

## The Modeling for Improving Organizational Happiness and Environmental Performance of University, using Green Management Implementation

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### Abstract

**Purpose:** The aim of this study was to improve the organizational vitality and environmental performance of the university by implementing green management in the administrative, educational and research units of the free universities of Mazandaran province in the academic year of 2019-20.

**Methodology:** Method in terms of practical purpose and in terms of data collection among descriptive research was correlational and in terms of method was mixed exploratory research. The statistical population consisted of 21 experts, specialists, experts in the fields of educational management and psychology, which was done using purposive sampling method and using the principle of maximum diversity to achieve theoretical saturation using semi-structured interviews. For validity and validity of the data, two methods of reviewing participants and reviewing non-participating experts in the research were used. The statistical population in the quantitative part included all faculty members, senior, middle and operational managers and officials of administrative, educational and research units of free universities in Mazandaran province in 1950. In the quantitative part, 321 people were selected as a statistical sample by relative random sampling method based on Cochran's formula.

**Findings:** Data in the qualitative part were extracted through the implementation of Delphi technique with a semi-structured questionnaire and in the quantitative part through the implementation of researcher-made questionnaires of green management, organizational vitality and environmental performance on the statistical sample. The validity of the questionnaires was confirmed in terms of content and structure. Reliability was estimated and confirmed by Cronbach's alpha coefficient with 87%. Used. Results: Exploratory and confirmatory factor analysis showed that green management (six dimensions) has an effect on organizational vitality (seven dimensions) and environmental performance (seven dimensions) and organizational vitality has an effect on environmental performance. Also, organizational vitality played a mediating role in the impact of green management on environmental performance.

**Discussion:** The development of economy, industry and green innovation requires culture building and efforts of every committed and responsible citizen of the country and as a matter of governance, all elements of the system must adhere to it.

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## 1. Introduction

Air pollution, followed by poor air quality, is a serious environmental problem in urban areas around the world, especially in developing countries, and is a global challenge in today's societies that affects millions of people around the world. Its direct and indirect harms and consequences are significant, especially for low- and middle-income countries. Air pollution causes adverse effects on human health and well-being, its living environment as a result of economic growth of societies. According to the World Health Organization in 2012, 2.4 million people worldwide die each year due to the effects of air pollution on health (Yarahmadi & Soleimani-alyar, 2016). According to epidemiological evidence, air pollution is responsible for several million premature deaths per year (World Health Organization; European Region, 2015). In today's technology society, the environment is all we need in everyday life; On the one hand, the city and its man-made centers, nature and its constituent areas; Such as land, mountains, forests, sea, desert and on the other hand climatic factors such as water, air, wind, light and heat of the sun (Farahmand, et al, 2014). According to the United Nations Environment Program, in the year 200, the issues of climate change, global warming, freshwater depletion, marine erosion, population growth, resource depletion, biodiversity erosion and declining biosafety as existing sustainability challenges And now in the world, have been raised, Despite all the environmental efforts that have been made so far, human activities have continued to upset the balance of nature. The impact of human behavior and technology on the Earth's ecosystem has been growing since the Industrial Revolution about 200 years ago, and has been accelerating for the past 50 years (Stephen & Graham, 2010). According to the Environmental Performance Index, based on health impact indicators, air quality, water and wastewater, water resources, agriculture, forestry, fisheries, biodiversity and habitat, and climate and energy in 2006, Iran ranks among 123 countries. The world is ranked 53rd. In the next evaluation period in 2008, Iran's environmental performance rating dropped again to 105 with a re-drop. In recent decades, with the rapid development and the formation of various development programs in Iran, its environment has not been considered as it should be. The result of lack of proper attention and lack of effective measures regarding the environment has caused catastrophic environmental crises in the country (Salaki, et al, 2017).

On the other hand, the increase in pollution and environmental damage, and as a result of increasing people's concern about the natural environment around them, has begun to show in their buying and consuming behaviors and has created a new group of consumers called green consumers. (Do Paco & Raposo, 2010). As global markets continue to evolve, the pillars of sustainability (e.g., environment, economics, and social justice) have increasingly become part of marketing decisions (Huang & Rust, 2011). Today, environmental problems seem to have concerned citizens, organizations and institutions around the world more than 30 years ago (Papadopoulos et al, 2010). Understanding united movements and pressures is essential to being green because it can lead us to know how green activities work in all organizational activities. Companies use the strategic approach of environmental entrepreneurship to have the opportunity to change the process of developing satisfactory, new and technical products and create a competitive profit (Rahbar and Abdul Wahid, 2011). Therefore, the move of companies towards green management for proper productivity and efficiency improvement seems inevitable. Also; Work is one of the most important aspects of a person's life, and people do it for money or intangible rewards, such as their spiritual desires. In the past, many believed that the work environment was a serious and conflicting environment, and that it was a misconception to think that one could both work and be happy; But today, after years of effort, many companies in order to find a way to improve the profits and benefits of employees and increase their quality of work life, have paid attention to creating vitality in the workplace and increasing vitality in the organization is one of Key priorities are considered (Den Dulk, et al, 2013). In the late twentieth century, extensive research in the field of industrial psychology, especially in the field of factors affecting motivation such as attention to working hours, absenteeism, leaving the job, organizational climate and quality of work life, which are the most important factors of quality of work, It

