The Impact of Artificial Intelligence on Gender Equality in the Workplace: An Economic Geography Perspective

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Abstract

Equality in the workplace means that people who come out of their gender have the same resources and opportunities for advancement and earning in organizations. This means that employees who have similar roles and look alike are paid the same. Also, all employees should have the opportunity for job promotion and advancement. In equal organizations, the only feature of job promotion is the competence and abilities of people, not their gender. Quantitative research method - content analysis has been used to investigate the field of study. The indicators and indicators determined in the theoretical field of research have been identified at the level of review and evaluation and review and evaluation of the criteria determined in this field according to gender. According to the current research, the best way to create gender equality in the workplace is to first understand in which areas there is discrimination and then take action to eliminate the discrimination. The next question was about creating a work-life structure for many employees. Today's living conditions do not allow many to be at work at 8 in the morning and go home at 4 in the afternoon. A person may do his work from 6 am to 2 pm and another person does a friend from 10 am to 6 pm. Organizations can treat their employees more fairly by creating diverse work schedules, such as reception work or telecommuting.

Keywords: artificial intelligence, gender equality, the perspective of economic geography.

Introduction

There is no doubt that new technologies such as artificial intelligence have much strength to help people overcome their weaknesses and fears, as well as improve their lives. However, concerns about its negative consequences cannot be ignored and not thought about. For example, it is predicted that with the further expansion of artificial intelligence shortly, women's rights will be affected in various ways, such as the violation of the right to work the damage caused by the exploitation of artificial intelligence, and the imbalance of employees' attitude toward AI, some of which we will examine below.

Increasing the need for skilled and capable forces to work with intelligent systems: with the expansion of artificial intelligence and related technologies, the need for expert personnel in this field will increase, and anyone who does not have sufficient knowledge in this field for any reason will have less opportunity. It will work to participate in the market. Meanwhile, the reports of international organizations that have dealt with the issue of empowerment and eliminating gender gaps, show that women will suffer more in this area.

A recent United Nations report declared that achieving the goal of gender equality is not "possible" in the current situation and confirmed that the world is failing women and girls. This report emphasizes that government budgets for women's empowerment are insufficient all over the world and the existing budget is distributed unfairly. According to this report, the United Nations

failed to achieve the 27 goals it had set to advance the position of women in the world, due to "rooted prejudices" in the fields of education, health, employment, and the existence of groups and factors that hold power in these fields. "Impossible".

This report stated that in the current year, about 222 million girls and young women are deprived of education, which is a fundamental right; A deprivation that exposes girls to violence and exploitation. Regarding employment, according to this report, among the countries of the world, in 2020, women held only one out of every three research positions, and in the scientific and technical fields, one out of every five jobs was held by women.

These discriminations and restrictions on access to culture and education per capita for the women's community created the basis for the fact that in 2022, men will register five times more new applications than women, which are derived from knowledge and new technologies. The feedback of these persistent gender barriers in jobs critical to the development of science and technology also speaks of the limited role of women. The continuation of the current situation, even in an era where artificial intelligence is widespread, will unfairly lead to the exclusion of more women (Norouzian & Sarabi, 2023).

Negative bias of algorithms: As we move forward, more and more companies and governments will use artificial intelligence in hiring or other qualification processes (Samami et al., 2024). In Badi Amer, algorithms were used to create more speed, double productivity, and facilitate affairs; But a very important side benefit was also drawn for them, and that was avoiding prejudice and human biases in analyses and decisions. The general idea was that by using these algorithms, we would be freed from bias and making decisions based on specific assumptions;

This was not achieved in the executive branch. A clear example of this problem goes back to Amazon's use of artificial intelligence to hire human resources and the problems caused by it. Amazon's artificial intelligence algorithm had adopted a discriminatory approach in the hiring process, with a negative bias towards women. The process was designed in such a way that after reviewing the resumes, each of them was assigned between one and five stars.

However, the algorithm did not systematically assign points to women's resumes for technical jobs such as programming. After realizing this, the company stopped using that AI algorithm. But the point is that the algorithms use the data that we humans provide for them; as a result, our bias is reflected in the data we consider for the algorithm. If these data have gendered stereotypes, using this technology will continue gender bias.

Direct replacement: the automation of processes due to the presence of artificial intelligence will cause the loss of more job opportunities for women than for men. The recent report of the International Labor Organization has also addressed this issue. In this ILO report, it is stated that the adverse gender effects of artificial intelligence are likely to be significantly different for men and women; more than twice the share of women's employment will potentially be affected by automation, due to the overrepresentation of women in administrative jobs, especially in high- and middle-income countries (Zakerhaghighi et al., 2015).

Women workers will also see a significant impact with the introduction and dominance of artificial intelligence technology in the labor market and production lines. IBM's report stated that 77% of workers, a significant part of whom are women, will be left out when faced with technology based on artificial intelligence and automation, especially in production lines if they are not synchronized (Karimimansoob et al., 2024- a). It should be kept in mind that this amount of changes includes the increase in productivity and economic benefits due to the efficiency of artificial intelligence technology; but social costs, etc (Zaker Haghighi et al., 2014).

The impact of the unemployment crisis and lack of access to job opportunities should not be ignored. What to watch: It is important to examine how artificial intelligence might address the risk of perpetuating gender inequalities and discrimination, or more precisely, how these risks can be mitigated through policy measures and help reduce gender inequalities. To create change, it should be considered that women should not be just passive recipients of services, but they should be considered the main players in the process of change so that the achievements or consequences of it, which is the empowerment of women, are realized (Norouzian & Gheitarani, 2023).

One of the important tools for empowering women is the level of education, having the right to own property, eliminating discrimination in the labor market, and eliminating traditional attitudes towards them. Through positive impact on women's social status, employment, and education increases the ability to live independently, the power of expression, awareness of the outside world, and the ability to influence decisions, independence, and power of women (Naghibi Iravani et al., 2024- b).

It should be kept in mind that empowering women is not just giving them power. Empowerment is the release of this power, and one of the tools that can be used to strengthen women's empowerment is artificial intelligence technology that is free from biases stereotypical views, and angled economic accumulations towards women, which can increase equal opportunities in favor of women and provide the basis for their empowerment. In this regard, the actions of Saudi Arabia can be examined (Khanian et al., 2019).

