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Understanding Farmers' adaptation behavior against drought: Application of the Health Belief Model

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Abstract

As climate change intensifies the frequency and severity of droughts, adaptive behavior becomes increasingly crucial. Farmers' capacity to modify their practices in response to evolving climate conditions is vital for ensuring long-term agricultural sustainability and food security. Therefore, this study aims to investigate the psychological factors influencing farmers' adaptation behaviors in response to drought using the Health Belief Model. The sample comprised 380 farmers from Kuhdashat Township, Lorestan Province, and western Iran, selected via a three-stage cluster sampling method. Data were collected using a researcher-designed questionnaire, whose validity and reliability were confirmed. Structural equation modeling (SEM) results indicated that self-efficacy, perceived benefits, perceived vulnerability, and perceived barriers explained about 49% of the variance in farmers' adaptation behavior. Perceived benefits emerged as the strongest predictor of adaptation, while cues to action and perceived severity were insignificant. These findings support the health belief model's practicality and effectiveness in examining water conservation behavior among Iranian farmers.

Keywords: Climate change, Conservation behavior, Mitigation strategies, Self-efficacy, Vulnerability.

INTRODUCTION

The 21st century's climatic changes, including global warming, represent significant global shifts requiring intergovernmental cooperation to address their impacts on ecological, environmental, socio-political, and socio-economic systems (Abbass *et al.*, 2022). Climate change, considered the greatest threat to sustainable development, triggers systemic shocks such as droughts, famines, and biodiversity loss, with drought being the most severe and complex due to its varying characteristics worldwide (Nguyen *et al.*, 2023). Drought, defined as prolonged water shortages, affects over 40% of the global population, with water scarcity projected to worsen, impacting 5 billion people annually by 2050 (Silva, 2024). Water demand is expected to exceed supply by 40% by 2030 (Mulwa *et al.*, 2021). Iran, located in an arid region, faces critical water shortages, with only 117

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billion cubic meters of water available annually due to high evaporation rates (Rahimi-Feyzabad *et al.,* 2020). Severe droughts, affecting 72% of Iran's area and population, have occurred frequently over the past decades, with ongoing droughts since 1998 being the worst in nine centuries (Delfiyan *et al.,* 2020; Meteorological Organization, 2020). Iran's agricultural sector consumes 92.8% of its renewable water, exacerbating the crisis (Tajeri Moghadam *et al.,* 2018). Without proper management, Iran faces a significant environmental crisis, with water availability projected to halve by 2050 (Delfiyan *et al.,* 2020).

Addressing drought involves two main approaches to climate change: mitigation by reducing greenhouse gas emissions and adaptation to new conditions (Wang et al., 2024). While mitigation is a long-term solution with challenges like uneven responsibilities and the free rider effect, adaptation is essential for reducing vulnerability and minimizing costs (Wang and Zhang, 2018). Adaptation, as defined by the IPCC, involves adjusting to the impacts of climate change, particularly in agriculture, where uncertainty presents significant risks (Sharifi, 2020). Farmers in drought-prone areas must modify farming practices to be resilient and implement drought risk management strategies (Tesfahunegn *et al.,* 2016). Adaptation is crucial for mitigating drought's adverse effects, particularly in developing countries, where farmers are key to effective management (Shabanali Femi *et al.,* 2020). Recent research highlights various factors influencing farmers' adaptive behaviors and strategies. For example, Hernández-López et al. (2024) analyzed farmers' adaptation to drought in Colombia, finding that socio-economic vulnerability and drought perception were key predictors of adaptive behavior. Similarly, Wens et al. (2021) studied smallholder farmers in Kenya, revealing that risk assessment, social norms, self-efficacy, and response efficiency significantly affect adaptive behavior. They also emphasized the role of extension services, early warning systems, and financial assistance in fostering adaptation. In Ethiopia, Gebrehiwot & van der Veen (2020) used the Protection Motivation Theory (PMT) model to show that perceived vulnerability and self-efficacy positively influence the implementation of drought risk reduction measures. In Bangladesh, Anik et al. (2021) found that education, income from livestock, participation in organizations, and access to ICT in agriculture significantly affected farmers' adaptation strategies. Similarly, Muthelo et al. (2019) studied South African farmers, highlighting the influence of age, gender, and marital status on vulnerability and coping strategies like water restrictions during droughts. Studies in India by Patnaik et al. (2019) revealed that livelihood interventions, technical training, and agricultural extension services increase the likelihood of adaptation. Collectively, these studies underscore the multifaceted nature of farmers' adaptive behaviors, shaped by socio-economic, institutional, and behavioral factors.

