

## *Antecedents and consequences of green public administration*

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**Abstract:** This article aims to test a model of the antecedents and consequences of green public administration. Hence, a quantitative research approach and a structured questionnaire were used to address the issue and the formulated hypotheses. The survey was conducted in Urmia, a multi-cultural and multi-ethnic city northwest of Iran. Using a multi-stage cluster sampling, a sample of 550 citizens was selected and questioned from the five districts of Urmia. The collected data were analyzed to test the hypotheses using structural equation modeling. Results indicated that green innovation, green environmental ethics, and green governance have a positive and significant effect on green public administration. In addition, a positive and meaningful impact was found between green public administration and green citizenship value, intention to participate in green city, and green social value. The study clearly revealed that green public administration as a new concept in the developments of the government has not yet been entered correctly into management and the lack of theorizing in this regard is noticeable in the world in general and in Iran in particular.

**Keywords:** Green public administration; Green governance; Green innovation; Green environmental ethics.

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### **Introduction**

Climate changes caused by human influences, widespread pollution and violations in the field of waste management require governments' special attention to environmental issues because these processes directly affect the life quality of the population. Undoubtedly, the protection of the environment is considered the most urgent human need to achieve a better quality of life and achieve the goals of sustainable development in the 21st century, which at the same time faces many

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challenges, because the current human Despite a relatively acceptable understanding of the concept of the environment, it still lives on the circuit of indiscriminate development and preferring individual short-term benefits over long-term benefits. The conditions of climate change, population, biodiversity, and conservation of resources are some of the challenges that today different societies look to government organizations to handle. Therefore, many administration organizations have taken steps to initiate environmental protection policies. One of the most important mechanisms that contribute to green development is green public administration. Therefore, creating suitable platforms to improve productivity, quality, competitiveness, creativity and innovation in the optimal consumption of materials and benefiting from the favorable environment along with economic and social growth indicators can be possible through the establishment of green public administration. It can be argued that achieving the necessary measures to enter environmental standards into the contractual system can be a necessary factor in the greening of public administration (Shadrina & Romodina, 2017). Today, Biodiversity loss, extreme weather events, natural and man-made disasters, and lack of prevention and adaptation to climate change are the most important obstacles to the implementation of green development (Marsh, 2019). Public authorities must be actively involved in managing these risks, and this is the responsibility of officials at all levels. Environmental policies are often portrayed as being developed in the background of green radicalism. In contrast, green public administration is often seen as a loyal part of the law-abiding political establishment and democratic institutions, which allows it to have only a limited capacity to act as an environmental champion. The actual functioning of modern governments is part of the ecological problem. Studies show that environmental officials and other green professionals play an important role in moving society towards greenness (Hysing et al., 2016). Research evidence shows that the attention of Public managers to different levels of management and the allocation of competencies between local, regional and national levels are necessary for defining the direct and indirect aspects of the environment. Direct environmental aspects are those activities, products, or services that are under the direct control of a public administration (eg, municipality). Indirect aspects of the environment are related to those activities of urban management over which it has no full control but can influence them to some extent. Indirect environmental aspects can result from the interactions of urban management with third parties, especially citizens. The above analysis shows that public administration has a direct and indirect effect on most aspects (Canfora et al., 2019).

The study clearly revealed that green public administration as a new concept in the developments of the government has not yet been entered correctly into management and the lack of theorizing in this regard is noticeable in the world in general and in Iran in particular. To date, there is no study that examines green public administration in pro-environmental behaviors (i.e., intention to participate in a green city, green citizenship value, green environmental ethics, etc.), even if public administration literature on greening has started to examine this question in other fields. However, research evidence on citizen participation has focused on only the

public value created by citizens from the government's perspective, environmental ethics on competitive advantage (Singh et al., 2019), the impact of socioeconomic and environmental aspects on citizens' satisfaction from the point of view of general tourism management (Sanchez del Rio-Vazquez et al., 2019), public management and sustainability-oriented values (Marques et al., 2021) and green innovation understanding (Guinot et al., 2022) which is the first research gap. Therefore, the current research tries to answer the question of what effect green innovation, green environmental ethics and green governance can have on green public administration as antecedents, and what effect green public administration can have on outcomes such as green citizenship value, intention to participate in the green city and green societal value.