is a category of cheerfulness (Bakhtiyar Nasrabadi et al, 2009). In recent decades, psychological issues have greatly affected the individual and organizational performance of employees, and related issues, including organizational vitality, have received more and more attention. Since 2000, in the eyes of the United Nations, to determine the level of development of countries, cheerfulness, and hope for the future, satisfaction and satisfaction of people in society have been included in the calculations as the main variables that show the importance of studying cheerfulness. Since happiness is one of the effective factors for the survival and stability of the organization's development process and maintaining health and progress in the long run, it has found a special place in management texts (Qureshi & Golmohammadi 2017). The need to address the issue of vitality and the factors that create it arises from the fact that it is very important for both society and its institutions. Today, due to the fact that people spend more time in organizations, if they have a lively work environment, they can enjoy the benefits. With the revelation of the benefits and importance of a vibrant work environment, different countries have paid special attention to this issue. Managers should be aware that effective management cannot be achieved without attention and trust in the health and mental health of employees (Bakhtiyar Nasrabadi et al, 2009).

In a study conducted by Hesabi et al (2018) entitled *The Effect of Environmental Performance on Happiness: An Interstate Analysis*, the results showed that improving environmental performance has a positive and significant effect on happiness in the countries studied. The rate of this effect is 6%. On the other hand, the results indicate that the effect of control variables including Gini coefficient and negative environmental effect (average of the total negative emotions caused by the environment) on happiness is negative, while freedom of choice has a positive effect on happiness. In a study conducted by Mohammadian Shahestan & Sayadi (2017) under the title of the status of organizational vitality in education in Saravan, the results showed that the components affecting organizational vitality in order of priority are: social interaction, helping others, personal efficiency, grooming, life satisfaction. In a study conducted by Mohammadi & Jalil Piran (2016) entitled *The study of the impact of green management on the performance of natural resources employees Case study: Chaharmahal and Bakhtiari province*, the findings showed that there is a significant relationship between the average dimensions of green management and employee performance And there is a positive. In a study conducted by Fahimi Nia et al (2016) entitled *Assessing the knowledge, attitude and practice of managers of Qom University of Medical Sciences regarding green management*, no statistically significant relationship was observed between knowledge and demographic variables of the study. According to the results, managers have a relatively good knowledge, attitude and performance in the field of green management. In a study conducted by Naderifar, Rahdari, Shahnavaizi (2016) entitled *"Study of Factors Affecting the Vitality and Vitality of Bank Saderat Iran Employees in Zabol"*, the research findings showed that all identified factors of organizational learning, facilities of the region Employee justice, positive thinking, flexible structure, role-playing status, interest in work, safety in the workplace and interaction with colleagues affect the vitality and vitality of employees.

In a study conducted by Kim et al (2019) entitled *The Impact of Green Human Resource Management on the Environmental Behavior of Hotel Staff and Environmental Performance*, the findings showed that green human resource management is the organizational commitment of employees, environmentally friendly behavior Increases the living and environmental performance of hotels. This study showed that senior hotel management and human resource managers should develop green human resource management policies. In a study conducted by Raharjo (2019) entitled *The role of green management in creating sustainable performance in small and medium enterprises*, according to the results, shareholder demand, resources, knowledge and product monopoly have a significant impact on the use of green management And green management has a significant impact on sustainability performance. This means that shareholder demand, resources, knowledge and product monopoly have a significant impact on green management, and green management simultaneously has a significant impact on sustainable performance.

Using green management will also improve sustainable performance. In a study by Dagiliūtė, Liobikienė, Minelgaitė (2018) entitled Sustainability in Universities: Students' Perceptions of Green and Non-Green Universities, the results showed that there was a significant difference in terms of sustainability in general. There is not, but Green University students often agree that the university introduces itself as environmentally friendly. They acquire more environmental information and often participate in sustainability activities compared to non-green university students. After applying regression analysis, it was found that only the sustainability of the environment and environmental information significantly determines the participation of students in sustainability. In a study conducted by Keser (2016) entitled Neshat at Work: A Survey of Turkey, this survey was conducted in different companies with 1199 workers in Turkey. The results showed that 59.3% of the sample was "happy at work", 40.7% "were not happy at work". The results of the analysis showed that there was a significant relationship between "happiness at work" and "type of generation" and the data did not show a significant difference between "happiness at work" and "types of work".

