0.14
Challenges of conventional practic (CCP)	AT -> CCP	0.37	0.000	0.12
	SN -> CCP	0.43	0.031	0.20
	PC -> CCP	0.12	0.000	0.09
Attitude (*ATB*)	Perceived usefulness -> Attitud	0.41	0.019	1.01
	Perceived ease of use -> Attituc	0.28	0.048	0.13
Subjective norms (*SN*)	Religious beliefs -> SN	0.69	0.003	1.88
	Social influence -> SN	0.28	0.026	0.81
	Extension service -> Nc	0.04	0.341	0.09
Perceived controls (*PC*)	Self-motivation -> PC	0.24	0.031	0.16
	Perceived resources -> PC	0.19	0.289	0.23
Islamic Principles (IPA)	Environmental Stewardship	0.31	0.006	0.24
	Moderation	0.83	0.027	2.17
	Community & cooperation	0.13	0.049	0.06
	Ilm (Knowledge)	0.12	0.040	0.18
	Innovation	0.20	0.035	0.11
Challenges of Conventional practi	Water scarcity	-0.10	0.308	0.04
	Land degradation	0.17	0.009	0.02
	Poor sustainability	0.22	0.001	0.03
	Limited knowledge/skills			

POS (R^2 = 0.78); ATB (R^2 = 0.61); SN (R^2 = 0.71); PC (R^2 = 0.54); CCP (R^2 = 0.39); IPA (R^2 = 0.51)

The most likely reason for the positive influence of attitude, perceived control, and subjective norms on agricultural experts' perceptions of olive sustainability is that these factors capture critical elements that drive respondents' decisions to adopt sustainable practices. Agricultural experts often play a significant role in decision-making and policy implementation at the national level, aimed at enhancing the well-being of the farming community (Raišienė, Podviezko, Skulskis et al. 2019). Their positive attitudes reflect a strong belief in the benefits of sustainable practices, while perceived control indicates confidence in their ability and resources to implement these practices. Additionally, subjective norms, shaped by social expectations and values, reinforce the importance of sustainable farming as part of their professional and ethical obligations. These combined factors contribute to a robust intention to support and advocate for sustainable agricultural methods. These findings align with Riaz, Iqbal, Sohail et al. (2021), who identified perceived usefulness, ease of understanding, and lack of complexity as influential factors affecting respondents' intentions towards sustainable practices in developed countries.

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

In the study model, subjective norms refer to the social pressures or influences that affect an individual's decision-making and behavior. These norms encompass various external factors, such as cultural expectations, social media, peer influence, and religious beliefs. A possible explanation for these findings is that religious beliefs and social influence play a deeply rooted role in shaping agricultural experts' perspectives and behaviors. In many regions, religious teachings provide a moral and ethical framework that guides individuals' decisions, reinforcing sustainable practices as part of stewardship and responsibility, and moderation (Le Duc 2023, Orellano, Valor and Chuvieco 2020). This strong association could explain why religious influence had a notably high coefficient for POS, as it aligns with shared values and cultural norms that prioritize environmental care and sustainability.

On the other hand, the lack of substantial effect from extension services on subjective norms may be due to perceived limitations in these services' effectiveness or relevance. Extension services might be seen as less persuasive or less culturally aligned compared to religious and social influences. Factors such as inadequate outreach, lack of trust, or the perception that these services do not fully address the real challenges faced by field experts could contribute to their weaker mediation effect on intentions toward sustainability. The results are also align with the findings of Elias, Nohmi, Yasunobu et al. (2016), Hameed and Sawicka (2023),which highlights that poor extension services can hinder the adoption of sustainable practices by lacking the necessary knowledge and support for farmers.

Among the perceived control variable, a probable reason for the non-significant effect of external resources, such as subsidies or financial aid, could be the perception that these resources are either insufficient, inconsistently provided, or not easily accessible (Ray, Singh and Jakhar 2023). Experts might believe that external financial support lacks reliability or sustainability, which undermines their confidence in such resources' ability to facilitate long-term adoption of sustainable practices among farming community.

