

## Designing a Model of Planned Management Behavior for Consequences of Climate Change in Iran's Agriculture

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### Abstract

Climate change in Iran in recent years has caused a decrease in rainfall and an increase in temperature and continuous droughts. Agricultural production in Iran has been affected by climate change and has faced a decrease in the production of various products. Therefore, it is necessary to use strategies for managing the consequences of climate change. The purpose of this research was to designing a model of planned management behavior (MPMB) for consequences of climate change in Iran's Agriculture. A mixed method was used in this research. The study sample of qualitative phase included 25 key experts and in the quantitative section, there were 100 experts. Based on the qualitative results, the consequences of climate change were identified. In the quantitative phase, it was determined that 69.3% of attitude towards the consequences of climate changes are explained by the concerns about social, economic and environmental consequences, feeling the need for risk management, and perceived value. Also, 71.2% of changes in planned management intention to control the consequences are affected by the attitude towards the consequences, tendency to control behavior, personal and mental norms. Finally, 69.8% of changes in PMB for control the consequences of climate changes are caused by the use of planned management intention to control the consequences, action planning and coping planning. The results of this research will make a significant contribution to planned management to control the consequences of climate change in the agriculture sector and pave the way for future research in the field of controlling the consequences of climate change.

**Keywords:** Attitude, Climate Change, Khuzestan, Planned Management Behavior.

### Introduction:

Climate change is a phenomenon that is happening in most parts of the world, including Iran (Karimi et al., 2018). This phenomenon has very wide consequences. As one of the biggest

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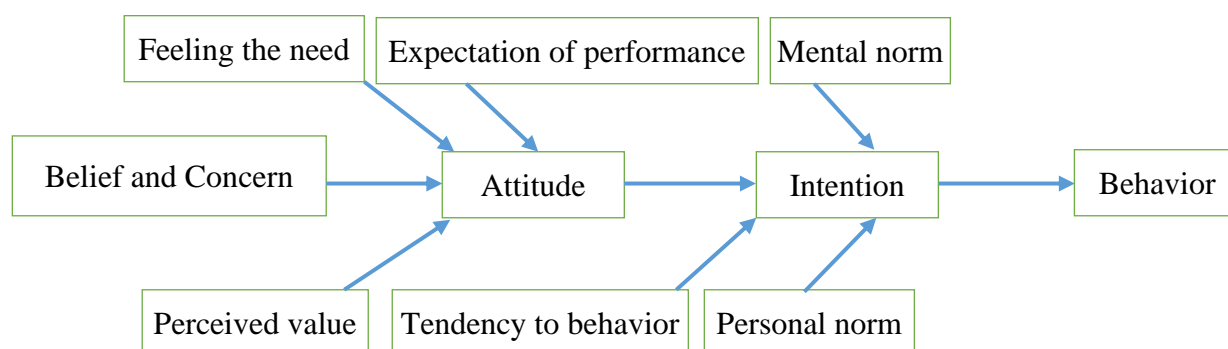
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global challenges, climate change has wide-ranging effects on different parts of human life (Ghalibaf et al., 2023). Among the sectors that are directly affected by these changes are agriculture and food security (Rajabalinejad et al., 2024). Considering the importance of these issues, investigating the effects of climate change on agriculture and food security is of particular importance. The increase of greenhouse gases, mainly carbon dioxide gas, increase in temperature and decrease in precipitation are among the components of climate change that have had destructive effects on the agricultural sector (Karimi et al., 2018). This alarming phenomenon will change the performance of crops and overall production in the agricultural sector in the future (Vathaghi and Ismaili, 2008). Knowing the social, economic and environmental consequences of this sinister phenomenon is very important. Based on the results of the study by Malkoutikhah and Farajzadeh (2019), it was found that fluctuations or differences from the average of temperature and rainfall variables have a significant effect on the production of the agricultural sector. Also, the results of the research of Vathaghi and Ismaili (2008) showed that the increase in temperature and decrease in rainfall until the next 100 years (due to the increase in greenhouse gas emissions) will cause a 41% decrease in the yield of wheat cultivation in Iran. The effect of climate change on the agricultural sector is more than all other sectors (Karimi et al., 2018). Therefore, the necessity of increasing food security along with reducing the risks of climate change requires a transition to a system of agricultural production that has higher productivity, more efficiency per unit of input consumption, higher flexibility to long-term changes and stable against risks and turbulences (Hertel and Lobell, 2014). More productive and sustainable agriculture seeks to make changes in the use of land, water, nutrients, soil and genetic resources in order to improve the productivity of these resources (Mansouri Daneshvar et al., 2019). Obviously, achieving such a system will require significant changes in national and local policies and mechanisms (Thornton, 2014). Several models are used regarding technology acceptance and behavior prediction in different fields. In this research, the theoretical framework of the research is based on the Theory of Planned Behavior (TPB) and Belief and Concern Theory (Bamberg, 2003 and Ajzen, 2005). TPA assumes that a person's behavioral intention is predicted by three key components: attitude toward the behavior, mental norms, and perceived behavioral control. These three predictors significantly cooperate to explain behavioral intention in a range of behavioral domains. Bamberg, 2003 also points to belief and concerns. Based on them, the theoretical framework of the research is shown in Figure 1. The novelty of this research is that no research has been conducted in the study area on planned management behavior in the field

of managing the consequences of climate change in the agricultural sector. Therefore, conducting this research will greatly contribute to completing the body of knowledge in this field. The phenomenon of climate change and the spread of dust in the areas that have encountered it have resulted in a 20 to 30 percent decrease in the quantity and quality of agricultural products. According to a report by the Ministry of Agricultural Jihad, climate change has caused 200 trillion tomans, equivalent to 2 billion and 757 million dollars (\$1 = 70 thousand tomans) within a year, to damage the agricultural sector of Iran (Mehr News Agency, 2024). In previous research, none of them had addressed the identification of the consequences of climate change on the agricultural sector through a qualitative method. In addition, none of them had paid any attention to designing a planned management behavior model to control the consequences of climate change.