The present study seeks to provide a model for promoting organizational vitality and environmental performance using the implementation of green management in the free universities of Mazandaran province. The motivation of the researcher to conduct the present research can be mentioned in the form of immediate and future importance. In expressing the immediate importance of research, it should be noted that recently a lot of attention has been paid to environmental issues in different countries; one of the issues that various industries are required to address is environmental issues, and governments have direct oversight of the environmental performance of various industries. But in our country, not much attention is paid to this issue and there is no legal supervision over the environmental activities of industries such as petrochemicals, automobiles, higher education systems, etc. Green management as a suitable solution can make government, quasi-government and private organizations adhere to various environmental guidelines. Today, many large and advanced organizations in the world accept green management in the organization as an important principle and implement it in various functional aspects of the organization such as green human resource management, green productivity, green supply chain management and ...Formation. In expressing the future importance of research, there is no doubt that the implementation of green management, both in terms of issues of organizational behavior and in terms of performance factors can have significant effects. What sets this study apart from other studies is its consideration of the behavioral and functional impact of green management on the organization. Implementing green management by changing the morale of employees can create an environment based on organizational happiness and vitality and; Affect the performance of the organization from an environmental perspective. Islamic Azad university; As the largest university in Iran, it has a favorable spread in Mazandaran province and many students from all over the country and at different times are studying in this university. The university environment should be a leader in various matters and issues, and attention to "green management", as a very important element in the social responsibility of the free university in the social and environmental dimensions; it can evoke a positive and justified image of this important educational organization in people's minds. also; Due to the novelty of the model used in the present study and the pristine nature of the research topic, the results can give the idea to managers and senior decision makers of educational organizations in the country - Azad University that using green management and its frameworks; It can improve the environmental performance of the organization and on the other hand create a happy atmosphere in the organization. On the other hand, conducting the present study can to some extent fill the severe research gap in Iran regarding "green management" and its effects on organizational performance and behavior in various aspects. Therefore, the question of the present study is what is the model of promoting organizational vitality and environmental performance of the university using the implementation of green management in the free universities of Mazandaran province?

## 2. Methodology

The purpose of this study was to improve the organizational vitality and environmental performance of the university by implementing green management in the heads of administrative, educational and research units of the free universities of Mazandaran province in the academic year of 1998-99. Method: The research was applied in terms of purpose and in terms of data collection among descriptive studies was correlational and in terms of method was mixed exploratory research. The statistical population consisted of 21 experts, specialists, experts in the fields of educational management and psychology, which was done using purposive sampling method and using the principle of maximum diversity to achieve theoretical saturation using semi-structured interviews. For validity and validity of the data, two methods of reviewing participants and reviewing non-participating experts in the research were used. The statistical population in the quantitative part included all faculty members, senior, middle and operational managers and officials of administrative, educational and research units of the free universities of Mazandaran province in the number of 1950 people. In the quantitative part, 321 people were selected as a statistical sample by relative random sampling method based on Cochran's formula. Data in the qualitative part were extracted through the implementation of Delphi technique with a semi-structured questionnaire and in the quantitative part through the implementation of researcher-made questionnaires of green management, organizational vitality and environmental performance on the statistical sample. The validity of the questionnaires was confirmed in terms of content and structure. Reliability was estimated and confirmed by Cronbach's alpha coefficient with 87%. Used.

## 3. Findings

In this study, the Delphi method was performed in a total of four rounds, in which the findings of each round are presented separately. First, the proposed dimensions of "green management (GM)"; Both the mean and standard deviation of the dimensions, as well as their order of importance, are presented in order to identify the response status of the test takers to the items of the semi-structured questionnaire, which is based on previous research.

**Table1.** Statistical description of respondents' views on the dimensions of "green management (GM)",

Dimensions	Number of replies	The least	the most	Average	Deviation from the standard	Sequence of importance
Green energy management	20	2.00	5.00	3.45	0.83	2
Green management of waste control and disposal	20	2.00	5.00	3.65	0.77	1
Green Transportation Management	20	1.00	5.00	2.45	0.86	4
Green productivity management	20	2.00	5.00	3.40	1.01	3

In the second part of the first round of the Delphi method questionnaire, experts were asked that if a dimension or dimensions were key and important to them that have not been paid much attention or have not been mentioned in previous texts and articles, but from It was important for them to state that among the answers examined, the dimensions of "green culture governance", "green rules and regulations" and "green education" with the explanatory dimensions of green management (GM) in the first stage Delphi added. In the second round; In this section, as in the first stage, the results obtained from the experts' answers were examined, with the difference that in this stage, the dimensions of "green culture rule", "green rules and instructions" and "green education" were explained. Management Green Management (GM) has been added. According to experts, for the explanatory dimensions of green management (GM), the most important is related to green energy management with an average of 3.70 and deviation from the standard of 0.79 and the least important is related to green transportation management with an average of 2.25. And deviation from the criterion was 0.89. In the third round; According to experts, for the