Economic incentives can encourage short-term adaptation, but Iranian policymakers prefer sustainable, voluntary measures (Piñeiro et al., 2020). Understanding farmers' behaviors requires integrating insights from behavioral models. This study uses the Health Belief Model (HBM), a preventive health behavior theory that emphasizing fear and risk perception (Barattucci et al., 2022). The HBM highlights key dimensions, including perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy, and cues to action (Subedi *et al.*, 2023). These factors collectively influence decision-making, particularly in drought, where farmers' perceptions of risk and capacity to act are critical. Farmers are more likely to adopt adaptive practices if they perceive themselves as vulnerable to drought and recognize its severe consequences for their livelihoods. In contrast, models like TPB focus on subjective norms and intentions, which may not adequately address the urgency of risk perception in drought-related decisions (Ajzen, 2020). The HBM's incorporation of perceived barriers and benefits provides a balanced view of motivational and practical considerations, unlike the Social Cognitive Theory (SCT), which focuses more on social learning (Hasan et al., 2024). Additionally, the HBM considers external cues to action, such as government warnings or observing neighbors' experiences, which are critical for farmers' adaptation. Other models, like the Stages of Change Model, prioritize internal readiness but may overlook external influences (Cardona et al., 2023). Self-efficacy, or the belief in one's ability to take action, is another crucial aspect of the HBM. For farmers, having confidence in adopting complex strategies, such as implementing new irrigation techniques, is essential. While the HBM was initially developed for health behaviors, its principles are transferable to environmental risks like drought, as both contexts involve similar psychological processes underlying risk perception and decision-making (Raheli et al., 2020).

This study pioneers the integration of the HBM into agricultural research to analyze farmers' behavioral adaptations to drought, a pressing challenge exacerbated by climate change. Unlike conventional studies focusing solely on economic or environmental factors, this research examines farmers' perceptions of drought susceptibility, severity, benefits of adaptation, and barriers to action. The study identifies regional variations in adaptive behavior by applying the HBM across diverse geographic and socio-economic contexts, offering policymakers targeted strategies to enhance resilience. The study investigates how the HBM's variables influence farmers' adaptive behaviors in Kohdasht, Iran. The objectives are: 1) to apply the HBM in exploring farmers' adaptation behaviors, 2) to identify variables affecting these behaviors, and 3) to evaluate the HBM's explanatory power in this context. By integrating the HBM into the study of drought adaptation, this research provides a comprehensive understanding of the psychological and practical factors influencing farmers' behaviors, contributing to more effective policy and intervention design. The findings are crucial for addressing water scarcity risks and promoting sustainable agricultural practices in the face of climate change. Based on the HBM framework, the study hypothesizes that:

- Perceived vulnerability significantly affects farmers' adaptation behaviors.
- Perceived severity significantly affects adaptation behaviors.
- Perceived benefits significantly affect adaptation behaviors.
- Perceived barriers significantly affect adaptation behaviors.
- Self-efficacy significantly affects adaptation behaviors.
- Cues to action significantly affect adaptation behaviors.

Following this introduction, the methodology section outlines the research design, including data collection, sample selection, and analytical techniques. The results section presents key findings, highlighting patterns in farmers' responses to drought. The discussion section interprets these findings in light of existing literature, exploring implications for policy, practice, and future research. Finally, the conclusion summarizes the insights, offers recommendations for improving drought adaptation strategies, and suggests further research on enhancing farmers' resilience to climate change.