## **1. Review of research literature**

### **1.1. Green innovation**

Nowadays, companies use different orientations for improving their performance in the market. Among these orientations, innovation is of particular importance (Richter & Hauff, 2022). Most studies based on innovation have been done using Schumpeter's (1942) innovation theory. This theory defines innovation as the creation of new knowledge in the organization (Schumpeter and Nichol, 1934). The goal of green innovation is to achieve ecological sustainability, it emphasizes the introduction of environmental factors to technological innovations, and it needs to create new value while significantly reducing resource consumption and environmental pollution. To promote competitiveness based on green production, the alignment of technology and innovation policies in the work organizations is very important. For this purpose, governing institutions can intervene in green innovation policy. Governments and public institutions have developed several programs in an effort to promote green innovation. However, a real commitment to green innovation requires more participation from public institutions and governments (Guinot et al., 2022). The results of studies by Kondratenko et al. (2020) showed that green innovation is used as an essential parameter for the efficiency of green public administration. Therefore, the following hypothesis is proposed:

**H1:** Green innovation is positively associated with Green Public Administration.

### **1.2. Green environmental ethics**

Environmental ethics is an important internal resource that allows the company to use a value-creating strategy to increase environmental performance (Singh et al., 2019). Ethical beliefs, values, and norms related to environmental concerns are symbolic of corporate green environmental ethics, which may lead to long-term economic benefits for corporations. Organizations that adhere to high standards of green environmental ethics avoid the problems that arise with environmental protection protests and at the same time improve their corporate image (Remišová et

al. al., 2019). The study findings of Afigboa and Edijon (2015) showed that green public management requires public trust and environmental ethics. It is better for public servants to make individual decisions fairly and manage public resources properly to meet the expectations of citizens. Despite the failure of environmental green ethics in public policy discourses, ethical analyses of environmental problems still seem more critical than ever to improve environmental decisions (Käyhkö, 2021). A green management system will be successful if it does not ignore the vital role of human behavior in green processes and strives to strengthen such environmental behaviors. The results of Flodin's study (2019) show that there are ethical challenges at every level of public administration, in all non-profit and government organizations, and green ethics are essential in public administration. Therefore, the following hypothesis can be proposed:

**H2:** Green environmental ethics is positively associated with Green Public Administration.

### **1.3. Green governance**

Green governance can be implemented as a practical model for sustainable development in universities and higher education and research institutions, and it can be considered as a platform for training green-minded human resources in order to implement the principles of environmental management at different levels of society (Xu & Zhu, 2022). According to Rajesh (2020), green governance is the idealistic, tactical and involved management of the government's green natural resources. In fact, the pillars of green governance indicators are based on data that evaluate the success of countries in multiple policy areas that should be considered in the development of strong, efficient, and green economic, socio-political, and environmental systems. Transparent, fair and green governance enables companies to generate sustainable profits and improve their performance. Bornemann and Christen (2019) found that in order to play a key role in managing social changes toward greenness, government departments should change their way of working, i.e. they have to change their internal governance and take advantage of green governance in government departments. Therefore, the following hypothesis is proposed:

**H3:** Green governance is positively associated with Green Public Administration.

### **1.4. Green public administration**

Greening public administration means formulating a vision that must be shared with and by the people, supporting a commitment to finding a balance between short-term (economic) and long-term green benefits. Public administration is in an ideal position to lead this transition process. In fact, public administrations in many member countries play an important role by providing policy incentives and internal changes in their methods and activities to minimize their direct and indirect impact on natural resources, energy capacities and the environment. However, the

implementation of green public procurement is widely recognized as a challenging issue. One of the main obstacles to the high performance of green public procurement is the lack of sufficient resources for municipalities (Plaček et al., 2021). Today, the problem of optimizing the principles of public administration is very important. New challenges as environmental problems strongly indicate that the ecological principle should become the new law of public administration. Apparently, the set of environmental measures does not need to set rules for economic actors; rather, the public sector should display examples of reasonable consumption using its influence to ensure others about the appropriateness of the necessary changes to reduce human impact on the environment (Pogodina et al., 2019). The Green Development Goals constitute the global development agenda that must be achieved by 2030. Having a proper public administration system is now a goal for development. Also, government governance systems are now explicitly required to contribute to the realization of Green Development Goals through policy instruments. On the other hand, the formulation of Green Development Goals may refer to different levels of commitment, but still public management is everywhere in the Green Development Goals. Therefore, this prominence of public administration in Green Development Goals is a positive development (Bouckaert et al., 2016).