The models' findings suggest that Islamic principles have a strong influence on experts' perceptions of olive sustainability. Community & Cooperation (Ukhuwwah & Ta'awun) encourages collective efforts and shared responsibility Shahpari and Hojjat (2015), which aligns with sustainable olive farming practices that benefit both individuals and communities (Abdelzaher, Kotb and Helfaya 2019a). Ilm (knowledge) promotes the use of scientific and traditional wisdom to improve farming techniques, ensuring that olive farming remains both productive and environmentally sustainable. Ijtihad (innovation) supports the adaptation of new practices and technologies in olive cultivation, helping to address modern challenges like water management, pest control, and resource management. This supports the findings of Akeel (2022), Jain (2021), Tabroni, Arovah, Iryana et al. (2021), arguing the importance of knowledge and innovation in Islam. Thus, together, these Islamic principles encourage practices that are not only sustainable but also culturally resonant, enhancing experts' perceptions of sustainable olive farming.

The negative impact of conventional practices (CCP) on olive sustainability perceptions is likely due to issues such as poor sustainability leads to over-exploitation of natural resources, such as soil degradation, which are not aligned with long-term environmental goals. Limited knowledge and skills in modern, sustainable farming techniques may hinder experts from adopting more efficient and eco-friendly practices, thus reinforcing the negative perception. Water scarcity, a critical issue in regions where olive farming is common, exacerbates the challenges of conventional methods that are less water-efficient, leading to unsustainable farming practices. These factors collectively mediate the negative influence of CCP on the perception of olive sustainability, as experts recognize the need for more sustainable alternatives to overcome these challenges. Field experts believe that poor sustainability in olive

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

farming is due to several root causes: farmers' reliance on traditional farming methods, lack of awareness or education about sustainable farming techniques, and insufficient resources such as land, capital, and water to implement sustainable practices. Scholars have analyzed these teachings over time, examining their relevance to environmental conservation and sustainability. In recent decades, agriculture has demonstrated its ability to meet the challenge of sustainability. Most olive orchards are irrigated, but the widespread adoption of intensive farming practices has made olive cultivation less ecologically sustainable (Calatrava, Martínez-Granados, Zornoza et al. 2021, Tian, Wang, Li et al. 2021). Hence, it is essential to emphasize the responsibility of humans as stewards of the Earth, promoting farming practices that conserve water, protect soil health, and minimize environmental impact, in accordance with the Islamic principle of environmental stewardship. The results align with Arafa (2014), Chaudhry (2022), Roesch-McNally, Arbuckle and Tyndall (2018), who highlighted preventing soil and land degradation to improve soil quality and plant health through soil stewardship. Prophet Muhammad (PBUH) emphasized environmental stewardship by encouraging the planting of trees and the care of the land (Mamat and Mahamood 2017). The Prophet Muhammad (peace be upon him) said: "If the Final Hour comes while you have a palm shoot in your hand, if you can, then plant it." (Sahih al-Bukhari, Book 77, Hadith 8)

"If a Muslim plants a tree or sows seeds, and then a bird, or a person, or an animal eats from it, it is regarded as a charitable gift (Sadaqah) for him." *[*Sahih al-Bukhari 2320]

By encouraging the planting of trees, the Prophet (PBUH) was promoting practices that contribute to the environmental stewardship in agriculture, verifying that the land remains productive and beneficial for future generations. Another example of the Prophet Muhammad's (PBUH) teachings on environmental stewardship is his guidance on water conservation.

Moreover, Agricultural experts identified limited knowledge and skills about farming as a major barrier to sustainability, especially in the context of olive farming in Pakistan. Although olive cultivation holds considerable potential to enhance the agricultural sector and drive economic growth, many farmers lack the necessary training and expertise in modern farming techniques. This knowledge gap restricts their ability to adopt sustainable practices, effectively manage resources, and maximize crop productivity. Limited knowledge and skills in agriculture relate to the Islamic principles of 'Ilm (knowledge)**.** 'Ilm underscores the importance of gaining and applying knowledge, with education and training enhancing farmers' expertise (Abdelzaher et al. 2019a, Kowanda-Yassin 2021, Said, Umachandran and Don 2018). Knowledge emphasizes using independent reasoning and innovation to address farming challenges and improve outcomes (Rafikov and Akhmetova 2020). One of the notable example from the time of the Prophet Muhammad (PBUH) is his encouragement of land reclamation. He said:

"Whoever revives barren land, it is his." (Sahih al-Bukhari).