explanatory dimensions of green management (GM), the most important is related to green energy management with an average of 3.65 and deviation from the standard of 0.80 and the least important is related to green transportation management with an average of 1.98 and The deviation from the criterion was 1.05. According to the results of the third stage obtained from the experts' response, the "green transportation management" dimension has an average of less than 2, and in this stage, this dimension is removed from the explanatory dimensions of green management (GM), To be. According to experts, for the explanatory dimensions of green management (GM) in the fourth round of Delphi, the most important is related to green energy management with an average of 3.57 and deviation from the standard of 0.75 and the least important is related to green education with an average of 0.03. 3 and the deviation from the criterion was 1.02. Kendall coordination coefficient for the answers of the fourth round is 0.794, which has increased by only 2.8% compared to the third round, which was equal to 0.766. Not significant. Therefore, the final dimensions explain the variable "Green Management (GM)" after performing four rounds of Delphi quality technique as described 1, Green energy management, 2, Green management of waste control and disposal, 3, Green productivity management, 4, Governance Green culture, 5, Green rules and instructions, and 6. Green education, were determined.

**Table2.** Statistical description of respondents' views on the dimensions of "organizational vitality"

Dimensions	Number of replies	The least	the most	Average	Deviation from the standard	Sequence of importance
Thinking positive	20	2.00	5.00	3.14	0.82	4
Self-openness	20	1.00	5.00	2.88	0.65	5
Expression of the Emotions	20	2.00	5.00	3.66	0.70	1
Your honor	20	2.00	5.00	3.20	0.98	3
Social relations and participation	20	2.00	5.00	3.42	1.05	2

In the second part of the first round of the Delphi method questionnaire, experts were asked that if a dimension or dimensions were key and important to them that have not been paid much attention or have not been mentioned in previous texts and articles, but It was important for them to state that among the answers examined, the following dimensions of "intimacy in the workplace", "importance of assigned tasks" and "willingness to teach and learn" to the dimensions that explain organizational vitality in the first stage of Delphi added. In the second round, as in the first stage, the results of the experts' response were examined, with the difference that in this stage, the dimensions of "intimacy in the workplace", "importance of assigned tasks" and "willingness to teach and learn" were measured. An explanation of organizational vitality was added. According to experts, for the explanatory dimensions of organizational vitality, the most importance is related to intimacy in the workplace with an average of 3.88 and deviation from the criterion of 0.83 and the least importance is related to self-openness with an average of 1.93 and deviation from the criterion of 59.5 Has been 0. According to the results of the second stage obtained from the response of experts, the dimension of "self-openness" has an average of less than 2, and in this stage, this dimension is removed from the explanatory dimensions of organizational vitality. In the third round, according to experts, for the explanatory dimensions of organizational vitality, the most important is related to intimacy in the workplace with an average of 3.71 and deviation from the standard of 0.91 and the least important is related to the desire to teach and learn with an average of /15. 3 and the deviation from the criterion were 0.67. In the fourth round, according to experts, for the explanatory dimensions of organizational vitality in the fourth round of Delphi, the most important is related to intimacy in the workplace with an average of 3.82 and deviation from the standard of 0.89 and the least important is related to the desire to teach and learn, With an average of 3.03 and a deviation from the standard of 1.02. Kendall coordination coefficient for the answers of the fourth round is 0.845, which has increased only 4.2% compared to the third round, which was equal to 0.803. This coefficient has grown with the degree of consensus among the working members of the group between two consecutive rounds. Not significant.

Therefore, the final dimensions explaining the variable of "organizational vitality" after performing four rounds of Delphi quality technique are described as 1: Positive thinking, 2: Expressing emotions, 3: Self-respect, 4: Social relations and participation, 5: Intimacy in the workplace, 6: The importance of the assigned tasks and the 7: willingness to teach and learn were determined.

**Table3.** Statistical description of respondents' views on the dimensions of "environmental performance"

Dimensions	Number of replies	The least	the most	Average	Deviation from the standard	Sequence of importance
energy consumption	20	2.00	5.00	3.14	0.82	3
Orbital environment	20	1.00	4.00	2.45	1.12	4
Use of recycled materials	20	2.00	5.00	3.52	0.70	1
Use of equipment with environmental standards	20	2.00	5.00	3.33	0.98	2