### **1.5. The value of green citizenship**

Green citizenship as stewardship is about building responsible and virtuous citizens who fulfill their moral obligations to create more sustainable relationships between nature and humans. What really matters is that citizenship practices are tools for developing and establishing moral virtue and becoming green citizens in the process. It is through virtuous behavior that rational environmental decisions are made and acted upon. Therefore, the citizen here is a thinker, doer and virtuous person who participate in creating a green relationship between man and nature. In addition, through green citizenship, the boundaries between the private and public spheres are violated, so that citizenship cannot be placed only in the public sphere (Jiang & Wong, 2016). Green citizenship will be an essential parameter to building a strong workforce and informing the public that combines the dimensions of ethical, social and environmental sustainability and supports appropriate ethical business conditions and education for green development. In this way, a radical and effective solution to face long-term environmental crises will be formed. However, achieving a green citizen requires special attention on human and social capital, transportation, information and communication infrastructure technology through informed management of natural resources and participatory governance (Feleki et al., 2020). Joo et al. (2019) in a study examining green values in citizen participation concluded that management based on green values is considered an important tool for green public management because it guides the attitude of citizens and on it affects their performance. Understanding how creating values affects citizen participation

mechanisms green is important for both government agencies and society. Therefore, the following hypothesis can be proposed:

**H4:** Green Public Administration is positively associated with green citizenship value.

### **1.6. Intention to participate in the green city**

Today, the idea of protecting the environment in the form of a current of thought and the inhumane situation prevailing in the cities during the industrial revolution caused the formation of the idea of the green city. Green City is one of the new approaches and in line with the concepts of sustainable development and it is used in order to improve the quality of the environment, living space and sustainable urban development. The priority in green cities is to pay attention to the fact that urban development should not destroy limited and non-renewable resources and destroy environmental systems in such a way that residents of urban areas and future generations are not able to meet their needs (Pace et al., 2016). The increase in economic prosperity due to the increase in issues related to environmental degradation and climate change has been accompanied by an increase in people's awareness about the quality of life. This has then led to a stronger commitment to developing new ways to reduce waste generation and emissions, produce clean energy and water, and increase energy and water efficiency (Richter and Behnisch, 2018). By examining the role of public administration in the development of the green city in Italy, Malandrino et al. (2019) found that the boundaries of public administration need to be redefined so that the relations between the public and private sectors in terms of cooperation and participation based on reliable and long-term relationships can be reviewed. Finally, it is necessary for the managers to replace the classical inefficient theories with new theories and to focus on urban green development, including more incentives to save energy, reduce consumption and protect the environment, as well as increase the welfare level of citizens. Therefore, the following hypothesis is proposed:

**H5:** Green Public Administration is positively associated with intention to participate in the green city.

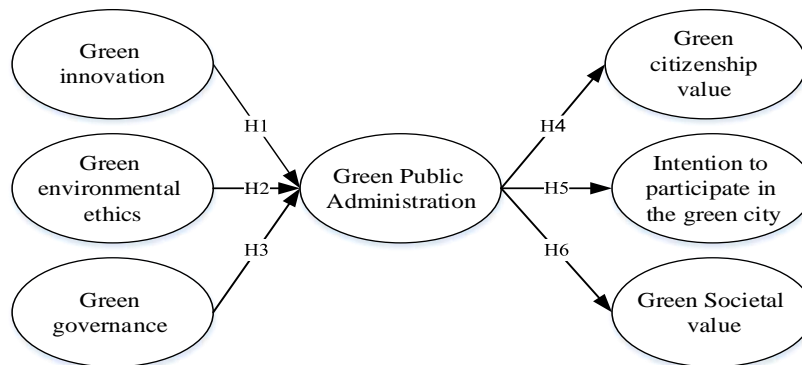
### **1.7. Green Societal value**

Green social values are those values that focus on social issues and are directly in line with the interests of society and citizens. The social values of government managers refer to the values that are formed directly in relation to society and are the result of the direct desire of government managers toward the interests of society. Previous studies have shown that implicit beliefs about humanity and their impact on the environment as well as their responsibility towards the environment are related to green purchasing attitudes and green consumer behavior (Caniëls et al., 2021). Implicit beliefs in favor of the environment also evaluate people's opinions about the relationship between humans and nature as the new ecological paradigm.