This principle encouraged individuals to reclaim and cultivate unused land, making it productive for agriculture (Diant, Audah, Anshari et al. 2023, Suhendra 2017). It promoted efficient resource use and ensured community involvement in agricultural development. By promoting land reclamation, the Prophet (PBUH) encouraged community cooperation to enhance agricultural productivity and ensure food security, reflecting solidarity in agricultural planning. Hence, a strong sense of community (Ukhuwwah) fosters mutual support, enabling farmers to help one another during challenges like crop diseases, financial difficulties, and environmental issues.

Further, 'Takaful' refers to shared resources and aid in Islam (Salman 2014). During hardship, the Prophet (PBUH) promoted mutual support by distributing food and resources to those in need. This Takaful principle ensured everyone received aid, helping maintain agricultural

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

productivity and community resilience (Atah, Mohammed, Adeyemi et al. 2024, Hassan 2020). The Prophet Muhammad (peace be upon him) encouraged farmers to establish cooperative partnerships. For example, in Medina, the concept of Mudarabah was used, where one party provided the capital or land, and the other managed the work. Both parties shared the profits and risks, reflecting the Takaful principle of mutual risk-sharing within the community. In the time of the Prophet Muhammad (peace be upon him), it was customary for farmers to help each other during harvest seasons. If one farmer experienced a poor harvest, others would offer support through food or resources. This practice embodies the Takaful principle of mutual assistance, where the community comes together to support one another in times of need (Bakry and Gunawan 2018, Ishak, Robbi and Nasir 2021). The Prophet (PBUH) supported gradual improvements in agriculture, such as introducing crop rotation and better irrigation methods. The sayings of Prophet Muhammad (PBUH) related to knowledge and innovation in the context of sustainable agriculture is his endorsement of crop rotation.

Moderation analysis using PLS-SEM

Table 3 displays the results from the bootstrap multi-group analysis, emphasizing the moderating role of Islamic principles on the relationship between perceived behavioral control (PBC) and the perception of olive sustainability (POS). Islamic prophetic principles exert the strongest positive influence on this relationship, with a significant path coefficient ($\beta = 0.67$) found among respondents with higher self-motivation. The model also shows that Islamic principles have a positive, though non-significant, impact on the intended knowledge of respondents with access to external resources, reflected by a standardized path coefficient ($\beta = 0.33$) for those in the high-level category. These results support H8, confirming that Islamic prophetic principles moderate the relationship between PBC and POS.

Table 3 PLS-SEM results for the moderation effect of respondents' knowledge levels on olive sustainability, with demographic variables

Moderating Variable	Path	coefficient β (low)	coefficient β(Medium)	coefficient β (high)	P-value (Low)	P-value Medium	P-value (High)
Islamic principles	IPA-> ER	-0.197	0.19	0.33	0.08	0.18	0.30
	IPA -> POS	0.467	0.54	0.39	0.06	0.04**	0.08
Islamic principles	IPA -> SM	0.109	0.22	0.67	0.13	0.11	0.04***
	IPA -> POS	0.429	0.49	0.45	0.08	0.03	0.01***

Note: 'ER' = External resources, 'SM' = Self-motivation, 'IPA' = Islamic principles in agriculture, 'POS' = perception of sustainability

The findings suggest that Islamic prophetic principles play a significant moderating role in the relationship between perceived behavioral control (PBC) and the perception of olive sustainability (POS), particularly among respondents with higher self-motivation. Islamic principles, such as self-discipline, responsibility, and ethical stewardship, may enhance individuals' sense of control and motivation, leading to a stronger intention to adopt sustainable practices in olive farming. The probable reason are intrinsic factors like self-motivation, guided by Islamic principles, play a more pivotal role in shaping attitudes and behaviors toward

sustainability. The results are also align with Anas, Alwi, Razali et al. (2013), who emphasized the concept of integrating Islamic principles with modern knowledge to address the practical realities or challenges.

Conclusions, **limitations, and suggestions**

The study underscores the potential of integrating experts' insights on Prophetic principles and addressing key challenges in conventional farming that impede olive sustainability. It proposes a sustainable model for olive cultivation using PLS-SEM, highlighting the socio-psychological and religious factors that offer a pathway to sustainable agriculture, benefiting both research and farming communities. Water scarcity, poor sustainability practices, limited knowledge and skills have been identified as significant challenges hindering olive sustainability in Punjab, Pakistan. Islamic principles mediate the positive impact of stewardship, community cooperation, and innovation through stronger perceived usefulness, religious influence, and self-motivation, thereby enhancing individuals' knowledge of sustainable farming. Additionally, Islamic principles strongly enhance the relationship between perceived behavioral control and the perception of olive sustainability, particularly among highly self-motivated individuals. Hence, it can be concluded that the proposed study model enhances agricultural experts' commitment to applying these principles and addressing the challenges, ultimately fostering the improvement of sustainable olive farming in the region.