The research objectives as followed:

- 1) Identifying consequences of climate change in agriculture sector.
- 2) Identifying factors affected on attitude towards social, economic and environmental consequences of climate change.
- 3) Identifying factors affected on planned management intention of controlling consequences of climate change.
- 4) Identifying factors affected on the behavior of planned management of consequences control of climate change.

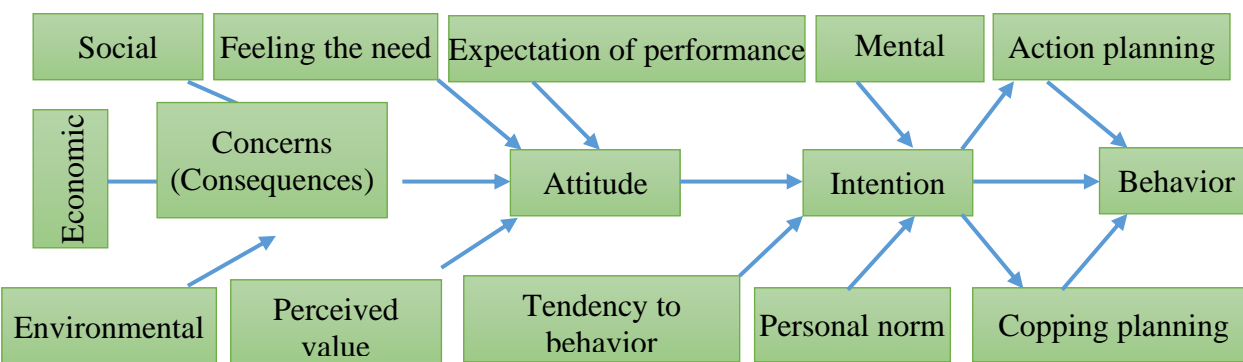


**Figure 1.** Theoretical model of the research.

## Methodology

This research is an applied and non-experimental type of research. In this research, two qualitative and quantitative paradigms have been used. The purpose of this research is to identify the consequences of climate change and designing a model that controls the consequences through planned behavioral management. The research plan consists of two parts, in the first stage, the qualitative paradigm is used ( $n_1=25$ ), and in the second stage, the

quantitative paradigm is used ( $n_2 = 100$ ). In the qualitative research paradigm, interviews with experts and brainstorming were used, and in the second stage, in the quantitative research paradigm, the descriptive research method and the structural equation model were used. Face-to-face interviews and brainstorming methods were used to extract concepts, subcategories and categories in the qualitative part. The study sample of this research in the qualitative phase included key experts who have knowledge of the consequences of climate change in Khuzestan province, which included: 10 university faculty members and 15 agricultural managers. Qualitative data collection continued until theoretical saturation was reached. The analysis steps in the qualitative section include three types of coding (open coding, axial coding and selective coding). The statistical population in the quantitative part included the experts of agricultural Jihad of Khuzestan province. The number of statistical sample was considered to be 100 people according to Morgan's table. In order to validate the presented model, confirmatory factor analysis has been used in the framework of the structural equation model. Smart PLS3 software was used for quantitative statistical analysis. Based on the theoretical framework (Bamberg, 2003 and Ajzen, 2005) of the research and based on the opinion of the experts, the conceptual framework of the research was designed, which is presented in Figure 2.



**Figure 2.** Conceptual model of the research.

Based on the conceptual model of the research, the hypotheses of the research are:

H1: Understanding the social consequences has a significant effect on the attitude towards the consequences.

H2: Understanding the economic consequences has a significant effect on the attitude towards the consequences.

H3: Understanding the environmental consequences has a significant effect on the attitude towards the consequences.

H4: Feeling the need for risk management has a significant effect on the attitude towards social, economic and environmental consequences.

H5: The perceived value has a significant effect on the attitude towards social, economic and environmental consequences.

H6: Expectation of performance has a significant effect on attitude towards social, economic and environmental consequences.

H7: The attitude towards social, economic and environmental consequences has a significant effect on the planned management intention to control the consequences.

H8: The tendency to control behavior has a significant effect on the planned management intention to control the consequences.

H9: Personal norm has a significant effect on planned management intention to control consequences.

H10: Mental norm has a significant effect on planned management intention of controlling consequences.

H11: The intention of planned management of consequences control has a significant effect on the behavior of planned management of consequences control.

H12: The intention of planned management of consequences control has a significant effect on the action planning of applying the planned management of consequences control of climate change.

H13: The intention of planned management of consequences control has a significant effect on the coping planning of planned management of consequences control of climate change.

H14: The action planning of applying the planned management of consequences control has a significant effect on the behavior of the planned management of consequences control.

H15: The coping planning of planned management of consequences control has a significant effect on the behavior of planned management of consequences control.

## Results and Discussion

### Results

#### Identifying the social, economic and environmental consequences of climate change

In this research, in order to designing a Model of Planned Management Behavior (MPMB), identifying the social, economic and environmental consequences of climate change through semi structured and face-to-face interview methods and a brainstorming with a grounded theory approach was considered. The study sample of this research in the qualitative phase included

key experts who have knowledge of the consequences of climate change in Khuzestan province, which included: 10 university faculty members and 15 agricultural managers. For this purpose, Strauss and Corbin coding method was used to achieve specific goals (Strauss & Corbin, 1998). The current research included 25 in-depth interviews with experts and holding a brainstorming. The duration of the interviews was from 25 to 50 minutes and the brainstorming time was 200 minutes in two sessions. A total of 890 minutes of interviews were conducted. As a result, 71 concepts (initial codes) were expressed, and a total of 17 subcategories were extracted.

#### **Identifying social consequences of climate change**

A systematic process of coding was used to conduct a qualitative study. This qualitative study was conducted in the form of 3 stages of open coding, axial coding and selective coding using MAXQDA12 software.