This country defined and operationalized many developments and changes in the path of economic reforms, redefining the rights and role of women's citizenship in recent years, and applying artificial intelligence technology in this field (Gheitarani et al., 2024). Therefore, to improve the level of women's empowerment and reduce the gender effects of artificial intelligence on women's society, a program called Elevate in cooperation with Google Cloud in the field of training data and artificial intelligence skills, plans to train more than 25 thousand women in five years, not only in Teach your country but also around the world (Kahvand et al., 2015).

In this program, Saudi Arabia's Information and Artificial Intelligence Organization has selected 2,000 women from 28 countries, including Saudi Arabia, the UAE, Kuwait, Oman, and Mauritania, to eliminate the gender gap in science in line with the sustainable development goals of the United Nations. It is now training women to acquire the skills needed to pursue careers in emerging markets. Meanwhile, the glass ceiling of work for capable women in the country continues and these valuable human capitals are ignored. You have to wait for the future (Ghourchi, M. et al., 2018).

Theoretical

Artidficial Inteligence. Artificial intelligence became an academic discipline in 2857, and in the years since then it has experienced several waves of optimism, then again waves of disappointment and lack of funding (the so-called "AI winter"), followed by new technologies. The success and research budgets of this field have been revived (Safaei Mehr, M., 2023). AI research has tried and discarded different approaches since its inception, such as brain simulation, modeling problem solving by the human brain, formal logic, large knowledge databases, and mimicking animal behavior.

In the first decades of the 22nd century, machine learning that heavily utilizes mathematical statistics dominated the field, and this technology proved to be highly successful and helped solve several challenging problems in industry and academia. Different branches of artificial intelligence research are focused on specific goals and use specific tools (Ghadarjani et al., 2013- a). Traditional AI research goals include reasoning, knowledge representation, planning, learning, natural language processing, perception, and the ability to move and manipulate objects. Comprehensive intelligence

(the ability to solve arbitrary problems) is among the long-term goals of this field. To solve such problems, AI researchers have applied broad and integrated problem-solving techniques including mathematical search and optimization, formal logic, artificial neural networks, and methods based on statistics, probabilities, and economics (Gheitarany et al., 2013).

AI is also related to fields such as computer science, psychology, linguistics, philosophy, and many other fields. This branch is based on the assumption that human intelligence" can be accurately described so that it can be simulated by a machine" (Sarabi et al., 2023- a). This assumption has sparked philosophical debates about the mind and ethics of creating intelligent beings, beings with human-like intelligence (Khanian et al., 2013). These issues have been explored by legends, fiction, and philosophy since ancient times. Science-fiction and futurist literature also suggest that AI with its enormous potential and power may lead to an existential risk for humanity (Naghibi Iravani et al., 2024- b).

Turing test. The Turing test is a test proposed by Alan Turing in 2850 in a writing called "Computation and Intelligence". In this test, conditions are provided for a person to interact with a machine and ask enough questions to check the machine's intelligent actions. If at the end of the test, he cannot distinguish whether he has interacted with a human or a machine, the test has been completed. So far, no car has successfully passed this test (Gheitarani et al., 2020). This test attempts to determine the correctness of the intelligence of a system that tries to simulate humans.
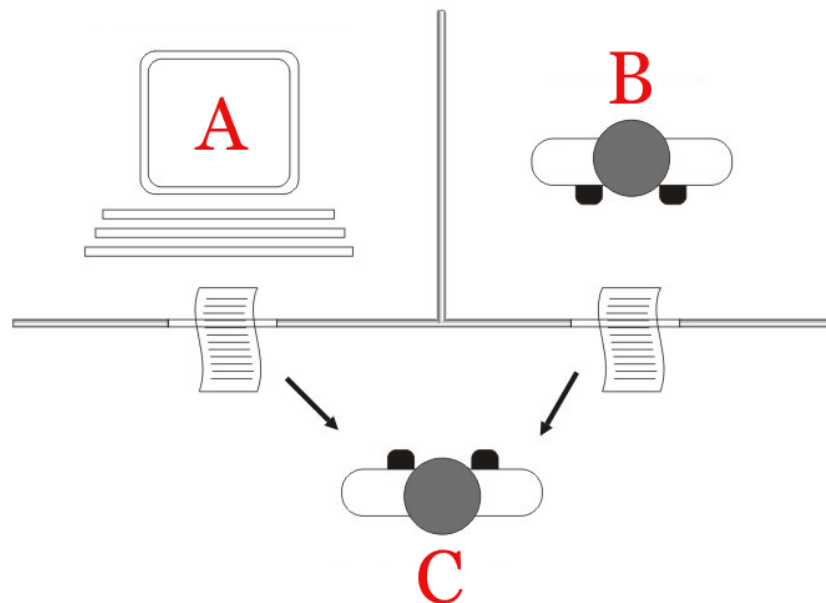

Figure 1. Intelligence calculations in the Turing test

Gender equality in the workplace. Today, women's employees' attitude toward AI in the development of social and economic activities has increased significantly, but the income gap between men and women in the labor market is one of the most important discriminations that has accompanied the increase in women's employees' attitude toward AI in the labor market in recent years (Sarabi, M., et al., 2023). Equality in the workplace means that the employees of the organization, regardless of their gender, have the same resources and opportunities for advancement and rewards in the organization. This means that employees who have similar roles and do similar work should be paid the same (Ghadarjani et al., 2013- b).

Also, all employees should have the opportunity for job promotion and development. In equal organizations, the only criterion for job promotion is people's competence and abilities, not their gender. According to statistics, in the United States in 2020, women earned $0.72 to $0.87 for every dollar earned by men. Therefore, eliminating gender gaps is an important issue for organizations around the world. Salaries and wages. The first and most important part that shows discrimination is wages. Many women claim that they are paid less than men for doing the same work (Karimimansoob et al., 2024- b). In male-dominated organizations, everyone acts in favor of men, and in female-dominated organizations, everything is in favor of women. Some examples of discriminatory behavior in patriarchal organizations are:

• All important opportunities and missions are entrusted to men and women do not get a chance to show their abilities.