This study has some limitations and offers suggestions for future research. It investigates the challenges of aligning sustainable olive farming practices with core Islamic principles, drawing on the perceptions of agricultural experts, and utilizing PLS-SEM. Future research should consider other agricultural crops and use covariance-based CB-SEM alongside different theories to strengthen the model. Additionally, including responses from the farmers, beyond academic experts and research institutes in the province, would help validate the findings.

Statements and declarations

Acknowledgment

The authors acknowledge the cooperation of agricultural experts for their timely responses, which were essential for completing this research study.

Data Availability Statement

Data will be available on demand.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Ethical consideration

Informed consent was obtained from all participants before they were included in the study. Each participant received comprehensive information about the study and provided their written consent by completing questionnaire-based interview schedules.

Consent for publication

Not applicable.

Declaration of conflict of interests

The author(s) disclosed no potential conflicts of interest related to the research, authorship, and or publication of this paper.

References

Abdelzaher, Dina M, Amr Kotb and Akrum Helfaya. 2019a. "Eco-Islam: Beyond the Principles of Why and What, and into the Principles of How." *Journal of Business Ethics* 155:623-43.

Abdelzaher, Dina M., Amr Kotb and Akrum Helfaya. 2019b. "Eco-Islam: Beyond the Principles of Why and What, and into the Principles of How." *Journal of Business Ethics* 155(3):623-43. doi: 10.1007/s10551-017-3518-2.

Adisa, Olawale, Bamidele Segun Ilugbusi, O Adewunmi, O Franca and L Ndubuisi. 2024. "A Comprehensive Review of Redefining Agricultural Economics for Sustainable Development: Overcoming Challenges and Seizing Opportunities in a Changing World." *World Journal Of Advanced Research and Reviews* 21(1):2329-41. doi: https://doi.org/10.30574/wjarr.2024.21.1.0322.

Akeel, Enam. 2022. "Recognition of Innovation in Islam." *Multi-Knowledge Electronic Comprehensive Journal For Education & Science Publications (MECSJ)* (52).

Akhtar, Mobeen, Yuanyuan Zhao and Guanglei Gao. 2021. "An Analytical Approach for Assessment of Geographical Variation in Ecosystem Service Intensity in Punjab, Pakistan." *Environmental Science and Pollution Research* 28(28):38145-58. doi: 10.1007/s11356-021-13217-w.

Akhtar, Mobeen, Yuanyuan Zhao, Guanglei Gao, Qudsia Gulzar and Azfar Hussain. 2022. "Assessment of Spatiotemporal Variations of Ecosystem Service Values and Hotspots in a Dryland: A Case-Study in Pakistan." *Land Degradation & Development* 33(9):1383-97. doi: https://doi.org/10.1002/ldr.4245.

Akram, Muhammad Waqar, Nida Akram, Wang Hongshu and Ayesha Mehmood. 2019. "An Assessment of Economic Viability of Organic Farming in Pakistan." *Custos E Agronegocio Line* 15(1):141-69.

Al Hiary, M, Boubaker Dhehibi and SK Kassam. 2019. "Market Study and Marketing Strategy for Olive and Olive Oil Sector in the Southern Arid Part of Jordan." *Journal of Agricultural Science and Technology* 21(5):1065-77.

Ali, Sajjad, Abdul Mueed, Muhammad Jahangir, Shehla Sammi, Shahbaz Ahmad Zakki, Ammad Amin, Khurshid Anwar, Anam Ayoub, Pengfei Li and Rana Faisal. 2024a. "Evolution of Olive Farming, Industry, and Usage in Pakistan: A Comprehensive Review." *Journal of Agriculture and Food Research*:101091.

Ali, Sajjad, Abdul Mueed, Muhammad Jahangir, Shehla Sammi, Shahbaz Ahmad Zakki, Ammad Amin, Khurshid Anwar, Anam Ayoub, Pengfei Li, Faisal Shehzad, Qasim Ali, Musfira Akram, Sheeraz Ahmad, Muhammad Riaz, llah Inam u and Huaiji Zheng. 2024b. "Evolution of Olive Farming, Industry, and Usage in Pakistan: A Comprehensive Review." *Journal of Agriculture and Food Research* 16:101091. doi: https://doi.org/10.1016/j.jafr.2024.101091.