#### **Open coding**

In the open coding phase, experts' statements about social consequences of climate change were analyzed and concepts were extracted from them. The results of the interview and the brainstorming session were identified and extracted in the form of 41 concepts. First, the main sentences under the title of concepts were extracted from direct quotes that had at least 5 repetitions, and by combining similar concepts, 29 final concepts were identified and coded with the number of repetitions. Each of the codes was indicated by an S symbol. The results of open coding are shown in Table 1.

**Table 1.** Conceptualization of data obtained from experts' answers for social consequences of climate change (open coding).

Concepts (Initial Codes)	Code
The fields of agricultural employment have disappeared.	S1
The population working in the agricultural sector has decreased.	S2
Youth unemployment has increased.	S3
Immigration has increased and marginalization has grown.	S4
Life expectancy has decreased.	S5
Security problems have increased.	S6
Poverty has spread.	S7
Social welfare has decreased.	S8
Crime and theft have increased.	S9
Mental and psychological tensions, anger and frustration have appeared.	S10
Rural society has lost its freshness.	S11
Conflicts and ethnic and religious conflicts have increased.	S12
Self-confidence and productive motivations have decreased.	S13
The trading process has been disrupted.	S14
The desire for non-productive businesses and mediation has increased.	S15
Agriculture-related industries have been damaged.	S16
Public and collaborative works in villages have decreased.	S17
Local institutions and organizations have weakened.	S18
Ecotourism areas in the village have been destroyed.	S19
The income from tourism has decreased.	S20
Diseases and malnutrition have increased.	S21
The general health of the society has decreased.	S22
Self-reliance, independence and human dignity have disappeared.	S23
The style of dressing, food and rural techniques have disappeared.	S24
Increasing dissatisfaction and pessimism towards government support policies.	S25
The social values of the traditional beliefs and opinions have changed.	S26
The cohesion of rural and nomadic households has been broken.	S27
Family visits have decreased.	S28
Food security has decreased.	S29

**Axial coding**

In this step, the number of repetitions of concepts was determined and subcategories were extracted. Based on the results of the axial coding of social consequences, 8 subcategories were determined in the form of 29 concepts and with 296 repetitions (Table 2).

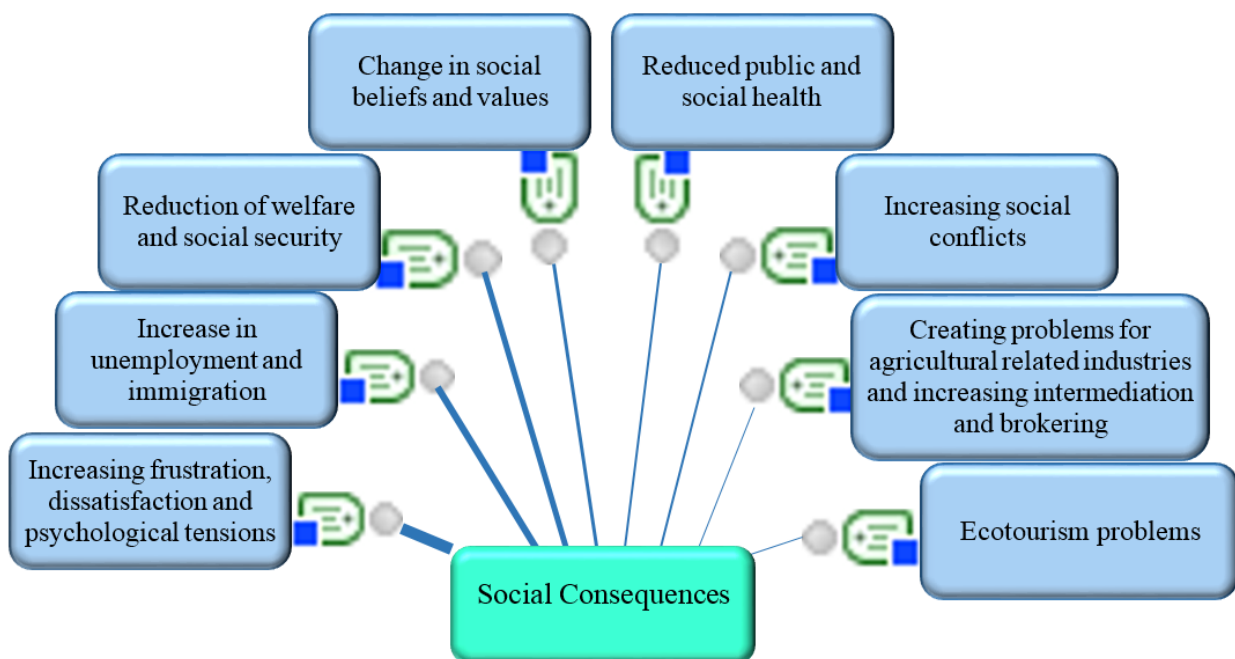


**Table 2.** Subcategories extracted from the concepts of social consequences.

Category	Subcategories	Concepts code	Repetitions
Social Consequences	Increase in unemployment and immigration	S1, S2, S3, S4	11, 15, 10, 9
	Reduction of welfare and social security	S6, S7, S8, S9	10, 8, 11, 13
	Increasing frustration, dissatisfaction and psychological tensions	S5, S10, S11, S13, S23, S25	8, 7, 11, 10, 9, 7
	Creating problems for agricultural related industries and increasing intermediation and brokering	S14, S15, S16	8, 9, 11
	Increasing social conflicts	S12, S17, S18	10, 11, 9
	Change in social beliefs and values	S24, S26, S27, S28	9, 11, 10, 8
	Reduced public and social health	S21, S22, S29	12, 15, 8
	Ecotourism problems	S19, S20	10, 9, 7

**Selective coding**

In selective coding, the intensity of the relationship between sub-categories and categories was determined based on the repetition of concepts in the form of a diagram. Figure 3 shows that, increasing frustration, dissatisfaction and psychological tensions, increase in unemployment and immigration, reduction of welfare and social security, change in social beliefs and values, reduced public and social health, increasing social conflicts, creating problems for agricultural related industries and increasing intermediation and brokering and ecotourism problems are, based on priority, the most important social consequences of climate change.