People with pro-environmental ideas are more concerned about global warming and environmental quality. They are willing to address environmental issues, while these studies evaluate the direct relationship between implicit pro-environmental beliefs and green behavior (Leal Filho et al., 2022). The results of Marks et al.'s (2021) studies regarding the role of public administration and green social values showed that values guide actions and judgments, form the basis of attitudinal and behavioral processes, influence managers' decision-making, and contribute to green performance. Therefore, the following hypothesis is proposed:

**H6:** Green Public Administration is positively associated with Green Societal value. The model used in this study was developed on the basis of the above discussion and research hypotheses. The proposed research model has been shown in Figure 1.

Figure 1. Proposed conceptual model



Source: Research finding

## 2. Methodology

### 2.1. Data collection and sample size

For the implementation of this research, a quantitative approach and a structured questionnaire were used. The questionnaire was distributed among the members of the statistical sample by the researcher himself. This survey was conducted from July 2022 to October 2022. The statistical population in this research is defined as all citizens living in Urmia. According to the size of the statistical community, the sample size in this research was determined using Cochran's formula; in this way, after determining the variance of the dependent variable through the pre-test of the initial questionnaire (consisting of 30 items), a sample size of 550 people was selected. Considering the number of the obtained sample, 110 questionnaires were assigned equally to each of the five regions of Urmia, due to the approximate similarity of the population of these regions. The sampling method for this research is the multi-stage cluster method, due to the appropriate coverage of ethnic and religious diversity. Cronbach's alpha coefficient was used to ensure the reliability of research variables. Out of a total of 550 citizens, 50.4 percent of the people were

men and 49.6 percent were women. 31.4% of people were single and 68.6% were married. In addition, 62.9% of respondents were employed and 37.1% were unemployed. From the selected sample, 48.6% with the highest percentage had a bachelor's degree. The average age of the respondents was 38.47.

## 2.2. Measuring variables

The proposed model in the present study includes seven theoretical structures, which were selected after a complete review of the available literature, the scales used in this study. Then, using the study of Gehlbach and Brinkworth (2011), the Q-Sort method was used to determine whether the classification of the structural expert panel is consistent with the literature or not. It should be noted that in order to ensure the validity of the structural measurement items, a preliminary meeting was held with five university professors in the field of urban planning and public administration. The experts were able to sort the variables based on seven theoretical constructs, which indicates the face and content validity of the theoretical constructs. In addition, a 5-point Likert scale was used to measure the indicators of the questionnaire. As shown in Table 1, all the items used to measure the constructs were adapted from the literature (the source of each construct is listed in Table 1).

## 2.3. Data analysis

The PLS-SEM was used to analyze the data. Hair et al. (2011) state that PLS-SEM is suitable for exploratory theory-building studies that identify the drivers of a construct. Also, due to the fact that some variables were abnormal, this software was used. The reflective measurement model is evaluated to confirm the validity and reliability of the model. As the results of Table 1 show the measurement model meets all quality and reliability criteria. First, all factor loadings are higher than 0.7, composite reliability is higher than 0.7, and mean values of extracted variance are higher than 0.5. Divergent validity is acceptable when the average variance extracted for each construct is greater than the shared variance of that construct and other constructs in the model. As shown in Table 2, the values on the main diameter of the matrix are greater than all the values in the corresponding column.

**Table 1. Constructs and measuring items**

Items	$\lambda$	AVE	Composite reliability	Cronbach Alpha
<b>Green innovation (Tjahjadi et al., 2020)</b>	-	0.740	0.809	0.822
In my city, garbage and greenhouse gases are actively recycled.	0.792			
My city strives to become the greenest city in achieving zero waste production.	0.903			
My city is trying to gain a national image in the field of environment.	0.854			