According to experts, for the explanatory dimensions of environmental performance, the most importance is related to the use of recycled materials with an average of 3.52 and deviation from the standard of 0.70 and the least importance is related to the orbital environment with an average of 2.45 and deviation from the standard. It was 1/12. In the second part of the first round of the Delphi method questionnaire, experts were asked that if a dimension or dimensions were key and important to them that have not been paid much attention or have not been mentioned in previous texts and articles, but It was important for them to state that among the answers examined, the following dimensions of "environmental citizenship behavior", "promotion of environmental attitude and awareness" and "environmental programs and strategies" with dimensions explaining environmental performance Peripherals were added in the first Delphi phase. In the second round, according to experts for the explanatory dimensions of environmental performance, the most importance is related to environmental citizenship behavior with an average of 3.66 and deviation from the standard of 0.85 and the least importance is related to orbital environment with an average of 2.44 and the deviation from the criterion was 1.12. In the third round, according to experts, for the explanatory dimensions of environmental performance, the most importance is related to environmental citizenship behavior with an average of 3.71 and deviation from 0.85 and the least importance is related to orbital environment with an average of 1.93 and The deviation from the criterion was 1.04. According to the results of the second stage obtained from the response of experts, the dimension of "orbital (impact on nature)" has an average of less than 2, and in this stage, this dimension is removed from the dimensions that explain the environmental performance. To be. In the fourth round, according to experts for the dimensions explaining environmental performance in the fourth round of Delphi, the most importance is related to environmental citizenship behavior with an average of 3.83 and deviation from the standard of 0.96 and the least importance is related to energy consumption with The mean was 3.08 and the standard deviation was 0.82. Kendall coordination coefficient for the answers of the fourth round is 0.827 which has increased only 3% compared to the third round which was equal to 0.797 which this coefficient has significantly increased with the degree of consensus among the working members of the group between two consecutive rounds. does not have. Therefore, the final dimensions explain the variable "environmental performance" after performing four rounds of Delphi quality technique as described: 1. Energy consumption, 2. Use of recycled equipment, 3. Use of equipment with environmental standards, 4. Environmental citizenship behavior, 5. Promoting environmental attitudes and awareness, and 6. Environmental programs and strategies were identified.

In the quantitative part, a descriptive study of the research subjects showed that 115 women (35.83%) and 206 men (64.17%), 57 single people (17.76%) and 264 married people (82.24%) Have been, In the age groups of the subjects, 24 people under 30 years (7.48%), 72 people between 31 and 40 years (22.43%), 101 people 41 to 50 years (31.46%) and 124 Others (38.63%) were over 50 years old. In terms of education, 48 people had a bachelor's degree (14.95%), 96 people (29.91%) had a master's

degree and 177 people (55.14%) had a doctorate degree. In service history, 39 people under 5 years (12.15%), 42 people (13.08%) between 6 to 10 years, 55 people (17.13%) 11 to 15 years, 83 people (86.86) 25%) between 16 and 20 years and 102 people (31.78%) have more than 20 years of service.

At this stage, by conducting a qualitative study and according to the related explanations in the qualitative part of the researcher-made questionnaire with 66 items, based on CVR and CVI calculations for each item, the content validity of the questionnaire was approved by experts. To evaluate the model, the researcher-made questionnaire, after confirming the reliability, was distributed among 364 teachers of girls 'and boys' secondary schools in Mazandaran province by multi-stage relative sampling method and the data were analyzed by exploratory factor analysis. And confirmation was analyzed by SPSS and AMOS software. To determine whether the number of data (sample size and relationship between variables) is appropriate for factor analysis? Kaiser-Meyer fitness index and Bartlett test were used. The Kaiser-Meyer fit test is an indicator of sampling adequacy that examines the small partial correlation between variables.