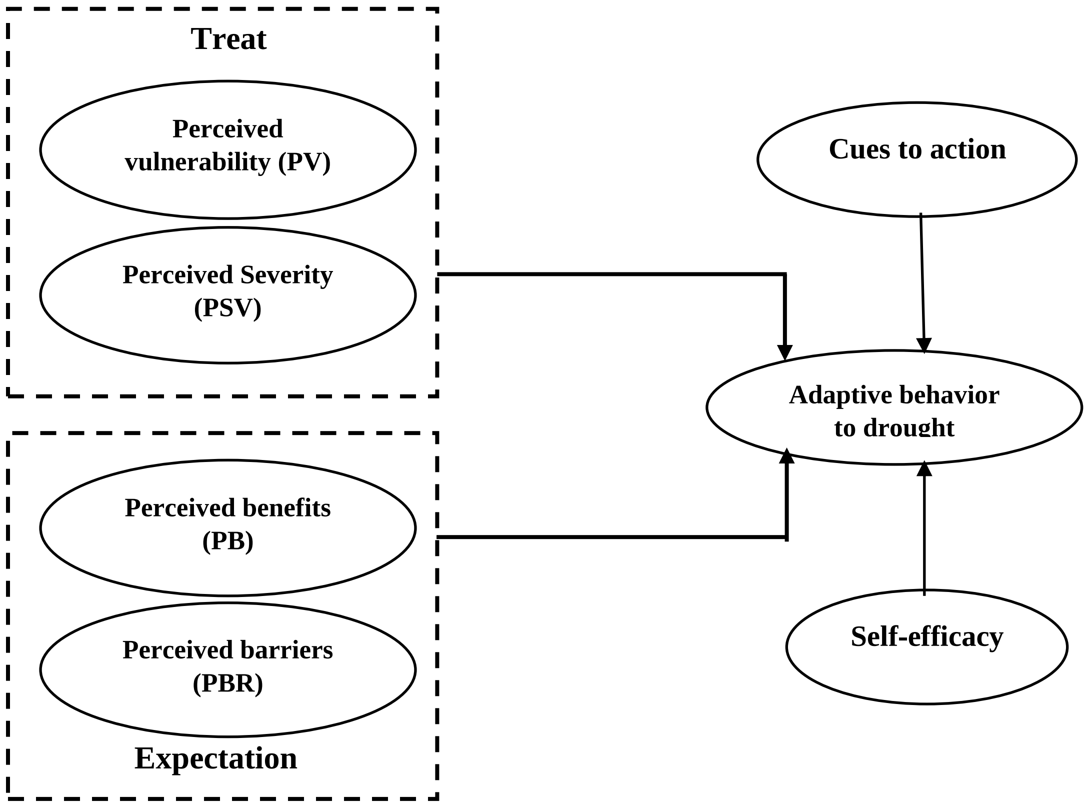

Figure 1. The extended HBM framework (Rosenstock *et al.*, 1998).

MATERIALS AND METHODS

This quantitative cross-sectional study was conducted in Kohdasht Township, west of Iran, with a population of 25,554 farmers. Using the Kerjesi and Morgan (1970) sampling table, the sample size was 380, but 390 questionnaires were completed for greater certainty. A multi-stage cluster sampling method was used due to the large, dispersed population. First, the population was divided into natural clusters based on administrative divisions: central, Tarhan, Kohnani, and Derb Gonbad. These sections were purposively selected for their distinct characteristics. Next, specific districts (Southern Kohdasht, Golgol, West Tarhan, Kohnani, and Derb Gonbad) were chosen to represent diverse farming practices and drought vulnerabilities. A 10% sample of villages in each district was randomly selected, ensuring geographical representation. Finally, a proportional number of farmers from each village was chosen using simple random sampling, maintaining the sample's representativeness. This study followed ethical research principles outlined by Vanclay, Baines, and Taylor (2013). Participants were informed of the study's purpose, risks, and benefits, provided voluntary consent, and were assured confidentiality. Data were anonymized, and participant privacy, dignity, and autonomy were prioritized throughout the research.

The data collection instrument was a researcher-developed questionnaire based on the Health Belief Model (HBM) and related studies. A 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) was used. Experts validated the questionnaire, and a pilot test with 30 farmers in Khorramabad confirmed its reliability, with Cronbach's alpha coefficients ranging from 0.77 to 0.95, indicating acceptable internal consistency (Hair *et al.*, 2010). Table 3 presents all items of the questionnaire. Data were analyzed using Structural Equation Modeling (SEM) with SPSS25 to assess direct and indirect causal relationships, evaluate the model's goodness of fit, and validate latent constructs. SEM is particularly suited for analyzing multiple variables and testing complex theoretical models (Lowry and Gaskin, 2014).