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Items	$\lambda$	AVE	Composite reliability	Cronbach Alpha
<b>Green environmental ethics (Guo et al., 2020)</b>	-	0.788	0.888	0.836
The nature we live in belongs to our generation and our future generations, so it should be respected.	0.772			
Humans should not deal with the environment in such a way as to cause harm to other humans.	0.727			
The government should prepare laws to protect the environment and oblige people to comply with those laws.	0.835			
In order to preserve the environment, humans must change their consumption methods and patterns (in the field of fuel, energy, resources, etc.).	0.790			
It is necessary to have a code of ethics in the field of protecting the country's environment that everyone should be aware of.	0.968			
<b>Green governance (Xu &amp; Zhu., 2022)</b>	-	0.795	0.899	0.807
The government provides understandable information about environmental issues.	0.793			
National and local regulations on environmental issues are published on time.	0.806			
Environmental administrative proceedings at the national level are carried out without unreasonable delay.	0.924			
A citizen can easily obtain detailed information about environmental issues in his country from the government.	0.775			
<b>Green Public Administration (Leuenberger &amp; Wakin, 2007)</b>	-	0.812	0.905	0.900
Investigating the effectiveness of reducing the emission of pollutants, reducing and promoting the efficient use of resources should be included in the agenda of the public administration.	0.884			
It is better for public administrations to develop their green index system.	0.817			
It is better for public administrations to increase public services for citizens and provide green productivity through their interactions in planning and implementing laws.	0.857			
Public administrations can increase citizens' sensitivity to environmental issues by	0.701			

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Items	$\lambda$	AVE	Composite reliability	Cronbach Alpha
providing continuous and targeted environmental education.				
<b>Green citizenship value (Yin et al., 2021)</b>	-	0.733	0.867	0.811
I encourage my fellow citizens to have more conscious behaviors toward the environment.	0.736			
I am diligent in maintaining the environment of my community.	0.805			
I tend to maintain the image and reputation of my city.	0.731			
If there is a problem in the provision of city services, I will be patient.	0.833			
<b>Intention to participate in the green city (Wang, 2022)</b>	-	0.782	0.806	0.782
The higher the level of satisfaction with service delivery in the urban green space, the more willing I will be to participate.	0.826			
With my participation, I can be effective in maintaining the green space of my city.	0.771			
Citizens who have a strong sense of loyalty to their place of residence are interested in participating in green space maintenance.	0.727			
<b>Green Societal value (Chen et al., 2020)</b>	-	0.779	0.844	0.820
I enjoy the beautiful scenery of my city.	0.786			
My city has architecture and stories of natural and human history that are important to me, others or the nation.	0.925			
I value my city by itself, whether people are present or not.	0.880			
My city provides a place for my favorite outdoor recreational activities.	0.820			

*Source: Research finding*

**Table 2. Discriminant validity**

Latent Variables	Mean	SD	1	2	3	4
1. Green innovation	3.432	1.041	0.860			
2. Green environmental ethics	3.998	1.984	0.711	0.887		
3. Green governance	4.087	1.009	0.691	0.720	0.891	
4. Green public administration	4.790	1.186	0.544	0.599	0.764	0.901
5. Green citizenship value	4.023	1.002	0.563	0.413	0.613	0.804
6. Intention to participate in the green city	4.339	1.005	0.514	0.366	0.501	0.642
7. Green Societal value	4.229	1.108	0.426	0.295	0.410	0.508

*Source: Authors' contribution*

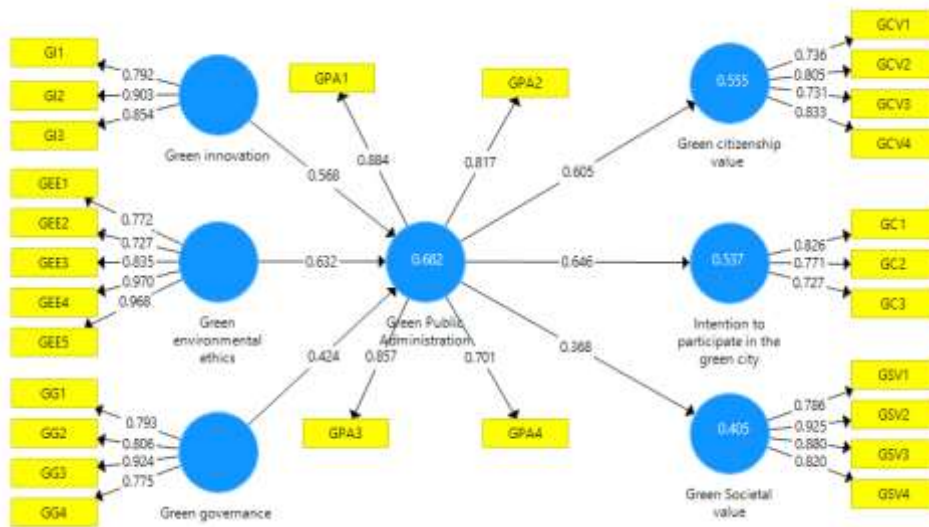
The structural model of this study is evaluated through the coefficient of determination ( $R^2$ ), predictive correlation ( $Q^2$ ), goodness of fit (GOF) test, and hypothesis testing. The  $R^2$  values obtained for endogenous constructs show that the research model explains 68% of green public administration, 55% of green citizenship value, 53% of intention to participate in green city and 40% of green social value. Chin (1998) has considered three values of 0.19, 0.33 and 0.67 as criteria values for weak, medium and strong values of the fit of the structural part of the model by the  $R^2$  criterion. According to Table 3, it can be stated that all  $R^2$  values are at a strong and medium level for fitting the structural part of the model. The obtained  $Q^2$  values indicate that the model has sufficient predictive relevance, as the values are above the threshold of 0.000 (Hair et al., 2019). Considering that the model has all the criteria, it can be suggested that the structural model is good. The GOF index in the PLS model is a solution to check the overall fit of the model. The appropriate value for this index has been considered between zero and one. Values close to one indicate the good quality of the model. To evaluate the fit of the overall model, the GOF criterion was used, where 0.1 is considered as a weak value, 0.25 as a moderate value, and 0.36 as a strong value to measure the validity of PLS models. According to the value obtained for GOF of 0.563, a very good fit of the overall model is confirmed (Table 3).