• Men are praised for all the positive things they do, but women will be reprimanded for the slightest mistake and no one appreciates their efforts.

• Senior managers speak respectfully to men, respect them, support them, and provide them with the resources they need to progress.

• In contrast, their behavior toward women is the opposite; They destroy women's self-confidence, don't give them a chance to progress, and may even behave disrespectfully towards women.

Discrimination in the selection of managers
• Many women are overlooked when it comes to promotion.
• One of the old misconceptions is that men manage better than women.
• This wrong thinking is still rooted in society and has caused women to be ignored when choosing management positions and job promotions (Naghibi Iravani et al., 2024- a).

Discrimination in employment
• Based on research, there is a possibility that men's resumes will be seen and checked earlier than women's when hiring, especially if the employer is a man.
• Even at the beginning of the recruitment process and when nothing is clear, men have more chances to be invited to a job interview.

Of course, it cannot be said that this gender inequality is always in favor of men because some organizations allocate some of their positions only to women and do not hire men (Norouzian, M. M., 2024; Norouzian & Gheitarani, 2024).

*Why does gender inequality exist***?** Gender inequality in Iran and the world has various causes. For example, one of the reasons for the wage inequality between women and men is that many times women are willing to work for a lower salary than men. Women who are responsible for taking care of their family and children usually prefer to have flexible working hours, even if they receive less pay for this. Other causes of inequality in organizations are related to culture, misconceptions about women's capabilities, and deep-rooted misconceptions in society (Maleki et al., 2024).

Economic geography. Economic geography is the science of studying the location, distribution, and spatial organization of economic activities in the world. Economic geography is traditionally considered a branch of the science of geography, but in recent decades, it has gained significant and successive scientific and political effects. Some economists consider it a branch of economics. Economic geography has a variety of perspectives in different fields, including industrial location, economic density, transportation, foreign trade, development, real estate, moral economics, gender economics, workplace economics, the relationship between the environment and the economy, and globalization.

The history of economic geography has been influenced by different perspectives, especially the perspectives of economics and geography. The oldest texts on geography can be attributed to the Greek geographer Strabo, which was written about 2000 years ago. Simultaneously with the development of cartographic knowledge, geographers expanded many aspects of geography knowledge. In recent centuries, the maps produced by European countries determined the location of resources and mines in the American, African, and Asian continents. The first travelogues had various descriptions of native people, weather, scenery, and productions of different regions (Sarabi et al., 2023- b).

This encouraged the development of continental trade patterns and led to the age of mercantilism. The Second World War increased geographical awareness and the economic reconstruction program after the war caused the development of economic geography as a scientific discipline. At the time of the popularity of the theory of geographical determinism, Ellsworth Huntington and his theory of climatic determinism, which was later criticized, left a definite impact on the field of economic geography. Theorists such as Johann Heinrich van Tonen and Alfred Weber expressed their ideas about the distribution and dispersion of the economy based on location (Gheitarani et al., 2013).

Walter Kristaller's place-centered theory was also considered one of the important views. Today, economic geographers tend to study specialized topics such as theories and spatial analysis with the help of geographic information systems, marketing research, transportation geography, real estate price evaluation, regional and global development, planning, internet geography, innovation, and social networks.

Methodology

In the current research, according to the general purpose of the research, this research can be considered as applied research. Applied research is research that uses the theories, rules, principles, and techniques developed in basic research to solve practical and real issues. This type of research emphasizes more on the most effective action and pays less attention to the causes. This emphasis is more because applied research is directed towards the practical application of knowledge. We use the quantitative research method - content analysis in the investigation of the studied area and investigate and evaluate the criteria and indicators extracted from the theoretical framework of the research at the level of the studied area and find the critical paths of influence on gender equality in the workplace.
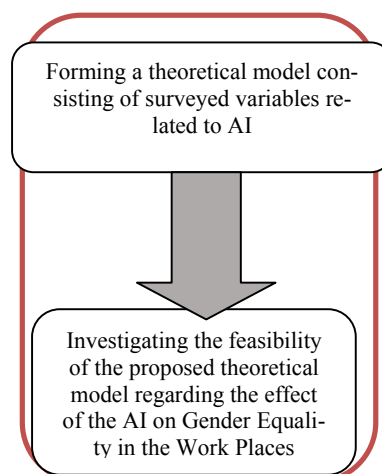

Figure 2. Quantitative research method - content analysis
Source: Author, 2024

In the content analysis method, an attempt is made to provide a comprehensive understanding of the phenomena by observing all aspects of a concrete phenomenon and examining its process about other phenomena that surround it. Some consider a case study as a research design that can be used for the systematic study of a phenomenon.

Explanation of the primary research model and other structures. According to the assumptions of the present research, indicators such as the attitude of the employees toward AI, and the level of gender equality among this research study sample who are the employees of Region 22 of Tehran Municipality as the sample community who participated in this study.

Among the hidden variables that can have direct effects on economic employees' attitudes toward AI as one Factors and indirect effects on local resilience. Figure No. (2) Shows the economic hidden variables that have been raised in the assumptions of the present study along with the proposed influencing paths (direct and indirect), (Ghadarjani et al., 2013- a). In this Figure, the mechanism of influencing the economics of the residents of the Region from people's employees' attitude toward AI directly on the variable of employees' attitude toward AI and also through the effects it has on the perception of security and the formation of social capital among citizens. Figure (3) shows the proposed model of other influencing factors on Gender Equality in the Workplace.
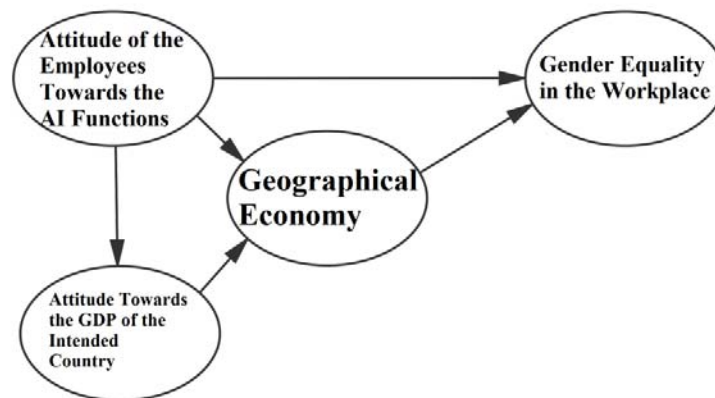