**Figure 3.** Social consequences of climate change.



**Identifying economic consequences of climate change****Open coding**

The results of the interview and the brainstorming session were identified and extracted in the form of 36 concepts. First, the main sentences under the title of concepts were extracted from direct quotes that had at least 5 repetitions, and by combining similar concepts, 24 final concepts were identified and coded with the number of repetitions. Each of the codes was indicated by an E symbol. The results of open coding are shown in Table 3.

**Table 3.** Conceptualization of data obtained from experts' answers for economic consequences of climate change (open coding).

Concepts (Initial Codes)	Code
Decrease in income	E1
Decrease in purchasing power	E2
Increase in the price of agricultural products	E3
Reducing the amount of investment in product production	E4
Decrease in financial ability to repay loans	E5
Reducing the ability to guarantee loans	E6
Increase in production costs	E7
Reducing the production of products	E8
Fodder becoming more expensive in region	E9
Changing the occupation of farmers	E10
Reducing the number of livestock	E11
Reducing the financial ability of farmers in providing the necessities of life	E12
Increasing migration of villagers due to economic problems	E13
Reduction of productivity	E14
Reducing the performance of products	E15
Increasing seasonal and permanent unemployment of farmers	S16
Reduction of production efficiency	S17
Increase in the price of agricultural tools	E18
Reducing the productivity of agricultural land	E19
Reduction of production capacity	E20
Failure to cultivate various crops in the year	E21
Reduction of livestock production	E22
Reduction of water resources	E23
Reduction of financial support facilities	E24

**Axial coding**

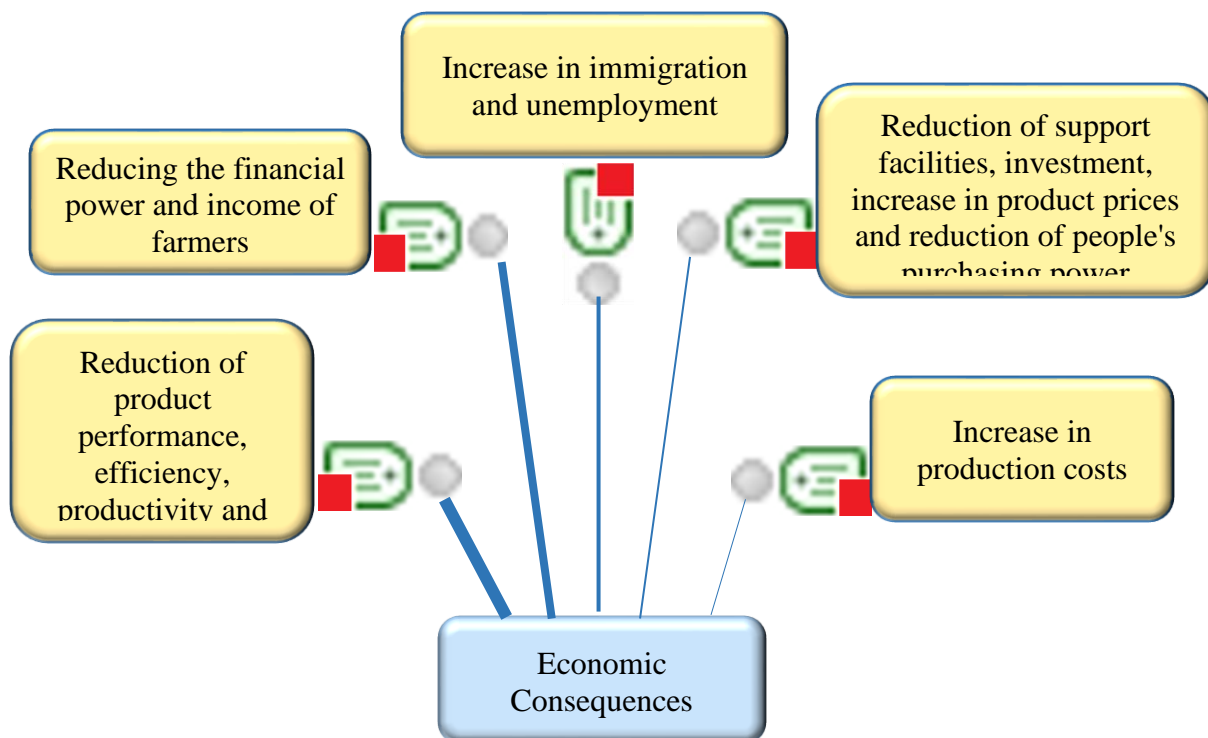
In this step, the number of repetitions of concepts was determined and subcategories were extracted. Based on the results of the axial coding of economic consequences, 5 subcategories were determined in the form of 24 concepts and with 301 repetitions (Table 4).

**Table 4.** Subcategories extracted from the concepts of economic consequences.

Category	Subcategories	Concepts code	Repetitions
Economic Consequences	Reducing the financial power and income of farmers	E1, E2, E5, E6, E12	11, 9, 13, 15, 14
	Increase in production costs	E7, E9, E18	14, 8, 15
	Reduction of product performance, efficiency, productivity and production capacity	E8, E11, E14, E15, E17, E19, E20, E21, E22, E23	9, 12, 11, 14, 12, 11, 10, 15, 8, 10
	Reduction of support facilities, investment, increase in product prices and reduction of people's purchasing power	E3, E4, E24	14, 12, 18
	Increase in immigration and unemployment	E10, E13, E16	12, 15, 19

**Selective coding**

Figure 4 shows that, reduction of product performance, efficiency, productivity and production capacity, reducing the financial power and income of farmers, increase in immigration and unemployment, reduction of support facilities, investment and increase in product prices and reduction of people's purchasing power and increase in production costs are, based on priority, the most important economic consequences of climate change.

