

## Evaluating the Role of Gender Equity in Sustainable Development of Big Cities

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### ABSTRACT

Sustainable development movement and the women's movement in the world has shown that in today's world conditions, achieving a just and sustainable society without the active participation of women is not possible. Some social norms and economic constraints in urban areas of Iran, lead to limitation of presence of women. These constraints belong house and the spaces in close to the house for woman. In past centuries, the safe range for women included house spaces, and semi-private outdoor space of houses, a dead-end alleys and side porch. In the West, despite the claims of providing a civil society, necessary and requirement to attend and enjoy of urban spaces for all groups from industrial revolution was due to the dominant approaches to the thoughts of people in connection with the space, or close space. Descriptive statistics used in this study included frequency tables, the data show (Figure) the central indices and in the level of understanding of factor analysis, ANOVA, Pearson correlation, and several statistics methods were analyzed using SPSS version 17.

**Key words:** Evaluating, Gender Equity Role, Sustainable development, Big cities.

### INTRODUCTION

Today, all nations came to the conclusion that due to the need to communicate community groups with each other and social interaction, and the right of presence of all people in all urban areas, it is necessary keep justice in the design and planning of urban spaces. Activities and human behavior in urban spaces are shaped by social and cultural relations with other human beings in this area, so, the realm of justice for all age groups, sex, race, etc., are an important issue.

It seems that modern urbanization with its all claims based on justice and equality is male-dominated, and in most cases it can be seen that many of the needs and values of feminism totally ignored. So, it is regarded that correlation between planning and gender equality has been changed to a fundamental discourse in architecture and urbanism.

To make the city more beautiful, safer and more pleasant, we should consider the role of gender and women's values in different issues such as transport, urban housing spaces, and the city the public spaces and leisure places.

On the other hand, urban spaces are important issue to reach to a developed society and its important characteristics is coordination of all sociological groups. Justice is one of the fundamental concepts of sustainable development. So that sustainable development will not be achieved without justice possible. In other words, justice is considered as a prerequisite for any action that aims to do for increasing quality of life. Gender justice, is an important issue in field of sustainable development, in a way that, according to the World Bank to achieve gender equality to national economies it is very essential (Barton, 2002).

Gender equity and equality between women and men, is not only a desire for basic human rights and social justice, but rather as an essential tool and a prerequisite for the preservation of the environment, sustainable development, human security.

Twelve keywords have been defined in Fourth World Conference on Women in Beijing in 1995. Considering to them are very important to achieve gender equality. Some of these keywords are poverty, education, health, violence, economics, decision- making, war and women , institutional mechanisms, human rights, communication, etc., that are important issues of gender equality and strategies for its implementation in large cities and to achieve sustainable development.

Lang (2007) defines the most important factors affecting gender equality, especially in management and decision -making as follows:

Legal discrimination towards women’s needs and rights that are derived from the dominant patriarchal values.

- Lack of knowledge about women and their strength in aiding the sustainable development
- Patriarchal values that from early childhood slowly affects the attitudes of men and women throughout life and more precise sociological

norms about gender inequality in the common role of man and woman.

- Discriminatory social structures and attitudes associated with the level of the individual, collective and institutional.
- Operating system, culture, organizational structures and policies that affect gender inequality (Lang, 2007).

Regarding to women values and Gender Justice in approaches that are discussed is feminism and women’s rights are the cornerstone of feminism. All feminist theory at the end are agree that women are human beings. Not Doll, Slave, object or animal. Friedman argues in this regard that the idea of feminism is actually an offshoot of the civil rights movement.

The strength and vitality of the feminist movement in its diversity have been hidden, i.e. the ability to adapt to different cultures and eras (Franck, 2002).

It also should not forget that the true feminist movement does not seek to replace instead of Femininity with Patriarchal but its most fundamental goal is to establish a world not only for some women, but for all of them, and not just for some women, but for men as well to be a better place (Franck, 2002).