**Table 3. Investigating the fitness of the structural model**

<b>Hidden variable</b>	<b>Communalities</b>	<b><math>R^2</math></b>	<b><math>Q^2</math></b>
Green innovation	0.487	-	-
Green environmental ethics	0.563	-	-
Green governance	0.511	-	-
Green Public Administration	0.708	0.682	0.4163
Green citizenship value	0.608	0.555	0.3342
Intention to participate in the green city	0.588	0.537	0.2789
Green Societal value	0.622	0.405	0.3089
Average	0.583	0.544	-
<b>(GOF)</b>	<b>Acceptable interval</b>	<b>Result</b>	
0.563	Weak $\geq 0.1$ ; Average $\geq 0.25$ ; Strong $\geq 0.36$	<b>Accepted</b>	

*Source: Authors' contribution*

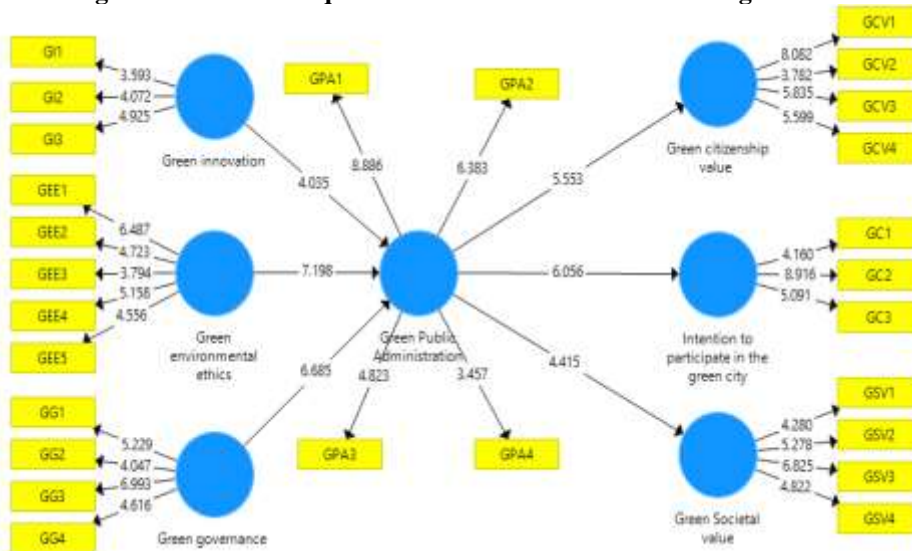
Figure 2. Path coefficients and factor loads of the research model



Source: Authors' contribution

Figure 2 shows the output of the software in the estimation mode of path coefficients and determination coefficients (R<sup>2</sup>). The numbers on the paths indicate the coefficient of the path, the numbers inside the circles are for endogenous variables; it shows the value of the coefficient of determination and the numbers on the arrows of the hidden variables indicate the factor loadings.