Figure 3. The proposed model of other influencing factors on Gender Equality in the Workplace (drawn in Amos software)
Source: Author, 2024

In each statistical population model, it can be different. For example, in the exploratory factor analysis, the cluster random sampling method to record maximum opinions, and the structural equations method measuring the relationship between the Geographical Economy approach and the Gender Equality of Tehran can be selected as the statistical population. Determining the sample size in the structural equation method should be at least 200 questionnaires and at most 400 questionnaires (Aghazadeh et al., 2018). The sampling method is generally the cluster sampling method. In the exploratory factor analysis, the Likert scale will be used to determine the sample size.

Descriptive statistics of Region 2 Municipality Employees in Tehran (study area). The historical elements in that Region have turned it into a historical Region, which requires preservation. Also, a part of the Region is dilapidated and needs reconstruction and in some cases renovation. Region 2 Municipality Employees in Tehran (study area) has an area equal to 257 hectares and a population of approximately 27000 people. This Region has 2770 blocks and 4852 plaques, which mostly lack geometric order and average grain (Aghazadeh et al., 2017).

Results

Common indicators of employees' attitude toward AI and resilience. After categorizing the defining indicators of the two concepts of employees' attitudes toward AI and resilience concerning theoretical theories and literature and applied research conducted inside and outside of Iran, this part is based on two-way communication and the prevalence of using these two groups of indicators, joint indicators of employees' attitude toward AI and resilience and the number of references and use of indicators in sources will be determined (Aghazadeh et al., 2019). Table (1) shows the common indicators of employees' attitudes toward AI and resilience and the number of references to these indicators. In Table (1), sixteen indicators explain the concept of Employees' Attitudes Toward AI and six indicators explain the concept of Gender Equality.

Table 1. Common Indicators of Resilience Employees' Attitudes Toward AI Gender Equality Indicators

Number of referrals	Employees' Attitudes Toward AI	Number of referrals	Gender Equality Indicators
20	The number of software used in work	25	The ratio of the number of female to male household heads
28	The number of decisions that are made based on computer calculations	28	Marriage age of women
27	The number of posts that require expertise in using technological tools	27	Average monthly income of female heads of household
25	The number of posts stops in the absence of smart technology	22	The percentage of facilities allocated to women, especially in offices
27	Several tools that work with AI.	28	The ratio of assigning women to managerial positions in departments to male managers
22	Number of formal tasks delegated directly to AI	27	The total area dedicated to women in workplaces compared to the same index for men
		22	The number of days off for women's affairs
		28	The number of working hours
		22	The amount of overtime allowed
		20	Career diversity
		27	Job Variety
		24	The number of executive positions compared to managerial positions for women
		27	The number of women participating in decision-making meetings compared to men
		27	Number of women attending financial meetings compared to men

Number of referrals	Employees' Attitudes Toward AI	Number of referrals	Gender Equality Indicators
		25	The number of hours allocated to women and men for rest in a working day
		24	The number of purchase credits or financial loans allocated by the management to women working in that institution compared to men

Source: Author, 2024

Measuring the factors of employees' attitude toward AI in Region 2 Municipality Employees in Tehran (study area) in Tehran city. In the aspect of the workplace, there are various questions such as geographical economy with the size of the workplace, geographical economy with the design and furniture of the workplace, geographical economy with the price of the workplace, etc., which are considered very clear and transparent questions in the eyes of the people. On the other hand, they are considered standard indicators of employees' attitudes toward AI in the physical dimension, they have been set (Dizaji et al., 2023).

In terms of facilities and equipment, similar to the documented indicators of this section, the services related to the environment of the workplace, which is mostly infrastructure facilities and includes the geographical economy of facilities and equipment such as water, electricity, gas, telephone, and sewage, have been regulated. The relevant indicators have very clear questions and have a special place in the texts related to workplace literature. It is possible that many indicators related to employees' attitude toward AI if they have positive conditions, cannot have a favorable result without the relevant infrastructure indicators.

For example, access to good drinking water affects many health indicators (GHADARJANI & GHEITARANI, 2013). On the other hand, in this section, a special question has been prepared that measures the level of the current geographical economy compared to the level of geographical economy of the past four years and shows that the perception of the people of Region 2 Municipality Employees in Tehran (study area) in Tehran city about economic quality and the improvement or degradation of economic quality indicators in How can the length of a period be evaluated?

In other words, employees' attitudes toward AI in its general meaning have been measured in previous years and compared to the exact current situation. To complete the economic image of the people in the past, and present and the economic prediction of the future based on their special requirements, another question has been prepared that shows the level of hope of the people of Region 2 Municipality Employees in Tehran (study area) in Tehran city regarding the improvement of employees' attitude toward AI indicators in the future.

The employees' attitude toward AI recognition questionnaire in Region 2 Municipality Employees in Tehran (study area) in Tehran City was designed after extensive studies in the field of employees' attitudes toward AI and using the selected conceptual model of the study (Farrokhirad & Gheitarani, 2024). It has also been tried to match the conceptual model, dimensions, indicators, questions, and items with the special conditions of Region 2 Municipality Employees in Tehran (study area) in Tehran city.

This questionnaire is based on 22 main dimensions. The total number of parameters is 207 and at the end of the questionnaire, 27 questions related to the characteristics of the respondent are included such as age, type of workplace ownership, occupation of the respondent, cost of living, and level of education. The designed questionnaire has the necessary comprehensiveness so that based on thirteen main dimensions, measuring the condition of the workplace, facilities and equipment,

workplace facilities and services, transportation, employment, and economic conditions, education, recreation and entertainment, health and healthcare, civil society and workplace governance, family, security, environment and overall geographical economy with workplace are predicted. Table (2) shows the number of items in each dimension.