**Table 1: Distribution of frequency by gender**

Mode	Validity (%)	Frequency (%)	No.	Variable categories
Two exponential	50	50	100	Men
	50	50	100	Women
	100	100	200	Total

**Table 2: Frequency distribution based on women’s safety in public spaces of cities in terms of sustainable development**

Median	Validity (%)	Frequency (%)	No.	Variable categories
3.5	1.5	1.5	3	Very low
	11	11	22	Low
	37.5	37.5	75	Moderate
	42	42	84	High
	8	8	16	Too much
	100	100	200	Total

The Castells believes women’s social movements rooted in ancient history, but their modern form, feminism, has been begun from about 1960, first in Europe and America and gradually began to find the range wide. Feminist movement is redefining the essence of women’s identity, equality of men and women. Feminism is very heterogeneous and varied, but in general it can be a simple expression to be defined as a commitment to end male domination.

Feminist movement is redefining the essence of women’s identity, equality of men and women is sometimes acknowledged, sometimes underscores the inherent superiority of women and feminine ways as a human resources. So common underlying infrastructure that makes up the diversity of feminist movement include: historic efforts, individual and collective, formal and informal,

to redefine femininity in direct confrontation with patriarchy (Krenichyn, 2004).

In examining the issue of gender equity that is an important consideration, the sustainable development in cities has great emphasis on this issue. Gender socialization patterns of culture derive occurs. Gender is determined by social and cultural pattern. Gender is defined by men and women in order to identifying relation between them and their environment. Thus, clear roles and responsibilities for men, women and youth will be levied on the basis of gender in society (Lang, 2007)

**Problem Statement**

Gender equality and women issues have been considered from different aspects by international organizations. International Organization for Human Settlements (World Bank

**Table 3: Frequency distribution according to gender justice in major cities**

Median	Validity (%)	Frequency (%)	No.	Variable categories
3	2	2	4	Very low
	18	18	36	Low
	43.5	43.5	87	Moderate
	31	31	62	High
	5.5	5.5	11	Too much
	100	100	200	Total

**Table 4: Correlation coefficient**

Equal opportunities for political and etc	Equal opportunities for social and etc	Equal opportunities for economic	Correlation coefficients
0.924	0.951	1000	Equal opportunities for economic
0.975	1000	0.951	Equal opportunities for economic
1000	0.975	0.924	Equal opportunities for political and etc

**Table 5: K.M.O or measure of sampling adequacy**

Coefficients	Criterion
0.728	K.M.O or measure of sampling adequacy
1055.805	The chi-square ( $\chi^2$ )
3	Degrees of freedom
0.000	Significant level.

and Gender and Development Groups, 2003) has organized strategic considerations in this regard in several areas:

- Basic services
- Human Rights
- Economic capacity
- Transport
- Right to safety and to prevent harassment of women (Rezazadeh, 2005)

Women as citizen participation should enjoy of life in the city, so it is necessary to restrict all barriers to participation in urban life. This includes security, transport, housing and other items above. If suitable planning and design in urban spaces has made, it certainly will have increased impact.

provide conditions that women as well as men can be present in urban spaces. Importance of women presence in various fields of scientific, political, and social, has been demonstrated (Rezazadeh, 2010).

In a modern society, taking into account the pluralistic civil rights and justice-oriented approach,

In other words, women as half the world's population, have the right to be present with men in urban spaces, and should not be limited by the

**Table 6 - Estimates of the amount of sharing of each component (structural gender justice) with component by the method of principal component analysis**

The rate of subscription with factor	sharing before extracting	Components
0.950	1000	Equal opportunities for economic
0.984	1000	Equal social opportunities
0.966	1000	Equal political opportunities

**Table 7: Estimates of values and variance corresponding to the factor**

special values calculated			
Cumulative percentage (%)	Explained variance (%)	Total	Component
96.671	96.671	2900	1
99.315	2.645	0.079	2
100	0.685	0.021	3

**Table 8: Determining the factor loadings**

Factor loadings with respect to the first factor	Components
0.975	Equal opportunities for economic
0.992	Social and cultural equal opportunities
0.983	Political and civil equal opportunities

presence of multiple factors. These barriers include physical problems of space, cultural, social and etc.

Gender approach "in planning and designing urban spaces based on the needs of men, lead to make urban spaces as the male and develop"gender blindness". The presence of women in the society is a inalienable right of all women and they as well as men should have equal conditions

**Table 9: Correlation coefficients of variables**

Develop suppliers	Physical Development	Cultural development	Economic Development	Correlation coefficients
0.751	0.827	0.886	1000	Economic Development
0.829	0.933	1000	0.886	Cultural development
0.864	1000	0.933	0.827	Physical Development
1000	0.864	0.829	0.751	Develop suppliers
0.007				Determinant of the coefficients

for participation in the urban areas, but today women have been denied their civil rights somewhat. To ensure this equality, society must understand the differences in the needs, circumstances and individual goals, overcome obstacles and limiting

factors and prepare possibility of social participation (Afsharnia , 2009).