Allahyari, Mohammad Sadegh, Masoumeh Mohammadzadeh and Stefanos A. Nastis. 2016. "Agricultural Experts' Attitude Towards Precision Agriculture: Evidence from Guilan Agricultural Organization, Northern Iran." *Information Processing in Agriculture* 3(3):183-89. doi: https://doi.org/10.1016/j.inpa.2016.07.001.

Anas, Norazmi, EAZE Alwi, Mohd Hudzari Haji Razali, Roose Nilawati Subki and Nor Aini Abu Bakar. 2013. "The Integration of Knowledge in Islam: Concept and Challenges." *Global Journal of Human Social Science, Linguistics & Education* 13:51-55.

Arafa, Mohamed A. 2014. "Islamic Policy of Environmental Conservation: 1,500 Years Old-yet Thoroughly Modern." *Eur. JL Reform* 16:465.

Assis Gomes, Cristiano Mauro, Hudson Fernandes Golino and Alexandre José de Souza Peres. 2018. "Análise Da Fidedignidade Composta Dos Escores Do Enem Por Meio Da Análise Fatorial De Itens / Analysis of the Composite Reliability of the Scores of Enem Via Factor Analysis of Items." *European Journal of Education Studies; Vol 5, No 8 (2018)DO - 10.46827/ejes.v0i0.2178*.

Atah, Ummi Ibrahim, Mustafa Omar Mohammed, Abideen Adewale Adeyemi and Engku Rabiah Adawiah. 2024. "A Proposed Bay-Salam with Takaful and Value Chain Model For financing Agriculture in Kano state, Nigeria." *Islamic Economic Studies* ahead-of-print(ahead-of-print). doi: 10.1108/IES-09-2021-0035.

Bakry, Kasman and Edi Gunawan. 2018. "The Implementation of Islamic Law at the Early Spread of Islam in Indonesian Archipelago." *Jurnal Ilmiah Al-Syir'ah* 16(2):113-25.

Bolarinwa, Oladimeji Akeem. 2020. "Sample Size Estimation for Health and Social Science Researchers: The Principles and Considerations for Different Study Designs." *Nigerian Postgraduate Medical Journal* 27(2):67-75.

BOUYELLI, Sakina. 2023. "Preserving the Environment between the Purposes of Sharia and the Requirements of the Islamic Economy: Towards a Participatory Approach under the Requirements of Modern Development." *(COFEI) Journal*:87-105.

Bsoul, Labeeb, Amani Omer, Lejla Kucukalic and Ricardo H Archbold. 2022. "Islam's Perspective on Environmental Sustainability: A Conceptual Analysis." *Social Sciences* 11(6):228. doi: doi.org/10.3390/socsci11060228.

Calatrava, Javier, David Martínez-Granados, Raul Zornoza, Manuel Gonzalez-Rosado, Beatriz Lozano-García, Manuela Vega-Zamora and María Dolores Gómez-López. 2021. "Barriers and Opportunities for the Implementation of Sustainable Farming Practices in Mediterranean Tree Orchards." *Agronomy* 11(5):821.

Chaudhry, Shazia. 2022. "Environmental Stewardship: Perspectives from the Islamic Teachings." *African Journal of Public Administration and Environmental Studies (AJOPAES)* 1(1):121.

Cheah, Jun-Hwa, Marko Sarstedt, Christian M. Ringle, T. Ramayah and Hiram Ting. 2018. "Convergent Validity Assessment of Formatively Measured Constructs in Pls-Sem." *International Journal of Contemporary Hospitality Management* 30(11):3192-210. doi: 10.1108/IJCHM-10-2017-0649.

Cheung, Gordon W., Helena D. Cooper-Thomas, Rebecca S. Lau and Linda C. Wang. 2024. "Reporting Reliability, Convergent and Discriminant Validity with Structural Equation Modeling: A Review and Best-Practice Recommendations." *Asia Pacific Journal of Management* 41(2):745-83. doi: 10.1007/s10490-023-09871-y.