Table 2. The number of measures of each dimension of employees' attitudes toward AI

Number of indices	Indices numbers	Aspect	Row	Number of indices	Indices numbers	Aspect	Row
7	70 to 75	Recreations and entertainment	7	22	2 to 22	Workplace	2
7	77 to 72	health and hygiene	8	7	22 to 27	Facilities and equipment	2
28	72 to 80	Civil society and governance	20	22	28 to 20	Municipal facilities and services	2
7	82 to 87	Security and safety	22	8	22 to 28	Workplace transport	4
7	87 to 202	the environment	22	8	40 to 47	Employment and economic conditions	5
4	204 to 207	Overall geographical economy	22	5	48 to 52	Education	7
				7	54 to 58	Family	7

Source: Author, 2024

The answers to the questions are also arranged in the form of a five-point Likert scale and the form of the level of geographical economy separately (very high, high, medium, low, and very low). To easily answer each question and avoid wasting time, a five-point spectrum has been designed in front of each question so that the respondent can easily choose the desired option according to his wishes and according to his economic requirements. An example of a duplicated questionnaire for the survey is given in the previous chapter. This questionnaire was completed based on the sampling method determined in Region 2 Municipality Employees in Tehran (study area) in Tehran city.

The time frame of carrying out the employees' attitude toward AI survey in Region 2 Municipality Employees in Tehran (study area) in Tehran city. Time and cost are two important factors in conducting field surveys. The reason for this is to create a time and cost limit in the navigation, which can be effective in how to do it. The initial estimate for conducting the survey was considered to be about 2 working months (from July 2024), and considering the implementation process, there was not much problem in this field. Conducting survey preparations, including questioning, preparing and duplicating questionnaires, providing basic supplies, etc., for about 20 days, conducting surveys for about 40 days, and entering data from questionnaires and converting them into electronic files for analysis with the desired software was considered for about 25 days.

Analytical statistics related to factors. Statistical analyses in the present study show a statistically significant relationship between geographical economy with the workplace and overall geographical economy with the workplace in Region 2 Municipality Employees in Tehran (study area) in Tehran City at a significance level of less than 0.05 (Sig<0.05, R=0.275). Such a correlation exists for most of the indicators with the overall geographical economy of employees' attitudes toward AI, although its intensity is different. In table (3), these relationships are specified.

Table 3. Information related to the correlation between indicators (factors) of employees' attitudes toward AI measurement

Correlation intensity	The significance level	The correlation coefficient	The second variable	The first variable
Strong	Sig<0. 05	0.74	social employees' attitude toward AI	Geographical economy with the workplace situation
Poor relationship	Sig<0. 05	0. 22	social employees' attitude toward AI	Condition of facilities and equipment
Poor relationship	Sig<0. 05	0. 27	social employees' attitude toward AI	State of workplace facilities and services
Average relationship	Sig<0. 05	0. 42	social employees' attitude toward AI	State of workplace transport
too strong	Sig<0. 002	0.78	social employees' attitude toward AI	Employment status and economic conditions
Poor relationship	Sig<0. 05	0.27	social employees' attitude toward AI	Education status
Poor relationship	Sig<0. 05	0.70	social employees' attitude toward AI	Family situation
Average relationship	Sig<0. 05	0. 27	social employees' attitude toward AI	The state of recreation and entertainment
Average relationship	Sig<0. 05	0. 44	social employees' attitude toward AI	Health status and healthcare
too strong	Sig<0. 05	0.82	social employees' attitude toward AI	Geographical economy with civil society and workplace governance
Poor relationship	Sig<0. 05	0. 27	social employees' attitude toward AI	Security and safety situation
Average relationship	Sig<0. 05	0. 42	social employees' attitude toward AI	The state of the environment

Source: Author, 2024

As in Table (3), it is shown that among all the factors and their indicators, the geographical economy with workplace and employment conditions and economic conditions are significantly smaller with correlation coefficients (0.57 and 0.78) respectively. From 0.002, they have the highest correlation with the variable of overall geographical economy with the workplace. Also, among these, the variables of geographical economy with the state of facilities and equipment, workplace

facilities and services, and geographical economy with civil society and workplace governance have the lowest correlation with the variable of overall geographical economy with the workplace at a significant level of less than 0.002. Table (4) shows Cronbach's alpha coefficient for each of the variables of the factors, the average value of each variable, and the standard deviation for them.

Table 4. Survey tool of employees' attitude toward AI measurement model through factors

Cronbach's alpha	The standard deviation	Average	Variable name
0.72	0. 777	2. 42	Geographical economy with the workplace situation
0.72	0.778	2. 72	Condition of facilities and equipment
0. 77	0.772	2. 24	State of workplace facilities and services
0. 78	0.722	2. 22	State of workplace transport
0.72	0. 702	2. 47	Employment status and economic conditions
0. 77	0.777	2. 82	Education status
0.74	0.780	2. 22	Your family situation
0.72	0.728	2. 40	The state of recreation and entertainment
0.70	0.778	2. 77	Health status and healthcare
0. 78	0.742	2. 24	Geographical economy with civil society and workplace governance
0.72	0. 727	2. 22	Security and safety situation
0.72	0.742	2. 27	The state of the environment
0.72	0.777	2. 48	Overall geographical economy with workplace

Source: Author, 2024

Out of a total of 752 people who participated in the survey related to the factors of employees' attitudes toward AI measurement, a total of 578 people filled out the questionnaire correctly and completely and participated in the study. Therefore, the response rate of the participants to the current questionnaire was 80.28%. As shown in this table, all the Cronbach's alpha coefficients related to the variables are higher than 0.7, which shows the adequate reliability of the present questionnaire.