In fact, urban spaces as physics of cities should meet social needs, and prepare conditions

**Table 10: K.M.O or measure of sampling adequacy**

Coefficients	Criterion
0.820	K.M.O or measure of sampling adequacy
977.665	The chi-square (x2) Bartlett
6	Degrees of freedom criterion
0.000	Significant level.

**Table 11: Estimates of the share of each component (construction of sustainable urban development) with factor by using principal component analysis method**

The rate subscription with factor	Sharing before extracting	Components
0.845	1000	Economic Development
0.940	1000	Cultural Development
0.928	1000	Physical Development
0.834	1000	Develop suppliers

**Table 12: Estimates of specific values and corresponding variance with the factor**

specific value calculated			
Cumulative percentage (%)	Explained variance	Total	components
88.672	88.672%	3.547	1
95.191	6.519	0.261	2
98.633	3.442	0.138	3
100	1.367	0.055	4

**Table 13: Determining the loading factors**

Loading factors with respect to the first factor	
0.919	Economic Development
0.970	Cultural development
0.963	Physical development
0.913	Develop suppliers

to allow users, both men and women, to enjoy the spaces. In Iran, due to various social, cultural, political, and etc, urban spaces monopolized by men and considerations to women problems such as work and family bond or security has not been taken. Poor urban spaces, defenseless spaces, unsafe neighborhoods, cities and urban architecture that are just manly are of the factors threatening the security of reducing women’s social participation as

**Table 14: ANOVA for comparing intra and between groups**

Sig	F-statistic	The mean square	Degree of freedom	Sum of square	Sources of variation
0.000	6.367	3.285	14	45.996	Between-groups
		0.514	185	95.018	Intra- groups
			199	141.013	total

an important part of the community (Farrokhseresht, 2011). So in this article we examined the role of gender equality in the sustainable development of big cities.

**Research hypotheses**

The main hypothesis of this study was: It seems there is a direct relation to gender equality and sustainable development of cities.

- 1) It seems that there is direct relation between sustainable development of cities and the safety of women in public spaces in the city.
- 2) It seems that in cities with higher levels of

sustainable development, women are using of urban spaces like men.

3) It seems that there is a direct relationship between sustainable developments of large cities with high levels of women’s education.

4) It seems that in cities with higher levels of sustainable development, females’ employment levels are at a higher level.

**Descriptive Statistics**

This section presents descriptive statistics and tables to examine sample characteristics. Typical characteristics of these are useful to help

**Table 15: Pearson Assessment**

Total	Sig	The Pearson statistic	Variable
200	0.000	0.545	City sustainable development and gender justice

**Table 16: ANOVA for comparing intra and between groups**

Sig	F-statistic	The mean square	Degree of freedom	Sum of square	Sources of variation
0.000	18.937	6.028	14	84.392	Between groups
		0.318	185	58.888	Intra groups
			199	143.280	Total

**Table 17: Pearson Assessment**

Total	Sig	The Pearson statistics	Variable
200	0.000	0.734	Sustainable development and security of women

**Table 18: ANOVA for comparing intra and between groups**

Sig	F-statistic	The mean square	Degree of freedom	Sum of square	Sources of variation
0.044	4.091	1.950	1	1.950	Between groups
		0.477	198	94.387	Intra groups
			199	96.337	Total

**Table 19: Pearson Assessment**

Total	Sig	The Pearson statistic	Variable
200	0.000	0.824	Sustainable development and education of women

the general characteristics of the study population and the general characteristics that are specified for other researchers. Moreover, this knowledge makes generalize the results to other populations, or in the design of future research questions for other communities to use this information.

Tip is that gender justice and sustainable urban development level, both are structural and macroeconomic indicators that each of them has formed from several components and reagents that are visible and can be assayed based on the theories discussed. Therefore, we examined descriptive statistics and viewed the frequency distribution (Tables 4.2.4 and 5.2.4), but for the study of inferential statistics using factor analysis techniques examined details and the components of these two constructs.