RESULTS

Sociodemographic Characteristics

The descriptive analysis revealed that most farmers (98.2%) were male, while 10.8% were female. The average age of the respondents was 49 years (SD = 12.33, ranging from 18 to 82 years). The majority of farmers (21.8 percent) had a diploma. The range of changes in farmers' agricultural experience was between 2 and 70 years, and their average work experience was 33.61 years. For most farmers (55.1%), rainfall served as the primary source of irrigation water. 32.3% of farmers use wells, 7.9% from rivers, and 4.6% of studied farmers use spring water to irrigate their lands. Most farmers (65.7%) irrigate their land using traditional irrigation methods, while 27.4% use rain irrigation systems and 6.9% use drip irrigation.

Descriptive analysis of HBM constructs

The descriptive results for the HBM constructs showed that cues to action among farmers had the highest average score (mean = 3.62, SD = 0.73). Following, these were perceived benefits (mean = 3.29, SD = 1.08), perceived obstacles (mean = 3.27, SD = 1.06), perceived intensity (mean = 3.27, SD = 1.11), self-efficacy (mean = 3.15, SD = 1.02) and perceived vulnerability (mean = 3.12, SD = 1.06), all of which showed relatively high scores among the samples. Subsequently, we examined the relationships between the seven constructs using Spearman's correlation coefficient.

According to Table 1, there was a significant relationship between drought adaptation behavior and other constructs of the HBM.

Table 1. The results of the variables correlation matrix.

Constructs	1	2	3	4	5	6	7
PS(1)	1						
PSV(2)	0.662**	1					
PB(3)	0.598**	0.606**	1				
PBR(4)	0.616**	0.598**	0.961**	1			
SE(5)	0.658**	0.575**	0.584**	0.595**	1		
CA(6)	0.260**	0.186**	0.197**	0.203**	0.157**	1	
Behavior(7)	0.632**	0.542**	0.581**	0.572**	0.635**	1.69**	1

*P < 0.05. **P < 0.01.

Structural model results

SEM was utilized to explore the relationships between study variables and adaptive behaviors. Six indices were used to assess model fit, and the results indicated that the hypothesized model fit the data well: $\chi 2$/df = 0.941, CMIN/df = 1.43, (P-value = .09, P > 0.05), NFI ($\Delta 1$) = 0.962, RFI ($\rho 1$) = 0.988, GFI = 0.979, TLI ($\rho 2$) = 1.000, CFI = 1.000, RMSEA = 0.000 (see Table 2). The model is depicted in Figure 1, and detailed path coefficients are presented in Table 4. The final model derived from SEM analysis revealed that four HBM constructs could predict 49% of the variance in drought adaptation behavior (Figure 2). This value indicates that the proposed models had moderate explanatory power. Hair et al. (2017) suggested that a model that only accesses R2 values is untrustworthy. Therefore, to evaluate the predictive relevance of the structural model, Stone (1974) introduced Q2. Latent exogenous constructs in the structural model have predictive relevance if the value of Q2 is more significant than zero (Chin, 2009). Q2 value of 0.56 was higher than zero, which means that endogenous constructs had enough predictive relevance.

Moreover, the result revealed that the most critical predictor of adaptive behavior was perceived benefits associated with implementing adaptation measures (β = 0.50, p < 0.000). Afterward, perceived barriers (β = 0.35, p < 0.001), self-efficacy (β = 0.34, p < 0.000), and perceived vulnerability (β = 0.20, p < 0.000). However, certain constructs, such as "cues to action" and "perceived severity," were not significant predictors of behavior (Figure 2). Table 3 provides the standardized factor loadings, R-square values, standardized beta coefficients, SMC, CR, and AVE.

Table 2. The indices of goodness of fit test.