Table 5. The number of measures of variables related to factors of employees' attitude toward AI measurement

Number of indices	Gauge numbers	Aspect	Row
5	2 to 5	Employees' attitude toward AI	2
5	7 to 20	Attitude toward GDP	2
5	22 to 25	Geographical Economy	2
2	27 to 27	Gender Equality	4

Source: Author, 2024

The answers to the questions are also arranged in the form of a five-point Likert scale and the form of the level of geographical economy separately (very high, high, medium, low, and very

low). To easily answer each question and avoid wasting time, a five-point spectrum has been designed in front of each question so that the respondent can easily choose the desired option according to his wishes and according to his economic requirements. An example of a duplicated questionnaire for the survey is given in the previous chapter.
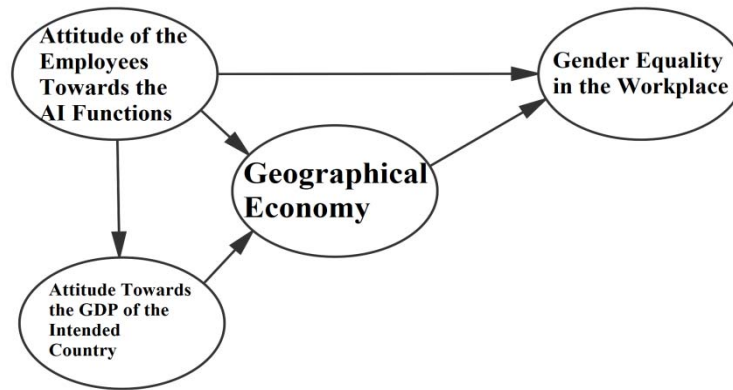

Figure 4. The proposed model of other influencing factors on Gender Equality in the Workplace (drawn in Amos software) Source: Author, 2024

This questionnaire was completed based on the sampling method determined in Region 2 Municipality Employees in Tehran (study area) in Tehran city.

Table 6. Indicators suggested by some researchers

Proposed indexes								Scholar's name
R^2	SRMR	PNFI	NNFI	NFI	CFI	RMSEA	X^2	
			*	*	*		*	McDonald ,R. P. & Ho, R. M. 2002
	*		*		*	*		Hu, L. T &bentler, P. M. 2888
*	*				*	*	*	Kline, R. B. 2005
*	*				*	*	*	Boomsma, A. 2000
	*	*			*	*	*	Hooper et al,2007

Source: Author, 2024

Homan declares the acceptable limit for the above indicators as follows. In this chapter, the writer based on his opinion compiles the indicators of his model based on the criteria mentioned by Homan (Aydin et al., 2020). Table (6) shows Cronbach's alpha coefficient for each of the variables of the factors, the average value of each variable, and the standard deviation for them.

Table 7. Survey tool of employees' attitude toward AI measurement model through factors

Cronbach's al-pha	The standard deviation	Average	Variable name
0. 7. 7	0.752	2. 47	Region residents' economics of employees' attitude toward AI
0.72	0. 777	2. 28	Social capital

Cronbach's al-pha	The standard deviation	Average	Variable name
0.75	0.707	2. 22	Workplace management approach
0.75	0.742	2. 87	Resilience

Source: Author, 2024

Out of a total of 227 people who participated in the survey related to the factors of employees' attitudes toward AI measurement, a total of 200 people filled out the questionnaire correctly and completely and participated in the study. Therefore, the response rate of the participants to the current questionnaire was 74.27%. Table (7) shows the average values, standard deviation, and Cronbach's alpha for each of the variables related to the factors of employees' attitudes toward AI. As shown in this table, all the Cronbach's alpha coefficients related to the variables are higher than 0.7, which shows the adequate reliability of the present questionnaire. The model fit indices were measured as (CFI=0.825, RMSEA=0.02, X2/DF=2.42, RMR=0.05), which shows the acceptable level of model fit.

Also, all the standardized factor loadings for the hidden variable measurement model of place attachment were statistically significant and were calculated at an average level (about 0.7). All standardized factor loadings for the social capital variable were also factorially significant and measured at an average level (0.4). These values were measured for the security perception variable at an average level (0.4) and for the economic employees' attitude toward AI variable at an average level (0.55). In the present sample, the chi-square value with 75 degrees of freedom is equal to 222.077, which is not statistically significant because its significance level is relatively large (more than 0.05).

It can be concluded that the chi-square test confirms the exact fit of the model with the observed data. On the other hand, the chi-square ratio to the degree of freedom is equal to 2.427 and smaller than 2. In addition, the root mean square error of estimation (RMSEA) is equal to 0.027 and its 80% confidence interval is between 0.025 and 0.077. Because the lower limit of this value is less than 0.05, it can be concluded that the degree of approximation of the model in the community is not large.

The root mean square residual index of the root mean square residual (RMR) is equal to 0.052, which is very small and indicates the small error of the model and the acceptable fit of the model. Table (8) shows the fit indices of the model.

Table 8. Model fit indices

Indices	Acceptable Range	Calculated
Chi-square (X^2)	Smaller is better	222. 077
Chi-square/degree of freedom	Below 2. 0	2. 42
Root Mean Square Error of Approximation (RMSEA)	Below 0. 05	0. 027
Root mean residual (RMR)	Below 0. 07	0. 052
CFI	More than 0. 8	0. 82

Source: Author, 2024

Measuring the relationship between and factors of measuring employees' attitude toward AI. Considering the general purpose of the present study, which is to verify the comprehensive model of promoting workplace employees' attitudes toward AI through factors, at this stage, we

measure the correlation between the set of factors. For this purpose, through correlation analysis, the statistical relationship of the set of factors in measuring workplace employees' attitudes toward AI is investigated. To measure the correlation between external factors, the correlation between both sets of data should be tested. In the part of factors, employees' attitude toward AI is measured and measured through citizens' perceptions of their living conditions and variables. In the field of factors, however, employees' attitude toward AI is measured by other factors that affect citizens' judgment of their workplace conditions apart from factors.

Therefore, it will be possible to examine the relationship between factors through citizens' perceptions of their living conditions. Through correlation analysis, it was found that two categories of factors have a strong correlation with each other. In this context, the value of the correlation coefficient or the value of the coefficient (R) is 0.72 at the significance level of p<0. 002 was calculated that the magnitude of this coefficient indicates the existence of a very strong and statistically significant relationship between the two variables of economic employees' attitude toward AI in the questionnaire of factors and the questionnaire of factors.

Therefore, it can be concluded that in the comprehensive model of measuring employees' attitudes toward AI through factors, there is a strong relationship between and external factors. Therefore, in the comprehensive model of promoting employees' attitudes toward AI through factors, both variables of employees' attitude toward AI can be shown in the form of one variable and the mechanism of the effect of this variable on overall employees' attitude toward AI can be depicted. Table (9) shows the result of the correlation analysis between external factors.