**Table4.** Results of KMO index and Bartlett test for green management structure

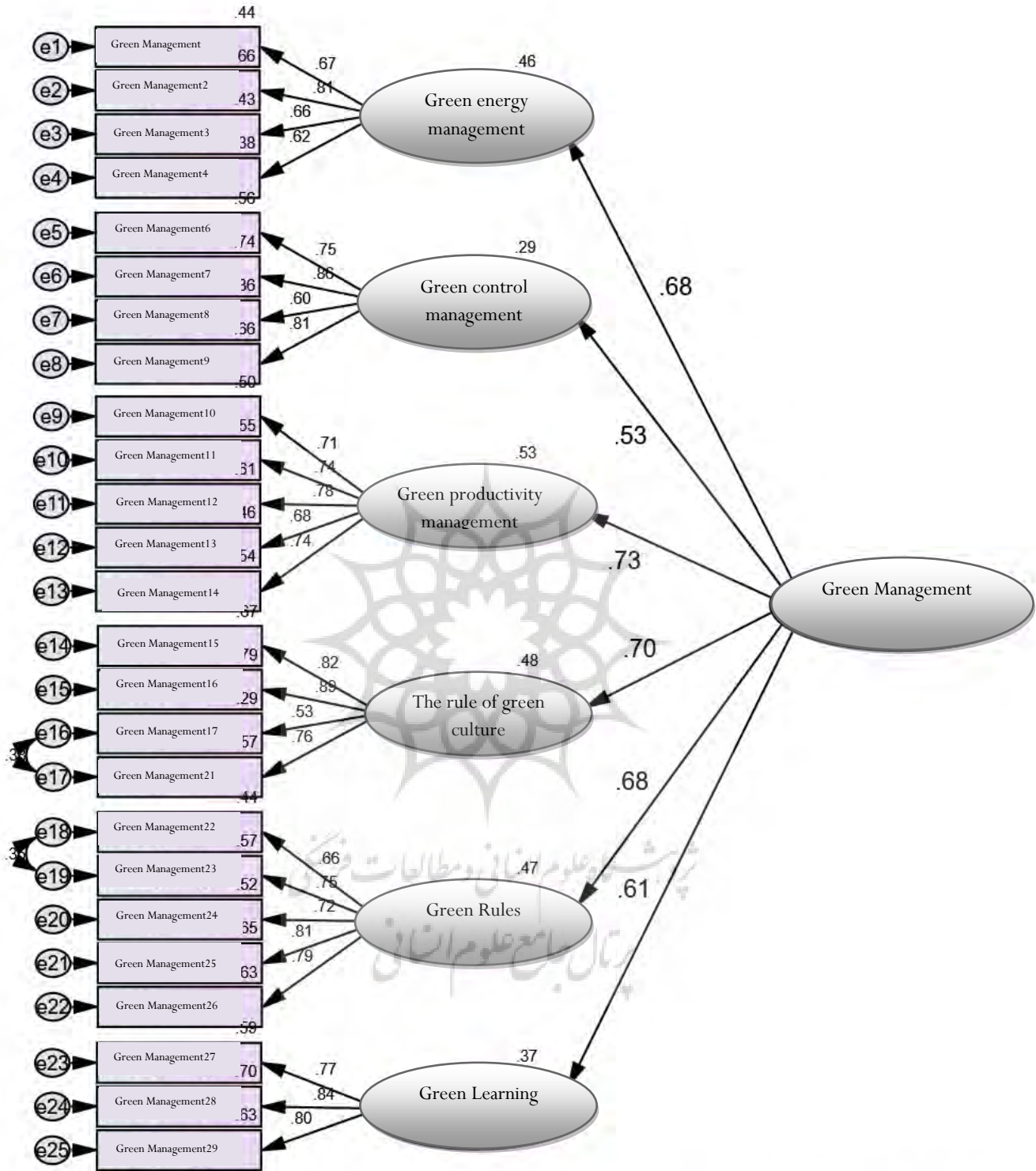
Structure	Kaiser Meyer fitness test number and Bartlett test	
	KMO	
Green management		0/870
	Bartlett	4408/605
	Df	435
	P-Value	0/0009

Table (4) shows that the KMO value (sampling adequacy) is equal to 0.870 and the significance level of Bartlett sphericity test is equal to 0.0009, Therefore, in addition to sampling adequacy, the implementation of factor analysis based on the studied correlation matrix will be justified.

To examine the research model, a second-order confirmatory factor analysis was used, which shows Figure (1) of the structural model:







**Chi\_square=618.276; DF=267; P-VALUE=.000; GFI=.881;CFI=.921;RMSEA=.060**

Figure1. Second-order factor analysis model explaining the dimensions of green management in the case of standard coefficients

**Table5.** Second-order factor analysis of the explanatory dimensions of green management

Explaining the dimensions of green management structure	Standard coefficients	Values t	P-Value	Results	Priority
Green energy management	0/68	9/228	0/0009	It is meaningful	3
Green management of waste control and disposal	0/53	8/249	0/0009	It is meaningful	6
Green productivity management	0/73	10/580	0/0009	It is meaningful	1
The rule of green culture	0/70	11/196	0/0009	It is meaningful	2
Green rules and regulations	0/68	9/618	0/0009	It is meaningful	3
Green training	0/61	9/297	0/0009	It is meaningful	5

From the perspective of the samples, the six dimensions of the exploratory model as model constructs have a significant effect on explaining green productivity management. In order to prioritize the explanatory dimensions of green management, according to the standard coefficients of the second-order factor analysis, it is considered that "green productivity management" was the first priority and then green management of waste control and disposal was the final priority. The KMO (sampling adequacy) value was 0.869 and the significance level of Bartlett sphericity test is 0.0009, Therefore, in addition to sampling adequacy, the implementation of factor analysis based on the studied correlation matrix will be justified. From the perspective of the samples, the six dimensions of the heuristic model as model constructs have a significant effect on explaining environmental performance. For the dimensions that explain the environmental performance, according to the standard coefficients of factor analysis, the second order is considered that the environmental programs and strategies are the first priority and the energy consumption dimension is the final priority.

Considering that in the section related to the second-order confirmation factor analysis, each of the dimensions explaining the model variables was prioritized, in this section, the priorities were examined using Friedman test. For the green management variable based on the average rankings obtained from Friedman test, the highest priority is related to the green education dimension with an average rank of 4.26, the second priority is the green management dimension of control and waste disposal with an average rank of 4.03, the third priority is the management dimension Green Energy with an average rank of 3.51, the fourth priority after the green management of productivity with an average rank of 3.49, the fifth priority after the rule of green culture with an average rank of 2.89 and the lowest priority related to the dimension of green rules and regulations with an average rank is 83/2. For the organizational vitality variable based on the average ranks obtained from Friedman test, the highest priority is related to the dimension of willingness to teach and learn with an average rank of 4.96, the second priority is the dimension of self-esteem with an average rank of 4.58, the third priority is social relations and Participation with an average rank of 4.34, the fourth priority of the dimension of intimacy in the workplace with an average rank of 4.25, the fifth priority of the positive thinking dimension with an average rank of 3.76, the sixth priority of the expression of emotions with an average rank of 3.30 and the lowest priority Next is the importance of assigned tasks with an average rank of 2.82.