Indices of the goodness of fits	Evaluation criteria of acceptable values of indices
χ^2/df= 0.941	Nonsignificant≥ 0.05 (Jöreskog and Sörbom, 1993)
CMIN/df= 1.43	< 2 (Hair et al., 1998)
NFI (Δ1)= 0.962	≥ 0.95 good , 0.90 to 0.95 acceptable (Bentler, 1990)
RFI (ρ1)= 0.988	> 0.90 (Bentler, 1992)
TLI (ρ2)= 1.000	≥ 0.95 Or ≥0.90 (Hu and Bentler, 1999; Weston and Gore, 2006)
CFI= 0.979	≥ 0.90 (Hu and Bentler, 1999; Weston and Gore, 2006)
RMSEA= 0.000	≤ 0.5: Very good fit (Browne and Cudeck, 1993; Kline, 2005)

Table 3. Measurement results.

Constructs	Factor Loading	R-square value	SMC	CR	AVE
PV (α = 0.85) (β = 0.0.20**)					
1. I believe that my relatives and I are vulnerable to the adverse effects of drought.	0.84	0.70	0.781		
2. I believe that drought can reduce my agricultural production.	0.79	0.62	0.744		
3. I believe that drought can reduce my income.	0.79	0.62	0.712	0.845	0.578
4. I believe the weather conditions (rainfall and temperature) have changed compared to the past.	0.70	0.49	0.824		
5. I believe that the availability of water for agriculture and even drinking has decreased.	0.79	0.62	0.767		
PS (α = 0.84) (β = 0.0.10)					
1. Drought has severely affected the water resources of our village.	0.75	0.56	0.818		
2. Drought has severely affected the environment and vegetation of our region.	0.76	0.57	0.767		
3. Drought causes irreparable damage to agricultural production and income.	0.77	0.59	0.798	0.766	0.537
4. Drought causes irreparable damage to the quality of my agricultural products.	0.81	0.65	0.845		
5. Drought causes irreparable damage to my property.	0.76	0.57	0.756		
PB (α = 0.83) (β = 0.0.50**)					
1. Adopting strategies to adapt to drought prevents water loss and the depletion of water resources.	0.73	0.53	0.713		
2. Adopting drought adaptation strategies will prevent the reduction of my crop production and income.	0.75	0.56	0.744		
3. Adopting strategies to adapt to drought will prevent migration and evacuation of villages.	0.76	0.57	0.860	0.712	0.580
4. Adopting strategies to adapt to drought will preserve agricultural production and food security.	0.82	0.67	0.798		
5. Adopting strategies to adapt to drought will preserve agricultural production and food security.	0.78	0.60	0.744		
PBR (α = 0.82) (β = 0.0.35**)					
1. I do not have sufficient financial resources to implement strategies for adapting to drought.	0.82	0.67	0.713		
2. I do not have the necessary knowledge and skills to implement drought adaptation strategies	0.72	0.51	0.706	0.824	0.651
3. I do not have adequate infrastructure to implement drought adaptation strategies.	0.79	0.62	0.768		
4. Appropriate and affordable tools and technology to implement drought adaptation solutions are unavailable.	0.75	0.56	0.722		

5. There is no necessary cooperation and participation among villagers to adapt to drought	0.72	0.51	0.703		
SE (α = 0.81) (β = 0.0.34**)					
1. In the face of drought, I have enough awareness and knowledge to implement adaptation strategies.	0.80	0.64	0.801		
2. In the face of drought, I possess the necessary experience and expertise to implement adaptation strategies.	0.74	0.54	0.764		
3. In the face of drought, I can implement drought adaptation strategies.	0.82	0.67	0.730	0.760	0.542
4. In the face of drought, I have enough motivation and energy to implement drought adaptation strategies	0.68	0.46	0.721		
5. In the face of drought, I have adequate financial resources to implement adaptation strategies.	0.72	0.51	0.733		
CA (α = 0.71) (β = 0.0.06)					
1. I have heard from my farmer family and friends about the risk of drought and strategies to adapt to it.	0.72	0.51	0.765		
2. I have received information from agricultural experts about the risks of drought and the relevant adaptation strategies.	0.56	0.31	0.721	0.751	0.579
3. I have heard about the risks of drought and adaptation strategies through local and national radio and television.	0.87	0.75	0.735		
4. I have heard about the risk of drought and drought adaptation solutions from cyberspace.	0.85	0.72	0.787		
Behavior (α = 0.90) (R^2 = 0.0.49**)					
1. Planting seeds and modified cultivars with high yield and drought resistance (less water requirement)	0.61	0.37	0.836		
2. Planting seeds deeper to absorb more moisture	0.74	0.54	0.750		
3. Changing the planting and harvesting dates according to weather conditions (planting earlier or later)	0.74	0.54	0.735		
4. Use crop rotation (wheat, barley, peas, alfalfa and other legumes).	0.80	0.64	0.768		
5. Insuring agricultural and livestock products	0.74	0.54	0.780		
6. Modifying the way to guide and transport water (turning earthen streams into concrete streams, using metal or polyethylene pipes to transport water)	0.71	0.50	0.812	0.812	0.545
7. Construction of pools and ponds to collect water	0.72	0.51	0.761		
8. Watering during the cool hours of the day (dusk, night, or early morning) for optimal results.	0.69	0.47	0.735		
9. Using new irrigation methods (drip, rain, and underground irrigation).	0.76	0.57	0.756		
10. Timely service and maintenance of equipment such as pump, filtration station, and other equipment installed in the farm	0.77	0.59	0.801		