**Figure 4.** Economic consequences of climate change.

**Identifying environmental consequences of climate change****Open coding**

The results of the interview and the brainstorming session were identified and extracted in the form of 28 concepts. First, the main sentences under the title of concepts were extracted from direct quotes that had at least 5 repetitions, and by combining similar concepts, 18 final concepts were identified and coded with the number of repetitions. Each of the codes was indicated by an N symbol. The results of open coding are shown in Table 5.

**Table 5.** Conceptualization of data obtained from experts' answers for environmental consequences of climate change (open coding).

Concepts (Initial Codes)	Code
Lowering of underground water, wells and aqueducts	N1
Drying of surface water such as springs	N2
The spread of pests and diseases to garden and agricultural products	N3
Reduction of farmers' rights	N4
Increase in dust and air pollution	N5
Soil erosion and destruction	N6
Reduction of vegetation and loss of pastures	N7
Conversion of agricultural and pasture lands to barren lands	N8
Saltiness and bitterness of water	N9
Increase in the attack of beasts on the village environment	N10
Pollution of underground water sources	N11
soil pollution	N12
Destruction of soil microorganisms	N13
Destruction of forests	N14
Extinction of some animal species	N15
Extinction of some plant species	N16
Reliance on chemical inputs	N17
Pollution of rivers	N18

**Axial coding**

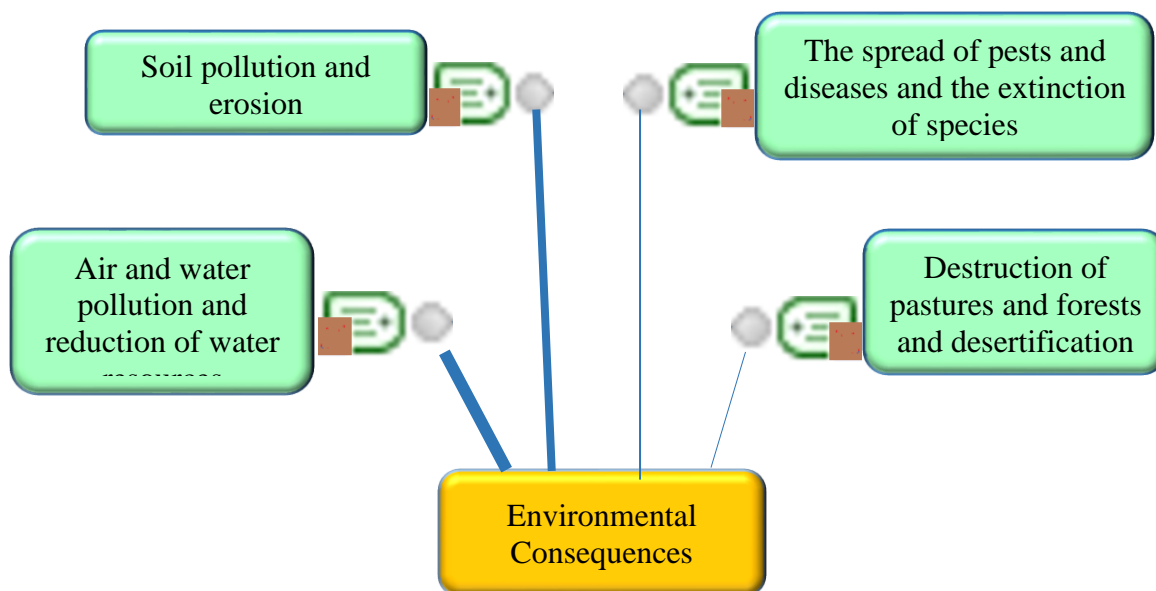
In this step, the number of repetitions of concepts was determined and subcategories were extracted. Based on the results of the axial coding of economic consequences, 4 subcategories were determined in the form of 18 concepts and with 216 repetitions (Table 6).

**Table 6.** Subcategories extracted from the concepts of environmental consequences.

Category	Subcategories	Concepts code	Repetitions
Environmental Consequences	Air and water pollution and reduction of water resources	N1, N2, N4, N5, N9, N11, N18	14, 11, 12, 15, 13, 8, 11
	Soil pollution and erosion	N6, N12, N13, N17	12, 15, 12, 8
	Destruction of pastures and forests and desertification	N7, N8, N14,	10, 15, 14
	The spread of pests and diseases and the extinction of species	N3, N10, N15, N16	10, 9, 13, 14

### Selective coding

Figure 5 shows that, air and water pollution and reduction of water resources, soil pollution and erosion, the spread of pests and diseases and the extinction of species, destruction of pastures and forests and desertification are, based on priority, the most important environmental consequences of climate change.



**Figure 5.** Environmental consequences of climate change.

### Research model test (PMB model for climate change management)

To test the research model and hypotheses, the SEM was used using Smart PLS<sub>3</sub> software. The fit of the structural model was also evaluated using  $R^2$ ,  $Q^2$  and GOF criteria. According to the results of Table 7, the fit criteria had acceptable amount.

Table 7.  $R^2$ ,  $Q^2$  and GOF amount for fitting the outcomes model.

Construct	$R^2$	$Q^2$	GOF
PMB	0.837	0.721	0.731

Next, the research hypotheses were tested. The way to decide to reject or confirm the hypotheses is to compare the t-value with the numbers +1.96 and -1.96. If the calculated values are between these two values, the desired hypothesis is rejected, and if it is not, the hypothesis is confirmed. The results of the hypothesis test are presented in Table 8 and the final research model is presented in Figures 6 and 7.