For the environmental performance variable based on the average rankings obtained, the highest priority is related to the dimension of environmental programs and strategies with an average rank of 4.09. The second priority is after the use of recycled materials with an average rank of 4.05, the third priority is after the promotion. Environmental attitude and awareness with an average rank of 3.46, the fourth priority after the use of devices with environmental standards with an average rank of 3.25, the fifth priority after energy consumption with an average rank of 3.10 and the lowest priority related to the

dimension of environmental citizenship behavior with an average rank of 3.04. In ranking the three main variables of the model, the highest priority is related to the environmental performance variable with an average rank of 2.11, the second priority is related to organizational vitality with an average rank of 2.03 and the lowest priority is related to the green management variable with an average rank of 1.85. Be.

According to the results, the direct standard coefficient of the green management variable on organizational vitality is equal to 0.59, the value of  $t$  is equal to 6.112 and the  $P$ -value is less than 0.05. The green management variable has a significant effect on organizational vitality. Has it. The direct standard coefficient of the green management variable on environmental performance is equal to 0.42, the value of  $t$  is equal to 4.543 and the  $P$ -value is less than 0.05, the green management variable has a significant effect on environmental performance has it. The direct standard coefficient of the organizational vitality variable on environmental performance is equal to 0.62, the value of  $t$  is equal to 5.485 and the  $P$ -value is less than 0.05. The organizational vitality variable has a significant effect on environmental performance. . Finally, the mediation of the organizational vitality variable in the relationship between green management and environmental performance has been done, for this purpose using the Bootstrap method (autonomous sampling), which is a relatively new and more powerful method than classical methods such as Sobel test and Baron and Kenny method are used to investigate the mediating role of organizational vitality variable in the model. According to this method, the amount of direct effect of green management on environmental performance is equal to 0.588, the amount of indirect effect of green management on environmental performance through organizational vitality (path) is equal to 0.363 and the amount of total effect between is equal to 787 / 0 and considering that the  $P$ -value for direct, indirect routes and the total effect is less than 0.05, the effect of mediation (partial mediation) of the organizational vitality variable is significant. As a result, organizational vitality plays a mediating role in the impact of green management on environmental performance.

#### 4. Discussion

In this research, we have sought to develop a model for promoting organizational vitality and environmental performance of the university using the implementation of green management in the free universities of Mazandaran province. Dimensions of green energy management (standard coefficient 0.68 and values  $T_{9.228}$ ), green management of waste control and disposal (0.53 and 8.249), green productivity management (0.53 and 10.580), governance Green culture (0.70 and 11.196), green rules and instructions (0.68 and 9.618) and green education (0.61 and 9.297) explain the green management variable. Dimensions of positive thinking (standard coefficient 0.84 and  $T$  values of 11.987), expression of emotions (0.54 and 10.925), self-respect (0.56 and 7.755), social relations and participation (0.47 and 8.05/7), intimacy in the workplace (0.59 and 8.57), the importance of assigned tasks (0.59 and 9.457) and the desire to teach and learn (0.50 and 7.713), explaining the variable They are organizational vitality.

Dimensions of energy consumption (standard coefficient 0.50 and values of  $T_{269.27}$ ), use of recycled equipment (0.73 and 12.199), use of equipment with environmental standards (0.75 and 13.956), citizenship behavior Environmental (0.66 and 10.722), promotion of environmental attitude and awareness (0.69 and 12.916) and environmental programs and strategies (0.79 and 14.369), explaining the variable of biological performance. They are environmental.

In explaining the relationships between research variables, the results indicate that green management on organizational vitality variables (standard coefficient 0.59 and  $T$  values of 6.112) and environmental performance (0.42 and 4.543), organizational vitality variable It had a significant and positive effect on environmental performance (0.62 and 5.485). Also, organizational vitality (0.363 and probability value 0.0009) played a mediating role in the impact of green management on environmental performance. Considering the effect of green management on the organizational vitality variable, the results of the present study confirm the results of Azeri & Kaviani (2019) research and are in line with them.

Considering the effect of green management on the environmental performance variable, the results of the present study confirm the results of the research of Javedan Kherad (2019), Salaki et al (2017), Haddadi & Nosrati (2017), Nouri & Soleiman Pouramran (2016), and Is in line with them. Considering the effect of organizational vitality variable on environmental performance, the results of the present study confirm the results of the research of Hesabi et al (2018) and are consistent with them.