Del Prete, Margherita, Artyom Golossenko, Matthew Gorton, Barbara Tocco and Antonella Samoggia. 2024. "Consumer Disposition toward Fairness in Agri-Food Chains (Fairfood): Scale Development and Validation." *Journal of Business Ethics*. doi: 10.1007/s10551-024-05756-2.

Diant, Effie, Mizratul Audah, Muhammad Ridha Anshari and Siti Rahmah. 2023. "Pengintegrasian Kimia Lingkungan Dengan Agama Islam Dalam Lingkup Ihya'ul Mawat." *Islamic Education* 1(2):191-204.

Elias, A., M. Nohmi, K. Yasunobu and A. Ishida. 2016. "Farmers' Satisfaction with Agricultural Extension Service and Its Influencing Factors: A Case Study in North West Ethiopia." *Journal of Agricultural Science and Technology* 18(1):39-53.

Emari, Hossein, Hossein Vazifehdoust and Hashem Nikoomaram. 2017. "Islam and Environmental Consciousness: A New Scale Development." *Journal of religion and health* 56:706-24.

Hair, Joseph F., Jeffrey J. Risher, Marko Sarstedt and Christian M. Ringle. 2019. "When to Use and How to Report the Results of Pls-Sem." *European Business Review* 31(1):2-24. doi: 10.1108/EBR-11-2018-0203.

Hamadani, H., S. Mudasir Rashid, J. D. Parrah, A. A. Khan, K. A. Dar, A. A. Ganie, A. Gazal, R. A. Dar and Aarif Ali. 2021. "Traditional Farming Practices and Its Consequences."

Pp. 119-28 in *Microbiota and Biofertilizers, Vol 2: Ecofriendly Tools for Reclamation of Degraded Soil Environs*, edited by G. H. Dar, R. A. Bhat, M. A. Mehmood and K. R. Hakeem. Cham: Springer International Publishing.

Hameed, TS and B Sawicka. 2023. "Role of Agricultural Extension in Adoption of Sustainable Agriculture Practices." *Anbar Journal Of Agricultural Sciences* 21(1). doi: 10.32649/ajas.2023.179947.

Härmälä, Inga Viola. 2014. "Transformative Islamic Ecology-Beliefs and Practices of Muslims for Sustainable Agriculture and Permaculture." Master thesis, Department of Human Geography, Lund, Sweden.

Hassan, Hafiz Ali. 2020. "Takaful Models: Origin, Progression and Future." *Journal of Islamic Marketing* 11(6):1801-19. doi: 10.1108/JIMA-04-2018-0078.

Ishak, Muhammad Shahrul Ifwat, Ahmad Akram Mahmad Robbi and Nur Syahirah Mohammad Nasir. 2021. "The Principle of Tadarruj in Islamic Finance: A Conceptual Review." *Journal of Islamic Finance* 10(1):15-24.

Islam, Mohammad Mominul. 2017. "'Sustainable Agribusiness Challenges: Resolving the Issues through Conservation and Islamic Farming." *IOSR Journal of Agriculture and Veterinary Science* 10(12):63-68.

Islam, Tazul and Amina Khatun. 2015. "'"Islamic Moderation" in Perspectives: A Comparison between Oriental and Occidental Scholarships." *International Journal of Nusantara Islam* 3(2):69-78.

Jain, P. 2021. *Creativity: A Force to Innovation*: IntechOpen.

Jan, Muhammad, Muhammad Ashraf Sumrah, Shoaib Akhtar, Muhammad Ramzan Anser and Iqra Yasmin. 2021. "Nutritional Requirement of Olive (Olea Europaea L.) in Pothwar Region of Pakistan: A Review."

Kamali, Mohammad Hashim. 2016. "Islam and Sustainable Development." *ICR Journal* 7(1):8-26.

Kowanda-Yassin, Ursula. 2021. "Chapter 10 Connecting Religion and the Environment in Islamic Education: Raising Awareness, Exploring Perspectives, and Defining Best Practice." Pp. 258-87. Leiden, The Netherlands: Brill.

Lai, Mark HC. 2021. "Composite Reliability of Multilevel Data: It's About Observed Scores and Construct Meanings." *Psychological Methods* 26(1):90.

Le Duc, Anthony. 2023. "Responsibility as a Primary Environmental Virtue in Islam." *Asian Journal of Philosophy and Religion* 2:187-206. doi: https://doi.org/10.55927/ajpr.v2i1.4821.