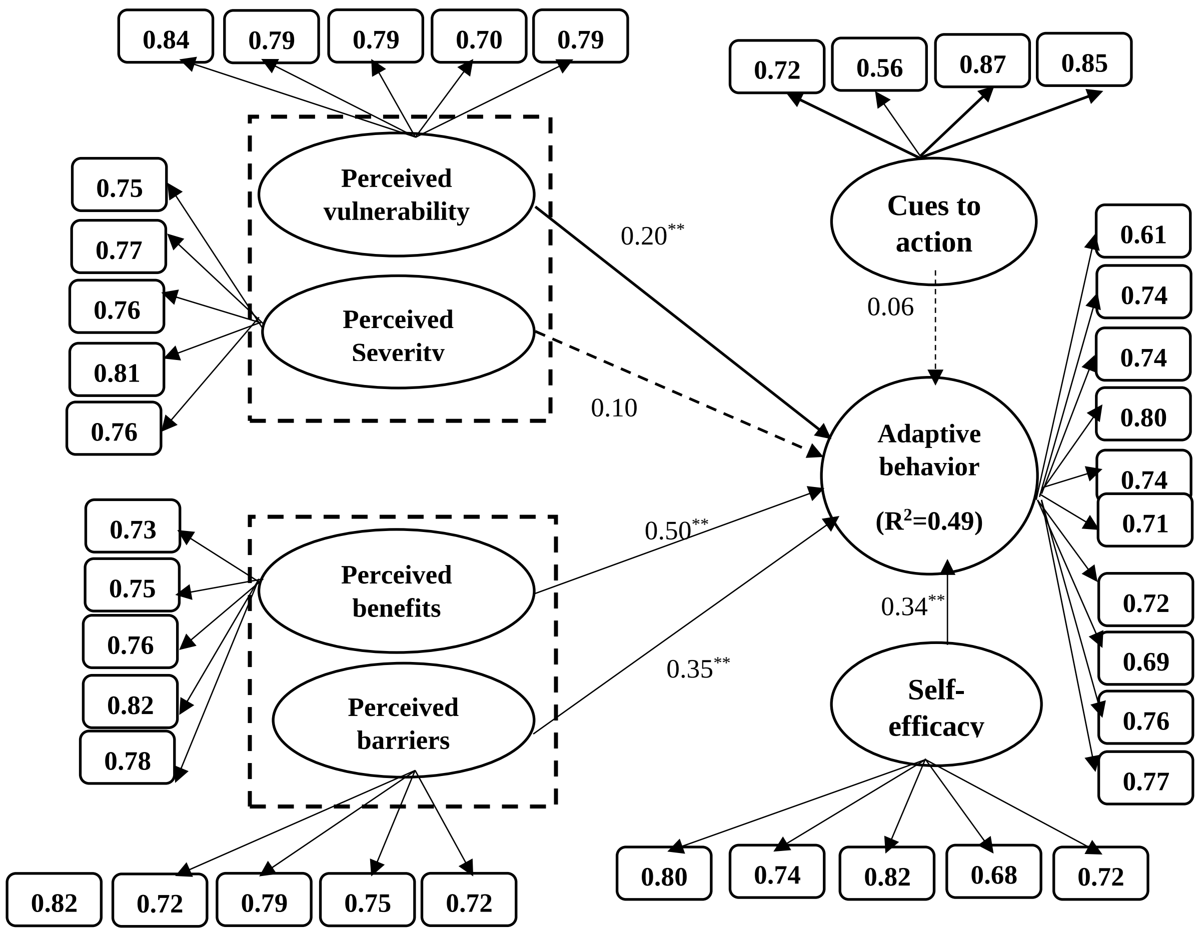

Figure 2. Structural path model (---------▸ Non-significant, *P< 0.05, **P< 0.01).