Figure 3. Structural equation models in the coefficient of significance



Source: Authors' contribution

The summary of the results related to the hypothesis test is reported in Table 4. Also, the bootstrapping method was used to test research hypotheses.

**Table 4. Results of bootstrapping analysis**

Structural path	Code	Beta ( $\beta$ )	T Statistics	f <sup>2</sup>	P Values	Supported?
Green innovation $\rightarrow$ Green Public Administration	H1	0.568	4.035	0.583	0.000	Yes
Green environmental ethics $\rightarrow$ Green Public Administration	H2	0.632	7.198	0.714	0.000	Yes
Green governance $\rightarrow$ Green Public Administration	H3	0.424	6.685	0.375	0.000	Yes
Green Public Administration $\rightarrow$ Green citizenship value	H4	0.605	5.553	0.681	0.000	Yes
Green Public Administration $\rightarrow$ Intention to participate in the green city	H5	0.646	6.056	0.753	0.000	Yes
Green Public Administration $\rightarrow$ Green Societal value	H6	0.368	4.415	0.328	0.000	Yes

*Source: Authors' contribution*

The f<sup>2</sup> test shows which of the independent variables (exogenous structure) has a greater effect on the measurement of that dependent variable (endogenous structure). The results of f<sup>2</sup> values are measured with three values of weak effect (0.02), medium effect (0.15) and strong effect (0.25). The results of Table 4 confirm that green public administration has a strong effect on the desire to participate in the green city, and in addition, green environmental ethics also has a strong effect on green public administration. The results show that green innovation (H1,  $\beta=0.568$ ,  $t=4.035$ ), green environmental ethics (H2,  $\beta=0.632$ ,  $t=7.198$ ) and green governance (H3,  $\beta=0.424$ ,  $t=6.685$ ) Green public administration has a positive and significant effect. Our results further show that green public administration has an effect on the value of green citizenship (H4,  $\beta=0.605$ ,  $t=5.553$ ), intention to participate in the green city (H5,  $\beta=0.646$ ,  $t=6.056$ ) and green social value (H6,  $\beta = 0.368$ ,  $t= 4.415$ ) has a positive and significant effect. As shown in Table 4, all the hypotheses are supported.

### 3. Discussion and conclusions

The objective of this research is to the effect of antecedents (i.e., green innovation, green environmental ethics and green governance) and consequences (i.e. value of green citizenship, intention to participate in a green city and social value) of green public administration among the citizens of Urmia. First, according to the green innovation literature by Kondratenko et al. (2020), the results of the research showed that green innovation has a positive and significant effect on green public administration. Green innovation is used as an essential parameter for the efficiency of green public administration. In addition, the continuous industrial revolution leads to the expansion of innovations and their consideration in management at all levels. In this case, the government should understand the impact of innovations on public administration and develop relevant mechanisms and legal tools to attract and support innovations. Second, research findings show that green environmental ethics are positively and significantly related to green public administration. These findings are partially supported by the studies of Afegbua and Edejuwon (2015) which show that green public administration requires public trust and environmental ethics. It should be noted that environmental ethics can indirectly play a role in all environmental impact assessment processes, but it can play a more obvious and effective role in the public administration stage. The necessity of putting ethical teachings in promoting development plans is due to the fact that human activities and actions are in the form of decisions before they take on a practical identity. Since the decision-making patterns follow value systems, and if morality governs the value system, ethical decisions will be made in favor of the environment. Therefore, the rule of environmental ethics in the administration of society can be considered as a type of executive guarantee for the assessment of environmental effects.

Third, the results of the third hypothesis show that green governance has a positive effect on green public administration. It could be argued that one of the first steps might be to recognize that the creation of a public administration and green governance is an important strategic policy in this area. The findings of Meulelman's study (2021) showed that green governance is used as a necessary lever for the development of green public administration. Bornemann and Christen (2019) found that in order to play a key role in managing social change towards green, public administrations must change their style of working, i.e., their internal governance, and move towards green or sustainable governance. In addition, they showed that green governance is an essential drive to restructure economic development and realize a green technology revolution for green development and its consequences for the public health of citizens and society. Normally, cities can bring a high quality of life to citizens who are placed in a favorable environment in terms of the quality of governance. On the other hand, green environmental governance is important because it helps communities identify and deal with environmental problems. It includes interactions between different stakeholders and the government, in which strategies, methods, policies and alternatives to reduce impacts solve problems and design environmental management programs that can be implemented in the long