Lopez-Brenes, Manuel Enrique and Roberto Marin-Guzman. 2019. "Commercial Regulations of Islam with Special Reference to the Prophetic Traditions." *Islamic Studies* 58(1):83-106.

Mamat, Mohd Nor and Siti Fatahiyah Mahamood. 2017. "Islamic Philosophy on Behaviour-Based Environmental Attitude." *Asian Journal of Environment-Behaviour Studies* 2(2):81-91.

Matthes, Joseph M and A Dwayne Ball. 2019. "Discriminant Validity Assessment in Marketing Research." *International Journal of Market Research* 61(2):210-22.

McCormac, Agata, Dragana Calic, Kathryn Parsons, Tara Zwaans, Marcus Butavicius and Malcolm Pattinson. 2016. "Test-Retest Reliability and Internal Consistency of the Human Aspects of Information Security Questionnaire (Hais-Q)."

Mishenin, Yevhen, Inessa Yarova and Inna Koblianska. 2021. "Ecologically Harmonized Agricultural Management for Global Food Security." Pp. 29-76 in *Ecological*

Intensification of Natural Resources for Sustainable Agriculture, edited by M. K. Jhariya, R. S. Meena and A. Banerjee. Singapore: Springer Singapore.

Orellano, Anabel, Carmen Valor and Emilio Chuvieco. 2020. "The Influence of Religion on Sustainable Consumption: A Systematic Review and Future Research Agenda." *Sustainability* 12(19):7901. doi: https://doi.org/10.3390/su12197901.

Özsayın, Damla, Sibel Tan and Bengü Everest. 2018. "The Socio-Economic Structure of Farmers Related to Organic Olive Cultivation and the Knowledge Level and Approaches Towards Organic Agriculture."

Qureshi, Muhammad Saad, Rashad Waseem Khan Qadri, Muhammad Jafar Jaskani and Rashid Ahmad. 2020. "Morphological and Biochemical Assessment of Eight Olive Genotypes Growing in Potohar Region of Pakistan." *Pak. J. Agric. Sci* 57(4):1036-43.

Rafikov, Ildus and Elmira Akhmetova. 2020. "Methodology of Integrated Knowledge in Islamic Economics and Finance: Collective Ijtihād." *ISRA international journal of Islamic finance* 12(1):115-29.

Raišienė, Agota Giedrė, Askoldas Podviezko, Virgilijus Skulskis and Lina Baranauskaitė. 2019. "Interest-Balanced Agricultural Policy-Making: Key Participative and Collaborative Capacities in the Opinion of Ngos'expertsinterest-Balanced Agricultural Policy-Making: Key Participative and Collaborative Capacities in the Opinion of Ngos'experts." *Economics & Sociology* 12(3):301-18.

Ray, Mohit, Ajit Pratap Singh and Suresh Kumar Jakhar. 2023. "Sustainable Farming Practices Adoption in Agriculture Supply Chain: The Role of Indirect Support Versus Cost Subsidy." *Annals of Operations Research*:1-26. doi: https://doi.org/10.1007/s10479-023-05559-0.

Raza, Hassan, Muhammad Kashif Afzal, Muhammad Luqman, Tahir Munir Butt, Muhammad Yaseen and Muhammad Umer Mehmood. 2023. "Factors Affecting the Awareness and Adoption Level of Improved Olive Cultivation Practices by the Olive Growers in Pothwar Region of the Punjab, Pakistan." *Sarhad Journal of Agriculture* 39(2):298-572.

Riaz, U, S Iqbal, MI Sohail, T Samreen, M Ashraf, F Akmal, A Siddiqui, I Ahmad, M Naveed and NI Khan. 2021. "A Comprehensive Review on Emerging Importance and Economical Potential of Medicinal and Aromatic Plants (Maps) in Current Scenario." *Pakistan Journal of Agricultural Research* 34(2):381-92. doi: https://dx.doi.org/10.17582/journal.pjar/2021/34.2.381.392.

Righi, Selene and Elena Viganò. 2023. "How to Ensure the Sustainability of Organic Food System Farms? Environmental Protection and Fair Price/Come Garantire La Sostenibilità Delle Aziende Agricole Del Sistema Alimentare Biologico? Protezione Dell'ambiente E Prezzo Equo." *Il capitale culturale. Studies on the Value of Cultural Heritage* (27):377-400. doi: https://doi.org/10.13138/2039-2362/3185.