From Table 1 it can be concluded that 50% of the participants were male and the remaining (50%) are women. Because the calculated frequencies are also quite evenly distributed by double exponential, so, there is no mode or more frequency

From the figures of Table 3 and, Figure 3 it is inferred that the idea of 1.5% of the sample population, the rate of women's security in public spaces in developed cities were very low, and 11%, 37.5%, 42% and 8% were less, moderate, high and very high respectively. The median value was equivalent with 3.5, which implies that the average number of comments about the level of security of samples women in public spaces in cities, in

**Table 20: Descriptive statistics**

No.	SD	Mean	Variables
11	0.820	3.45	Sustainable Development
13	0.439	2.23	Lack of Sustainability

**Table 21: ANOVA for comparing intra and between groups**

Sig	F statistics	The mean square	Degree of freedom	Sum of square	Sources of variation
0.002	5.839	3.427	3	10.281	Between groups
		0.587	46	26.999	Intra groups
			49	37.280	Total

sustainable development cities is much more than average. In other words, the median index is of index types that characterize the data distribution center that in here is equal to the average or high level.

Table 3 shows that 4% of the examined population believed that the gender justice in major cities is very low, and 18%, 43.5%, 31% and 5.5% of them believed low, moderate, high and too much, respectively. The mean value is equal to 3, this figure implies that the sample mean comments about how gender justice in the big cities is about average. In other words, the median index is of index types that characterize the data distribution center (or the 50 percent distributions) which here is equal to the average level.

#### Factor analysis

Factor analysis is a multivariate statistical method that establishes a theoretical model between the frequencies of variable. This method is based on the assumption that the observed variables are of linear combinations of hypothetical that are more fundamental.

In this study, there are two basic structures: gender justice and sustainable urban development, the basic structure of each reagent composition and indices are composed of a hypothetical. According to the theory associated, structures of gender quality are combined of three references including equal opportunity for economic, social and cultural opportunities and equal opportunities in political and civil and sustainable development as well has been composed of four fundamental (economic development, social and cultural development, physical development, and develop suppliers). Therefore, to determine the validity of each of these reagents for the desired structures should use factor analysis as follows:

### Gender justice

As noted, this structure is represented by three postulates: equal opportunity for economic, social and cultural opportunities, and political and civic opportunities. The first step in determining construct validity in factor analysis is to determine the correlation table references with each other and also determining the determinant of the matrix and to estimate K.M.O.

The greater correlation coefficients of structure reagents with each other, the more power of reagents indicates. The correlation coefficient always varies between (1 to -1) therefore much closer correlation between stronger and weaker correlation value is closer to zero as possible. As can be seen in the table above, all of the coefficients values are above 0.9, which represents the amount of correlation between the reagents are very powerful. By the way, the main diagonal matrix is equal to 1 that shows the correlation of each item with itself and complete correlation. The amount of matrix correlation determinant is equal with 0.005 that shows the validity and matrix correlation of variables. The closer determinant to zero, the more qualification of variables for factor analysis

In the above table, two other criteria for eligibility and validity data are presented: a standard measure of sampling adequacy or KMO and Bartlett. A measure of sampling adequacy maximum and the minimum is zero, so the closer of this figure to 1 the more appropriate measure is considered and the figure under 0.6 is unacceptable. As can be seen in the table above, this measure is above 0.7, and the number is considered sufficient. Bartlett measure also is significant at the level of 99% confidence, so these two criteria, confirm the presence of factor analysis.

The above subscription rate of each factor is calculated for each component. The subscription rate of variable indicates the amount of variance that is explained by the greater amount of a component or variable, and the more this rate means that it is represented by desirable way. In the above table, equal opportunities for social and cultural factors is a little more but overall subscription rate of all variables with the factor is above 0.9.

In the above table, specific values and explained variance by each factor is obtained. As, the three factors define high percentages of first factor that determine 96% of these factors. So, second and third factors are ignored and can define with high confidence that all of these three factors including equal opportunities for social and cultural and civil and political opportunities have important role in gender equity in the rate of 96%. So validity is confirmed.

The above table represents the highest correlation coefficient with equal opportunities for cultural, social and gender justice factor. But all reagents, have very high operating rates and favorable.

### Structure of sustainable urban development

As noted, the structure is represented by four postulates: economic, social and cultural development, physical development, and develop suppliers. The first step in determining construct validity using factor analysis is to determine the correlation table references with each other and to determine the determinant of the matrix and estimate KMO.