In explaining the results of the present study, it should be in line with the findings of previous studies (Latan et al, 2018 and Ho et al, 2016). Sustainable innovation means economic development, wealth creation at the individual and social levels while eliminating the harmful environmental effects of business on human health. Sustainable innovation is a process in which sustainability considerations (environmental, social, and financial) in the systems of organizations and firms from the production of ideas to the commercialization of products and in the business model and the provision of their services are considered.

According to Kim et al (2019) and in line with the findings of the present study, sustainability in innovation is achieved in four stages. In the first stage, there is a gradual improvement in existing products according to the needs of users.

In the second stage, the existing products are redesigned with the aim of improving the product and observing environmental considerations. In the third stage, the new product is replaced in order to meet the needs of consumers, and in the fourth stage, the product design is done for a sustainable and well-known society. In other words, by creating new market space, new products and services and designing processes under the influence of social, environmental and development-related issues, sustainable innovation takes place. The concept of sustainable development is at the heart of 21st century trends. Sustainability makes sense for a business. Especially in a world with such limited resources and environmental sensitivities, capturing the color and smell of green can be an effective policy. Smart brands believe that the solution to sustainable development lies in incorporating the principles of sustainable development into their brand fabric. Of course, these brands do not use these concepts as an advantage to sell more, although they do achieve their financial goals in the end. Sustainability means balancing development with the environment. Sustainability emphasizes not only the environmental aspects, but also the social and economic aspects.

B- Green innovation is a new process to produce a product or service, a new management method and policy or a new strategy for business development that reduces environmental risks, pollution and the negative effects of energy consumption such as water, electricity, gas, oil and... Follows. Green innovation is defined as software or hardware innovation in technology that is dependent on green products or processes and provides the conditions for energy saving waste recycling and green product design. The goal of green innovation is to reduce the adverse environmental effects on the entire product value chain from supplier to consumer (Nasibi & Abedi, 2017). Green innovation can be manifested in process, product, technology and management. Green process innovation; That is, improving existing processes and developing new processes with the aim of recycling, reusing and reproducing raw materials with methods to reduce energy consumption and biological pollution. Green product innovation emphasizes the improvement of product quality and variety at the same time according to environmental considerations. Green technological innovation includes investing in the provision of green equipment and machinery and the use of advanced green technologies. The development of new solutions for the maintenance of goods, saving material consumption and document management, is also in the category of green technological innovation. In other words, green technological innovation is the process of producing technical knowledge with the aim of reducing the negative environmental consequences (Hosie, Willemyns, Sevastos, 2018).

As many new findings such as Bangwal, Tiwari, Chamola (2017) and heavy environmental consequences follow and cause irreparable damage to the environment, they have lost their value and organizations are looking for capital, Are investing in technologies that do not have such consequences.

Green management innovation, this type of innovation refers to the organization's ability to develop and implement green projects such as green supply chain management and environmental management systems. Successful implementation of international standards and regulations, saving resources, preventing the release of harmful substances into the environment, holding conferences and training seminars related to economics, industry and green innovation for stakeholder awareness, are among the measures taken in The format of green managerial innovation is described. C. Eco-innovation is the development of products and processes that contribute to sustainable development. This innovation ranges from the development of environmentally friendly technologies to community-accepted innovations for sustainability. The most common use of the term eco-innovation is to refer to creative products and processes that reduce the extent of environmental damage. This term is mostly used alongside eco efficiency and eco design. There are more than three million jobs in the EU in the green industry and in the production of environmentally friendly goods and services. In most countries, requirements and regulations for the development of environmentally friendly products are laid down, implemented and evaluated. In Iran, however, there are laws, regulations regarding the exit of polluting industries from metropolitan areas and the establishment of some industries within certain radii and geographical locations, as well as requirements regarding the observance of standards in accordance with environmental issues. However, the announcement of general environmental policies by the Supreme Leader in December of last year shows the emphasis on the establishment of sustainable innovation, green innovation and environmentally friendly innovation.

Many findings (Safahan, Bakhtiari, 2016) emphasize the development of green economy, especially in the low-carbon industry, the use of clean energy, healthy and organic agricultural products, and the management of waste and effluents by utilizing economic, social, natural and environmental capacities and capabilities. In addition to modifying the production pattern in various economic and social sectors and optimizing the pattern of water consumption, resources, food, materials and energy, especially the promotion of environmentally friendly fuels and the development of green and non-fossil public transportation, including electricity and increasing public transportation. This is one of the most important issues in these findings, especially in metropolitan areas. The criminalization of environmental degradation and the effective and deterrent punishment of polluters and environmental degraders and their obligation to compensate is a very important point mentioned in paragraph 4 of environmental policies and is an effective step towards establishing a green economy and innovation. What is certain is that the development of economy, industry and green innovation requires culture building and efforts of each committed and responsible citizen of the country and as a governance issue, all pillars of the system must adhere to it. Based on the above findings, University environment is proposed using green management implementation in free universities of Mazandaran province.

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