The results of table 8 showed that understanding the social consequences ( $\beta=0.61$ ), economic consequences ( $\beta=0.72$ ), environmental consequences ( $\beta=0.58$ ), feeling the need for risk

management ( $\beta=0.62$ ), perceived value ( $\beta=0.61$ ) and expectation of performance ( $\beta=0.67$ ) had a positive and significant effect on attitude towards the consequences of climate changes. Also attitude towards the consequences of climate changes ( $\beta=0.58$ ), tendency to control behavior ( $\beta=0.74$ ), personal norm ( $\beta=0.49$ ) and mental norm ( $\beta=0.69$ ) had a positive and significant effect on planned management intention to control the consequences of climate changes. In addition, intention of planned management ( $\beta=0.73$ ), action planning ( $\beta=0.64$ ) and coping planning ( $\beta=0.61$ ) had a positive and significant effect on PMB.

**Table 8.** The results of the research hypotheses test

Hypotheses	Independent	Dependent	Path coefficient	t-value	R <sup>2</sup>	Test results
H1	Understanding the social consequences	Attitude	0.61	3.82	0.39	Confirmed
H2	Understanding the economic consequences	Attitude	0.72	4.51	0.53	Confirmed
H3	Understanding the environmental consequences	Attitude	0.58	5.27	0.31	Confirmed
H4	Feeling the need for risk management	Attitude	0.62	3.54	0.38	Confirmed
H5	Perceived value	Attitude	0.61	3.45	0.35	Confirmed
H6	Expectation of performance	Attitude	0.67	3.12	0.45	Confirmed
H7	Attitude	Planned management intention	0.58	3.09	0.31	Confirmed
H8	Tendency to control behavior	Planned management intention	0.74	3.29	0.55	Confirmed
H9	Personal norm	Planned management intention	0.49	3.99	0.28	Confirmed
H10	Mental norm	Planned management intention	0.69	3.87	0.47	Confirmed
H11	Planned management intention	Action planning	0.72	3.44	0.53	Confirmed
H12	Planned management intention	Coping planning	0.45	3.29	0.25	Confirmed
H13	Intention of planned management	PMB	0.73	3.48	0.54	Confirmed
H14	Action planning	PMB	0.64	3.88	0.39	Confirmed
H15	Coping planning	PMB	0.61	3.71	0.35	Confirmed

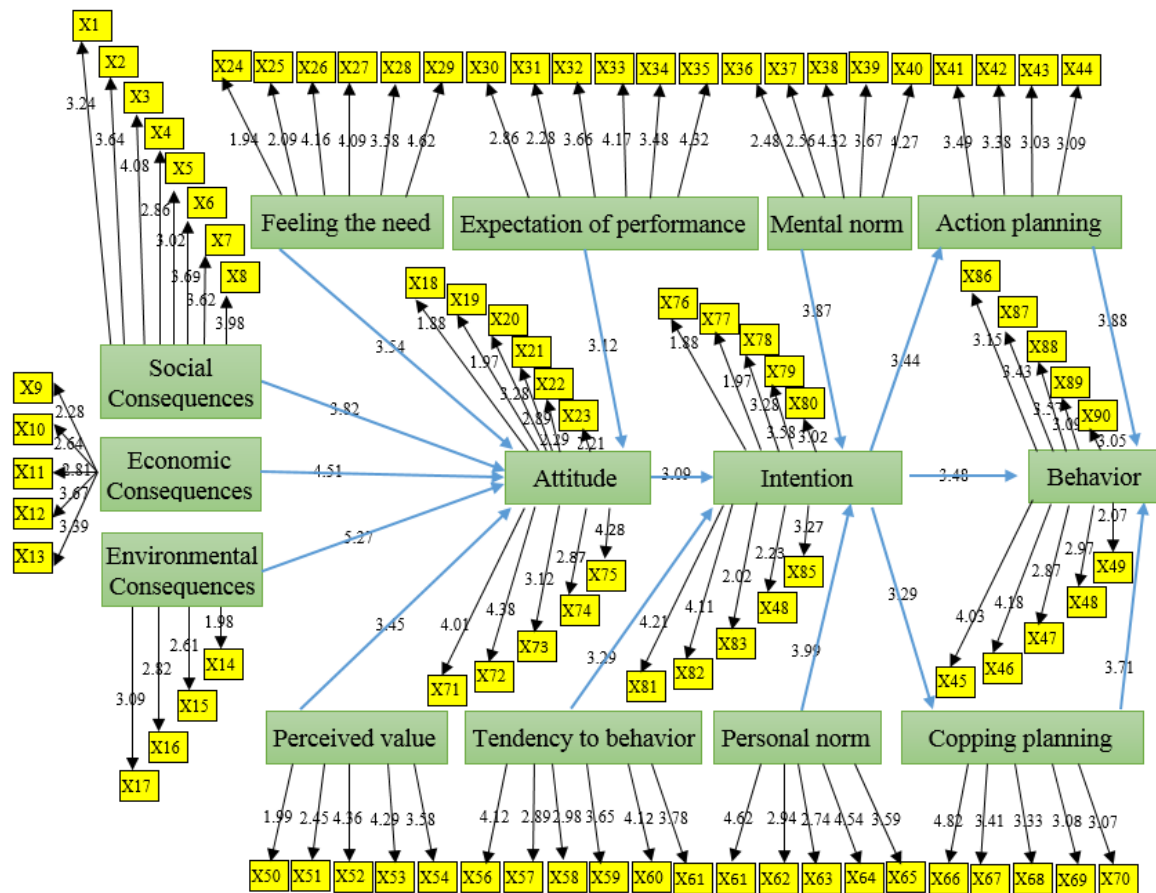
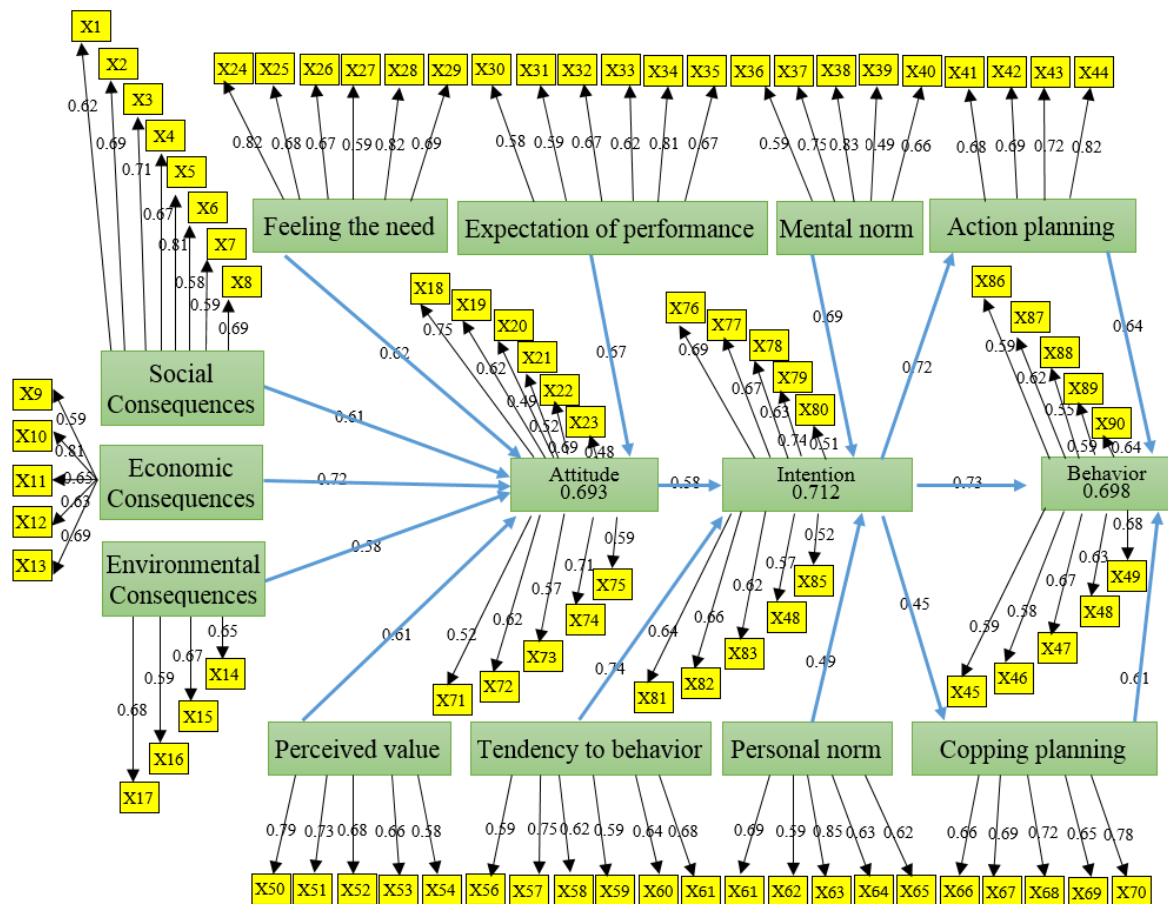