Table 9. The result of the correlation analysis between factors

		SP2	SP2
AI	Pearson Correlation	2	0. 72**
	Sig. (2-tailed)	-	0. 000
	N	200	200
GE	Pearson Correlation	0. 72**	2
	Sig. (2-tailed)	0. 000	-
	N	200	200

** **Correlation is significant at the 0. 02 level (2-tailed). Source: Author, 2024**

Discussion

The new report of LeanIn - a website active in the field of women's work and activities in the world - and McKinsey & Company - a company active in management consulting - in 2022 on the topic of women in the workplace showed that the special mission of supporting the well-being of employees and promoting the slogan - DEI stands for three words: Diversity, Gender Equality in the Workplace, and Inclusion - It's not doing well for women. In other words, women are not appreciated for this reason. An interesting point was mentioned in this report, and that is that companies give special appreciation for doing work standards correctly. Which is more about men, while women managers are more likely to be exposed to burnout and chronic psychological pressures in the workplace.

The published report on the role of women in corporate America surveyed more than 400 companies and more than 75,000 employees in professional occupations - from entry-level to senior executives - and found that women at all levels of management are better managers and have consistently supportive behavior toward women. Their employees show and are at a much better level than the DEI standard. Compared to male managers, women pay more attention to the work-life chal-

lenges of their employees are careful to monitor the workload, and can provide a healthy psychological and emotional environment for their team members by relying on communication skills in management.

It is interesting to know that when women sit in the management chair of a team, they tend to unite with their colored peers more than the opposite sex, and they are more ready to defend different tendencies and opportunities for this group of women. In the end, compared to their male colleagues, women managers spend more time outside of their official responsibilities to maintain diversity, equality, and belonging; For example, leading or participating in employee resource groups or serving on DEI committees.

Black women and women with specific physical disabilities who manage a team spend twice as much energy and time on the things listed above as their white, healthy counterparts. The effect of DEI on employee job performance. In the published studies, it was found that managers' psychological support for the well-being of employees and commitment to the three principles of diversity, gender equality in the workplace, and belonging work so that not only the members of a group are happier to perform their duties, but it is a good guarantee for maintaining the longevity of employees.

Even taking into account the current situation - the coronavirus pandemic and remote working - the publication of this good news will make the employee away from the work environment and home to perform his duties as if he is present at the workplace; With less fatigue and less desire to not be in the workspace. What is the relationship between gender equality in the workplace and invisible work in the workplace? The question that arises is this."If the work that is done is so important and influential, why is the person doing it not appreciated and the presence of the person in the work environment is not appreciated?"

Many scientific researches have been conducted in the last few years, which have shown that features such as gender and race have shaped the concept of real work and its value. In the 1980s, sociologist Arlene Kaplan Daniels used the term "invisible labor" to describe a form of unpaid work by women - such as housework or volunteer work - and showed that this type of work, regardless of its function for society, They are culturally and economically worthless.

As I wrote above, "invisible work" is often described as "office work at home". Studies conducted on closely related concepts show one point; members of groups that operate in a traditional format and gender are more important in them, more than other people who do these worthless tasks and bear the weight of the pressure of such tasks personally. For example; In academic settings, women who are active on faculty, and especially women of color, often shoulder heavier service loads and spend more time teaching, advising, and trying to promote DEI in the workplace. Interestingly, such activities do not lead to new positions or even encouragement.

The more women do these low-value tasks, the less time they have to do more important activities in the educational environment; Research and publication of books. Over time, the more time spent doing these things, the more chances of personal development are jeopardized. The two concepts of invisible work and office work at home drew researchers' attention to social reluctance to value the work that most women do. But why does such reluctance happen? Such activity is often associated with the assumption that women are naturally good at what they are passionate about. Therefore, they are good at any other work and there is not supposed to be a feeling of worthlessness in the process of doing it.

How does gender equality in the workplace eliminate misunderstandings? It seems that not valuing women's work and ignoring their professional capacities is a natural thing. Having said that, when you see a female manager who has significant emotional intelligence to manage the emotional

and emotional atmosphere of the workplace in crises, this behavior is simply labeled as "caring" instead of being considered a very strong crisis management behavior. In addition, since recognition and gratitude are two important signs for valuing work, the efforts of this group of women leaders are ignored, and this neglect significantly undervalues their efforts.

An important point is the constant interest of women to do this kind of work. But in times of social crises, global epidemics, racist events, and national activities, this kind of work becomes more common. Therefore, carrying out and following up these activities is important even for the prospects of a company that pays attention to gender equality in the workplace. The following is just an example, but you must have seen something similar in your workplace culture; If a woman of color takes on the responsibility of holding an anti-racism panel in defense of racial violence, she is recognized as a "compassionate" person, while she is not appreciated as someone who has the time, leadership, and evaluative intelligence.

It is not good news that without considering gender equality in the workplace, carrying out critical missions to provide psychological support to employees and promote DEI is considered similar to office work at home or telecommuting; Neither for women nor for companies and organizations. Women suffer because they do not receive professional credit for what they do. Companies suffer losses because the risk of losing managers threatens them. Managers whose efforts show their work commitment. Positive changes aimed at gender equality in the workplace

The good news is that in the last few years, there have been signs of companies paying more and more attention to this type of activity. Recently, two companies, Twitter and LinkedIn, are paying additional salaries for managers of human resources groups, so that their additional work is shown to be important and valuable. According to Mackenzie's statistical analysis and Oxford University's economics department published on its website, nearly 2 million women will lose their jobs in 2022, compared to the previous year; Women under the age of 22 were a significant number in this statistic who could not work. According to these estimates, the issue of women's employment may not be able to cover the pre-pandemic era at least until 2024.

The same review failed to determine how the spread of COVID-19 strains might have hindered childcare and schooling (in which case, women were much more likely than men to choose between their caregiving responsibilities and career opportunities). The point here is that the slow trend in women's employment showed that 87% of women who returned to work in late spring 2022 did not find a job until early summer of that year (compared to 22% for men). This unemployment is higher for black and Latin American women. What do these numbers and statistics say? The workplace is a good witness to the epic battle for intelligence and talent. In such a statistical population, women have at least half of the top of the curve of general intelligence, emotional intelligence, innovation, and management skills. Also, according to the gender distribution in this curve, women are considered to be the most talented part of the workforce, at least 50% more.