DISCUSSION

This study aimed to identify factors predicting drought adaptation behavior among farmers in Kohdasht Township, western Iran, using the Health Belief Model (HBM). To date, this is one of the first global studies to use the Health Belief Model (HBM) to predict farmers' water conservation behaviors. This study is among the first globally to apply the HBM in predicting farmers' water conservation behaviors. The findings revealed that 49% of the variance in farmers' adaptive behavior could be explained, confirming the model's predictive utility, as supported by previous studies (Tajeri Moghadam et al., 2020; Zobeidi et al., 2021; Yazdanpanah et al., 2022).

The results showed that perceived benefits had the most direct impact on adaptive behavior. Farmers were motivated by the belief that adaptation measures could conserve water, reduce crop losses, secure livelihoods, ensure community food security, and protect the environment. This aligns with studies in China, Sub-Saharan Africa, and Vietnam, where emphasizing economic and environmental benefits encouraged adaptation (Wong et al., 2021; Bagagnanet et al., 2019b; Luu et al., 2019). Governments and agricultural agencies should highlight these benefits through targeted campaigns to enhance adoption rates.

This study also found that perceived barriers significantly hindered drought adaptation behavior. These barriers include obstacles that may prevent a farmer from implementing adaptation measures, such as insufficient financial resources, limited knowledge, and skills to implement adaptation strategies, lack of necessary infrastructure, inappropriate tools and technology, and lack of cooperation and participation among farmers. This finding aligns with similar studies in Ethiopia (Gebrehiwot & van der Veen, 2020) and Nigeria (Von Abubakari *et al.*, 2024), where lack of resources and infrastructure were reported as key barriers. However, our results diverge from findings in high-income countries, such as Australia (McIlwain *et al.*, 2022), where institutional support mitigated the impact of perceived barriers. Implementing appropriate support policies and empowering farmers economically and through education can reduce these barriers and promote adaptive behaviors.

Self-efficacy is another significant predictor of farmers' adaptive behavior. Consistent with findings from Ethiopia (Gebrehiwot & van der Veen, 2020) and India (Mitter *et al.*, 2024), self-efficacy positively influences farmers' ability to adapt to drought by enhancing confidence in their skills and resources. However, this contrasts with results from Iran (Delfiyan *et al.*, 2020), where self-efficacy showed a weaker impact. Therefore, enhancing farmers' self-efficacy—by improving access to information, advancing technical skills, and increasing financial support through targeted subsidies and low-interest loans—should be a priority for agricultural sector planners in this Township.

Perceived vulnerability also significantly influenced behavior. Echoing findings from Vietnam and Sub-Saharan Africa, heightened awareness of risks motivated adaptive actions. In Kohdasht, drought and reduced rainfall have caused water shortages, decreased yields, unemployment, and migration. Raising awareness of these risks can encourage farmers to adopt adaptive measures (Luu et al., 2019; Bagagnan et al., 2019a). In conclusion, enhancing understanding of adaptation benefits, reducing barriers, building self-efficacy, and addressing vulnerability is essential for promoting drought adaptation behavior. These findings provide valuable insights for policymakers aiming to support sustainable farming in drought-prone regions.