Figure 6. t-Values for relationships between factors and variables of PMB causal model.



**Figure 7.** The values of the standardized loadings for each of the factors and variables of the PMB causal model

Based on the results of Figure 6, which is the output of Smart PLS3 software, it can be stated that 69.3% of attitude towards the consequences of climate changes are explained by the independent variables of social, economic and environmental consequences, feeling the need for risk management, and perceived value. Also, 71.2% of changes in planned management intention to control the consequences of climate changes are affected by the attitude towards the consequences, tendency to control behavior, personal and mental norms, and finally 69.8% of changes in PMB of control the consequences of climate changes are caused by the use of planned management intention to control the consequences, action planning and coping planning.

## Discussion

According to the results of the research, the first hypothesis "understanding the social, economic and environmental consequences have a significant effect on the attitude towards the consequences" is confirmed. This finding is consistent with the results of Chaudhary and Bisai



(2018) and Felicilda-Reynaldo et al., (2018). In fact, as people's understanding of the consequences increases, their attitude will change. Improving knowledge and information is very effective in improving people's understanding.

According to the results of the research, the second hypothesis "feeling the need for risk management has a significant effect on the attitude towards social, economic and environmental consequences" is confirmed. This finding is consistent with the results of Hillson and Murray-Webster (2006) and Wang and Yuan (2011). The consequences of climate change are an important risk that affects the agricultural sector. Sensing the need for risk management will lead to improved perceptions and a favorable attitude towards adopting management strategies to control the consequences of climate change.

According to the results of the research, the third hypothesis "the perceived value has a significant effect on the attitude towards social, economic and environmental consequences" is confirmed. This finding is consistent with the results of Hassan et al., (2022). Understanding the economic, social and environmental value of controlling the consequences of climate change in the agricultural sector is effective in creating the necessary grounds for optimizing individuals' attitudes in carrying out planned management actions.

According to the results of the research, the fourth hypothesis "the expectation of performance has a significant effect on attitude towards social, economic and environmental consequences." is confirmed. This finding is consistent with the results of Collado & Evans (2019). According to the results of the research, the fifth hypothesis "the attitude towards social, economic and environmental consequences has a significant effect on the planned management intention to control the consequences." is confirmed. This finding is consistent with the results of Kwistianus et al., (2020) and Moon (2021). According to the results of the research, the sixth hypothesis "the tendency to control behavior has a significant effect on the planned management intention to control the consequences." is confirmed. This finding is consistent with the results of Ahmed et al., (2021) and Close et al., (2018).