Conclusion and Suggestions

How to strengthen gender equality in Iran? The best way to create gender equality in the workplace is to first understand in which areas there is discrimination, and then take action to eliminate the discrimination. In the following, we introduce some methods to create equality between men and women in the workplace.

Not hiding the amount of salary. Many managers believe that the salary of employees should be kept secret and none of the employees should talk about their salary with others. Some of them have even considered fines for disclosing their salary. Imagine a man who works in an organization and receives a monthly salary of 6 million tomans. The organization advertises and hires a woman to perform similar duties. During the interview, the manager tells the lady that the monthly

salary is 5 million tomans, and the lady will probably accept, but if she knows that the man is paid 6 million tomans for doing the same work, he will not accept. Even if you don't allow salary disclosure due to organizational policy, make sure that everyone is getting paid for what they do and that their gender doesn't affect how much they get paid.

Creating flexibility for employees. Balancing work and life is difficult for many employees. Today's living conditions do not allow many people to be at work at 8 in the morning and go home at 4 in the afternoon. A person may prefer to do his work from 6 am to 2 pm and another person likes to work from 10 am to 6 pm. Organizations can treat their employees more fairly by creating diverse work schedules, such as flexible working hours or telecommuting. Of course, flexibility does not mean that each employee can work in any way he wants. Flexibility means that you provide several different work schedules to the employees and they can choose according to which schedule they will work. For example, you must be sure that the employee who has chosen the remote work program spends 8 hours a day and performs all assigned tasks.

Training managers. The cause of gender inequality in the workplace. Many times, the behavior of managers is the main cause of gender inequality in the workplace. When a manager works with people fairly and without gender bias, other employees learn to do the same. If negative behavioral discrimination is recognized in your organizational culture, after a while everyone will behave according to the principles of gender equality. The ability to create a network and communicate with the organization's employees are two examples of the most important skills that managers need and cannot achieve with gendered thinking. Providing employment opportunities for all when posting a job ad, double-check it and make sure you haven't set too many hiring restrictions. Try to hire people regardless of gender for the positions that are possible.

Showing equality to employees. Employees of your organization should know that they are rewarded and promoted based on their performance, abilities, and achievements for the organization, not because of their gender. Understand and respect the differences between employees. Show employees that their unique strengths and weaknesses are valued. In addition to eliminating gender discrimination, this work also increases the self-confidence, self-esteem, creativity, and productivity of employees. The advantages of creating gender equality in the workplace In recent years, many activities have been carried out to create gender equality, but this culture has not yet taken root in Iran and even the world. At first glance, it seems that women are the main victims of these inequalities, but gender discrimination also harms men.

A simple and common example is that in traditional Iranian culture, the man is responsible for earning and providing for the family's financial needs, and the woman is responsible for raising children and housekeeping. Obviously, in the current economic climate, this discriminatory concept puts a lot of pressure on men. Therefore, creating equality in the workplace and ending gender discrimination is in the interest of both women and men. The advantages of eliminating gender discrimination in the workplace are:

• A positive organizational culture is created.

• Everyone in the organization feels valued.

• Employees know the weaknesses and strengths of themselves and their colleagues, eliminate their weaknesses by overlapping, and gather their strengths to provide better services to the organization.

• Employees with different ideas, skills, and talents enter the organization.

• If the organization cares about these people regardless of their gender, they will flourish and be more creative in doing their jobs.

• An organization's reputation for gender equality attracts the attention of potential customers and employees and encourages them to buy from the brand or cooperate with it. (Of course, some organizations abuse this advantage and attract people simply by using the name of equality in the workplace, but they do not take any practical action in this direction).

• Teamwork in the organization goes better.

• Communication between members of the organization becomes stronger.

In Iranian organizations, we need justice more than we need gender equality. Equality means that all people do the same work and receive equal rewards, but justice means that people have the freedom to choose their tasks and be rewarded based on what they do. Gender equality in the workplace means that people grow and be respected based on their merits. Discrimination in organizations is the root of many problems and creates division even among employees. By creating gender equality, organizations can increase employee productivity and prevent legal problems. Everyone prefers to work in an environment away from discrimination and perform their duties with a sense of security and peace of mind. What is your experience of gender inequality in the workplace and efforts to strengthen gender equality in Iran?

What to do with gender discrimination in the workplace? As we mentioned in the previous section, the existence of inequality in working environments brings irreparable consequences and damages to the body of the organization. Now what should be done to deal with discrimination? How to spread the culture of equality in the organization? How effective are managers in this issue?

Do not be indifferent to gender discrimination in the workplace. The most important and main way to prevent inequality in the workplace is to announce it. It is very important that you, as a member of the organization, are not indifferent to the discrimination that has occurred and inform your superiors about it. This work gradually identifies the existence of discrimination in the organization and forces senior managers to think of a solution for it.

Identify gender gaps and eliminate them. Another way to deal with discrimination is to eliminate gender gaps. There should never be any difference between the employees of the organization due to their gender. An ideal organization is an organization where both sexes are treated fairly and equally during hiring, promotion, training, and receiving their salaries.

Do not neglect the training of managers. Managers have a special role in eradicating discrimination in the workplace. Senior managers shape the organization's culture and determine its general policies. Meanwhile, some successful managers make the best hiring and promotion for the organization regardless of their personal opinions. To achieve this, managers must be trained to recognize discriminatory behaviors and prevent them from occurring.

Increase the transparency of affairs. Transparency helps organizations avoid discrimination and inequality. It also assures its employees that their job promotion or salary increase is based on hard work and conscientiousness. As a result, such organizations have advanced and have higher work efficiency.

Promote a teamwork culture in your business. Doing things in the form of work teams allows the members of the organization to get to know each other's abilities. In this case, they will realize that gender does not affect their abilities. Knowing and knowing about the abilities of the employees also allows the managers of the organization to consider suitable people for appointment and job promotion.

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