The results revealed that perceived severity and cues to action did not significantly influence farmers' adaptation behavior to drought. This could stem from farmers not fully perceiving drought as a severe threat, especially if they have previously coped with droughts. Over time, they may view droughts as a natural part of farming or assume conditions will improve without intervention. External cues, such as weather forecasts or government warnings, may not reach farmers effectively or be distrusted. If advice seems irrelevant to local conditions, farmers may ignore it. Additionally, a lack of knowledge about drought-resistant practices or water management strategies can leave farmers uncertain how to adapt. Economic barriers, such as the high cost of adaptation measures like water conservation technologies or irrigation systems, further complicate the situation, especially for farmers with limited resources. Overcoming these challenges requires integrating approaches to address economic, psychological, social, and informational barriers. The study found that perceived benefits had the most significant impact on adaptation behavior. Agricultural extension services should emphasize the long-term benefits of adaptation, such as water conservation, crop resilience, and environmental sustainability. Outreach campaigns and workshops can raise awareness of these advantages. Policies must address financial barriers through subsidies, low-interest loans, or grants for adopting drought-resistant technologies. Improving farmers' confidence through tailored training, demonstrations, and mentorship can encourage adaptive behavior.

CONCLUSIONS

This research highlights the critical factors influencing drought adaptation behavior among farmers in western Iran, focusing on the Health Belief Model (HBM). The study found that HBM effectively predicts farmers' drought adaptation behaviors, explaining 49% of the variance in adaptive behavior. Perceived benefits emerged as the most significant predictor, indicating that when farmers recognize the individual and collective advantages of adaptation measures—such as protecting water resources, maintaining livelihoods, and ensuring food security—they are more likely to adopt these behaviors. However, perceived barriers, including financial constraints, limited knowledge, inadequate infrastructure, and lack of cooperation, significantly hinder adaptation efforts. The study underscores the importance of supportive policies and educational programs to empower farmers economically and enhance their technical skills, thereby reducing barriers and increasing adaptive behaviors. Additionally, the positive impact of perceived vulnerability on adaptation behavior suggests that raising awareness of drought-related damages can further motivate farmers to implement adaptive strategies. Overall, the findings emphasize the need for targeted interventions that address the perceived benefits and barriers to foster widespread adoption of drought adaptation behaviors among farmers.

LIMITATIONS

This study has several limitations that need future consideration. First, reliance on self-reported data may introduce subjectivity; mixed-method approaches combining surveys with objective measures like drought data are recommended. Second, the HBM overlooks social norms and cultural values; incorporating constructs from Social Cognitive Theory or ethnographic studies could address this gap. Third, the HBM focuses on short-term decisions, necessitating longitudinal studies to explore sustainable adaptation behaviors. Fourth, factors like institutional trust and technical knowledge access should be integrated into the model. Lastly, context-specific findings require comparative studies across diverse regions to enhance generalizability.

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درک رفتار سازگاری کشاورزان در برابر خشکسالی: کاربرد مدل اعتقاد بهداشتی

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چکیده

همانطور که تغییرات آب و هوایی فراوانی و شدت خشکسالی ها را تشدید می کند، رفتار انطباقی به طور فزاینده ای حیاتی می شود. ظرفیت کشاورزان برای اصلاح شیوه های خود در پاسخ به شرایط آب و هوایی در حال تحول برای تضمین پایداری کشاورزی بلندمدت و امنیت غذایی حیاتی است. لذا این مطالعه با هدف بررسی عوامل روانشناختی مؤثر بر رفتارهای سازگاری کشاورزان در پاسخ به خشکسالی با استفاده از مدل اعتقاد بهداشتی انجام شد. نمونه شامل 380 کشاورز از شهرستان کوهدشت استان لرستان و غرب ایران بود که به روش نمونه گیری خوشه ای سه مرحله ای انتخاب شدند. داده ها با استفاده از پرسشنامه محقق ساخته جمع آوری شد که روایی و پایایی آن تایید شد. نتایج مدل‌سازی معادلات ساختاری (SEM) نشان داد که خودکارآمدی، مزایای درک‌شده، آسیب‌پذیری درک‌شده و موانع درک‌شده حدود 49 درصد از واریانس رفتار سازگاری کشاورزان را توضیح می‌دهند. مزایای درک شده به عنوان قوی ترین پیش بینی کننده سازگاری ظاهر شد، در حالی که نشانه های عمل و شدت درک شده ناچیز بود. این یافته ها از کاربردی بودن و کارایی مدل اعتقاد بهداشتی در بررسی رفتار صرفه جویی در مصرف آب در بین کشاورزان ایرانی حمایت می کند.