term. Fourth, regarding the effect of green public administration on the value of green citizenship, our findings confirmed it. Public sector organizations have increasingly focused on citizen participation by adopting tools called open innovation. Today, citizens are more or less satisfied with environmentally friendly innovation; however, it is necessary to regularly evaluate their ability to influence the lives of citizens and increase their expectations. In general, the essence of green public administration lies in the principles of citizenship, as it is intellectually based on the concept of 'the public' that represents citizens, and its practical commitment remains. The findings of Ariely's research (2013) show that citizens' assessment of public administration is higher than other issues such as political trust, electoral fairness and political efficiency, and the quality of public administration has a positive correlation with citizens' democratic satisfaction. Fifth, green public administration strongly and positively affects the intention to participate in the green city. It can be argued that placing green development as the basic principle of a green city requires the participation of society. Government policies play an essential role in providing urban green spaces. Through statements, ambitious strategic goals and objectives, governments have shown a growing understanding of green space provision and a commitment to creating green and livable cities. By creating effective citizen participation mechanisms, the public administration becomes more dynamic and greener, reacts more actively to citizens' concerns, and ultimately is better able to deal with the challenges of the ever-changing political environment. Finally, the results of the sixth hypothesis showed that green public administration has a positive and significant effect on green social value. The findings of this hypothesis somewhat corroborate the results of studies by Marks et al. (2021) and Scupola and Mergel (2022). It can be argued that the government can improve the urban environment by promoting social value in society. The development of a green society is one of the main concerns of today's world. Most public organizations have approved their policies to reduce the environmental impact of their operations. These public green organizations play an important role in the development of green societies. On the other hand, this green development of urban space has emerged through the management of green public organizations. The findings of the research of Boenigk and Möhlmann (2016) show that citizens simultaneously understand public consequences in the dimensions of social value and environmental value. The participation of citizens in the actual use of green public services can strengthen the goals of green consumption in the future. By focusing the role of green public administration on the social value of green, governments can more easily receive outcomes that broaden the exchange benefits and more effectively address broader economic, social, and environmental values.

### **3.1. Theoretical implication**

The findings of this study provide different policy implications for both the government and the citizens. Governments should prioritize strategies that try to prioritize the areas of an effective and transparent public administration that is closer

to citizens every day. Also, citizens should be offered opportunities for efficient and low-cost services. The government should regulate and implement laws that enable citizens and administrative institutions to communicate in a transparent and efficient manner. On the other hand, the citizenship quality of Urmia's is active and strong in terms of participation in government development programs. In addition, the citizens of Urmia are altruistic and eager to cooperate with people from different ethnicities and religious backgrounds. This method can help decision makers to analyze and draw the quality of citizenship of a particular society as a consideration in formulating and implementing environmental policies. Through green governance and green public administration, citizens can pursue maximum social and environmental value, and each governing body participates in green governance activities through negotiation and commits the relevant relative advantages to achieve their respective goals. The definition of green public administration and green governance in this study will be useful not only for planning and implementing policy interventions, but also for developing frameworks for measuring social value creation in public administration, urban service delivery, and environmental development. In this connection, in addition to the role of green governance in determining the fate of the environment and its elements, environmental values can also play a significant role in shaping the movement of the government.

Based on the analyses and evaluations that took place in the previous sections, in this part, solutions are proposed for the efficiency of the green public administration and increasing the intention of citizens to participate in the green city:

(1) Respecting the principles of social justice in the procurement process of plans and distribution of services and activities at the level of urban areas. This can have a positive effect on social satisfaction, the feeling of belonging to the residential area, and finally on the citizens' participation in urban affairs. (2) Attracting citizens' trust from the municipality by treating all clients equally in applying rules and regulations and refraining from granting any special privileges to specific persons, implementing citizens' opinions, observing ethical principles in relation to the environment and refraining from any playing by the rules, the readiness of city managers and officials to accept criticism. (3) Expansion of information networks and communication systems to gather citizens' opinions and suggestions to the public administration, considering the comments of the majority of the respondents regarding the lack of a system and network at the city level to reflect the opinions, ideas, criticisms and complaints of citizens regarding the performance of urban management; the expansion of information networks and communication systems plays an important role in increasing citizens' participation in the green city.

### **Conflict of Interest Statement**

The authors declare that the research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.



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