According to the results of the research, the seventh hypothesis "the personal norm has a significant effect on planned management intention to control consequences." is confirmed. This finding is consistent with the results of Roos & Hahn (2019). According to the results of the research, the eighth hypothesis "the mental norm has a significant effect on planned management intention of controlling consequences." is confirmed. This finding is consistent with the results of Ateş (2020).

According to the results of the research, the ninth hypothesis “the intention of planned management of consequences control has a significant effect on the behavior of planned management of consequences control.” is confirmed. This finding is consistent with the results of Trivedi et al., (2018) and Sun et al., (2018). According to the results of the research, the tenth hypothesis “the intention of planned management of consequences control has a significant effect on the action planning of applying the planned management of consequences control of climate change.” is confirmed. This finding is consistent with the results of Brown et al., (2018).

According to the results of the research, the eleventh hypothesis “the intention of planned management of consequences control has a significant effect on the coping planning of planned management of consequences control of climate change.” is confirmed. This finding is consistent with the results of Strong et al., (2018). According to the results of the research, the twelfth hypothesis “the action planning of applying the planned management of consequences control has a significant effect on the behavior of the planned management of consequences control.” is confirmed. This finding is consistent with the results of Brown et al., (2018) and Strong et al., (2018).

According to the results of the research, the thirteenth hypothesis “the coping planning of planned management of consequences control has a significant effect on the behavior of planned management of consequences control.” is confirmed. This finding is consistent with the results of Brown et al., (2018) and Strong et al., (2018). Policymakers need to benefit from the participation of users to achieve desired results. Therefore, policymakers can use the results of this research to control the consequences of climate change on the agricultural sector.

According to the objectives of this research and the identified results, it is possible to identify the consequences of climate change in the agriculture sector. Also, factors affected on attitude towards social, economic and environmental consequences of climate change can be understood. Next, factors affected on planned management intention of controlling consequences of climate change were analyzed and factors affected on the behavior of planned management of consequences control of climate change and in this way, necessary policymaking was planned to manage the consequences of climate change.

## Conclusions

Based on the results, it was found that feeling the need for risk management has a significant effect on the attitude towards social, economic and environmental consequences. Therefore, it

is recommended to increase the awareness of the audience regarding risk management mechanisms. The findings showed that the perceived value of strategies to control the effects of climate change has a significant impact on the attitude towards social, economic and environmental consequences, so it is recommended to take necessary measures to increase the understanding of the value of strategies to control climate change. Expectation of performance has a significant effect on attitude towards social, economic and environmental consequences, therefore it is recommended to take the necessary measures to increase the expectations of the users of their performance by holding training and extension classes. Also, the attitude towards consequences has a significant effect on the planned management intention to control the consequences. Therefore, it is recommended to take the necessary measures to optimize the attitude of farmers in the field of strategies to control the effects of climate change. Further, the tendency to control behavior has a significant effect on the planned management intention to control the consequences. Therefore, it is recommended to improve the tendency of farmers to control behavior by holding motivational and participatory courses. Also, the personal norm has a significant effect on planned management intention to control consequences. Therefore, it is recommended to distribute brochures, tracts and announcements warning about the effects of climate change among farmers. Based on the findings, the mental norm has a significant effect on planned management intention of controlling consequences. The research results showed that the intention of planned management of consequences control has a significant effect on the behavior of planned management of consequences control. It is suggested that the necessary incentives by the government for farmers to use strategies to control the consequences of climate change. This research provides valuable assistance to planners, policy makers and farmers in completing the existing gap for PMB development. In this research, to identify the consequences of climate change, the status of the users' attitude and the factors affecting it in this regard, planned management intention and the factors affecting it and finally Planned management behavior, and the effects of attitude on intention and the effects of intention on the occurrence of behavior were identified. The application of these results on the emergence of planned behavior to control the consequences of climate change will be very important and vital.

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### طراحی الگوی رفتار مدیریت برنامه ریزی شده برای پیامدهای تغییر اقلیم در کشاورزی ایران

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#### چکیده

تغییر اقلیم ایران در سال های اخیر باعث کاهش بارندگی و افزایش دما و خشکسالی های مداوم شده است. تولیدات کشاورزی در ایران تحت تأثیر تغییرات اقلیمی قرار گرفته و با کاهش تولید محصولات مختلف مواجه شده است. بنابراین استفاده از راهکارهایی برای مدیریت پیامدهای تغییرات اقلیمی ضروری است. هدف از این تحقیق طراحی مدل رفتار مدیریت برنامه ریزی شده (MPMB) برای پیامدهای تغییر اقلیم در کشاورزی ایران بود. در این تحقیق از روش ترکیبی استفاده شد. نمونه پژوهش مرحله کیفی شامل 25 خبره کلیدی و در بخش کمی 100 کارشناس بود. بر اساس نتایج کیفی، پیامدهای تغییر اقلیم شناسایی شد. در مرحله کمی مشخص شد که 69.3 درصد نگرش نسبت به پیامدهای تغییرات اقلیمی با نگرانی در مورد پیامدهای اجتماعی، اقتصادی و زیست محیطی، احساس نیاز به مدیریت ریسک و ارزش درک شده تبیین می شود. همچنین 71.2 درصد از تغییرات در قصد مدیریت برنامه ریزی شده برای کنترل پیامدها متأثر از نگرش به پیامدها، تمایل به کنترل رفتار، هنجارهای شخصی و ذهنی است. در نهایت، 69.8 درصد از تغییرات PMB برای کنترل پیامدهای تغییرات اقلیمی ناشی از استفاده از قصد مدیریت برنامه ریزی شده برای کنترل پیامدها، برنامه ریزی اقدام و برنامه ریزی مقابله است. نتایج این تحقیق کمک قابل توجهی به مدیریت برنامه ریزی شده برای کنترل پیامدهای تغییر اقلیم در بخش کشاورزی خواهد کرد و راه را برای تحقیقات آینده در زمینه کنترل پیامدهای تغییرات اقلیمی هموار می کند.