Roesch-McNally, Gabrielle, J Gordon Arbuckle and John Charles Tyndall. 2018. "Soil as Social-Ecological Feedback: Examining the “Ethic” of Soil Stewardship among Corn Belt Farmers." *Rural Sociology* 83(1):145-73.

Rönkkö, Mikko and Eunseong Cho. 2022. "An Updated Guideline for Assessing Discriminant Validity." *Organizational Research Methods* 25(1):6-14.

Saeidi Abu Ishaghi, Abdulkhaliqh, AliMohammad Mirjalili and Yahya Mirhoseini. 2024. "The Strategies Adopted by the Prophet (Pbuh) to Cope with Economic Disorders after Hijra." *Journal of Contemporary Islamic Studies*. doi: 10.22059/jcis.2024.371065.1370.

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

Said, Mohamed Mohamed Tolba, Krishnan Umachandran and Abdul Ghafar Don. 2018. "Innovation in Islamic Education." *Hayula: Indonesian Journal of Multidisciplinary Islamic Studies* 2(2):117-28.

Salman, Syed Ahmed. 2014. "Contemporary Issues in Takaful (Islamic Insurance)." *Asian Social Science* 10(22):210.

Samoggia, Antonella and Zeynep Beyhan. 2022. "Fairness-Enabling Practices in Agro-Food Chain." *Sustainability* 14(11):6391.

Sarstedt, Marko, Joseph F Hair, Christian Nitzl, Christian M Ringle and Matt C. Howard. 2020. "Beyond a Tandem Analysis of Sem and Process: Use of Pls-Sem for Mediation Analyses!". *International Journal of Market Research* 62(3):288-99. doi: 10.1177/1470785320915686.

Shahpari, Hasan and Tahereh Alavi Hojjat. 2015. "Religion, Virtuous Conduct, Justice, Vocation and the Ethics of Hard Work: A Descriptive View of Islamic Sociocultural Systems and Economics." Pp. 49-84 in *Handbook of Research on Islamic Business Ethics*: Edward Elgar Publishing.

Suhendra, Ahmad. 2017. "Models of Land Ownership in Islam: Analysis on Hadis Ihyā'al-Mawāt." *ESENSIA: Jurnal Ilmu-Ilmu Ushuluddin* 18(2):189-99.

Šūmane, Sandra, Ilona Kunda, Karlheinz Knickel, Agnes Strauss, Talis Tisenkopfs, Ignacio des Ios Rios, Maria Rivera, Tzruya Chebach and Amit Ashkenazy. 2018. "Local and Farmers' Knowledge Matters! How Integrating Informal and Formal Knowledge Enhances Sustainable and Resilient Agriculture." *Journal of Rural Studies* 59:232-41. doi: https://doi.org/10.1016/j.jrurstud.2017.01.020.

Sumrah, Muhammad Ashraf, Muhamad Jan, Azhar Hussain, Shoaib Akhtar, Hussain Nawaz, Muhammad Afzal and Humara Umar. 2021. "Evaluation of Some Promising Varieties of Olive (Olea Europaea L.) for Growth and Yield under Pothwar Regions of Punjab, Pakistan." *Pak. J. Agric. Res* 34(3):446-53.

Tabroni, R, EN Arovah, W Iryana, GE Gemini, S Ma'mun and AA Junaedi. 2021. "Islam and Innovation: Food Defence and Safety Movement of Ma'had Al-Zaytun Indramayu." Pp. 300-03 in *1st Paris Van Java International Seminar on Health, Economics, Social Science and Humanities (PVJ-ISHESSH 2020)*: Atlantis Press.

Tian, Zhixi, Jia-Wei Wang, Jiayang Li and Bin Han. 2021. "Designing Future Crops: Challenges and Strategies for Sustainable Agriculture." *The Plant Journal* 105(5):1165-78.

Wang, Jiawei, Dongsheng Zhang, Tanzeel Javaid Aini Farooqi, Luyi Ma, Yu Deng and Zhongkui Jia. 2019. "The Olive (Olea Europaea L.) Industry in China: Its Status, Opportunities and Challenges." *Agroforestry Systems* 93:395-417.

Zafran, Muhammad. 2022. "Framework of Islamic Consumer Behavior: Exploring the Foundation of Islamic Consumer Behavior and Motivation." *Journal of Business Administration and Management Sciences (JOBAMS)* 4(2):8-30.