The greater the general structure of the reagents correlation coefficients the more power of reagents in the formation of the desired structure. The correlation coefficient always varies between (1 to -1) and as the outcome measure is closer to zero the correlation value will be weaker. As can be seen in the table above, all of the coefficients values are above 0.7, which is the value of the strong correlation between the factors. The main diagonal of a matrix is equal to one that this amount indicates the correlation of each component with itself and is complete correlation. The amount of matrix determinant correlation is equal with 0.007 that this amount shows the validity of variables and correlation matrix of variables.

In the above table, two other criteria for eligibility and validity data are presented: a standard measure of sampling adequacy or KMO and Bartlett. A measure of sampling adequacy of the maximum and the minimum is one and zero, respectively. So, the closer of this number to one, the more appropriate measure is considered and the figure below 0.6 is

unacceptable. As can be seen in the table above, this criterion is above 0.8, which is considered a good amount of variety. Bartlett measure also is significant the level of 99%, so these two criteria, confirm the presence of factor analysis for structures

The above table shows the rate of subscription with factor. In the above table, social and cultural development is more than the other components, but the total amount of shared variables with factor is above 0.9.

In the above table, specific values and explained variance, is obtained by each factor. Since each factor represent a high percentage of the first factor and in fact determine more than 88% of these factors, so, the second, third and fourth factors are ignored and can be concluded that all four factors (economic, social and cultural development, physical development, and develop suppliers) have important role in the form of sustainable urban development and are involved in the formation rate of 88%. So validity is confirmed

In the above table, social and cultural developments have the highest correlation coefficient with the factor of sustainable urban development. But all reagents have very high and favorable operating rates.

Thus, the validity of the two constructs of gender justice and sustainable urban development can be confirmed and can test the relations of these structures.

## RESULTS

According to the F-statistic values and the error observed in the above table we can conclude that the difference in level of 0.99 is significant. In other words, there is a significant relationship between the sustainable development in big cities and gender justice. Therefore, the null hypothesis is rejected and the research hypothesis is accepted.

In the above table, the relationship between sustainable development and gender equality is measured according to the views of 200 samples in major cities. According to the Pearson statistic (0.545) and the resulting error (Sig: 0.000) it can be

concluded that the relationship between variables is significant at a confidence level of 0.99. In other words, the null hypothesis is rejected and the research hypothesis that there is a relationship between sustainable urban development and gender equality will be accepted.

The Pearson correlations between the two variables indicate that the intensity of the direct relationship between two variables is relatively strong and positive. In other words, presence of gender justice impact on sustainable urban development and vice versa with the rate of 54 %.

According to the F-statistic values and the error observed in the above table we can conclude that the difference in level of 0.99 is significant. In other words, there is a significant relationship between sustainable development of cities and the safety of women in public spaces in the city. Therefore, the null hypothesis is rejected and the research hypothesis is accepted

In the above table, the relationship between sustainable development of cities and security of women in the public sphere, according to the views of 200 samples has been measured. According to the Pearson statistic (0.734) and the resulting error (Sig: 0.000) it can also acknowledged that the relationship between variables at a confidence level of 0.99 is significant. Therefore, the null hypothesis is rejected and the research hypothesis, relation of urban sustainable development and women security in public spaces of cities is accepted.

The Pearson correlation between the two variables indicates that the intensity of the direct relationship between the two variables is strong and positive. In other words, sustainable urban development affects on promotion of women's safety in public spaces as much as 73 % and vice versa.

According to the F-statistic values and the error above table we can conclude that the differences observed is significant at the level of 0.95. In other words, in cities with higher levels of sustainable development, women as equal as men take advantage of the urban area. Therefore, the null hypothesis is rejected and the research hypothesis is accepted.

In the above table, the relationship between sustainable development and a women's high level of education in large cities, citing the views of 200 samples has been measured.

According to the Pearson statistic (0.824) and the resulting error (Sig: 0.000) it is concluded that the relationship between variables at a confidence level of 0.99 is significant. In other words, the null hypothesis is rejected and the research hypothesis that there is a relationship between sustainable urban developments and to promote women's education will be accepted.

The Pearson correlations between the two variables indicate that the intensity of relationship between the two variables is strong, direct and positive. In other words, the existence of sustainable urban development has contributed to 82% on women's education level and vice versa. It is a two-way relationship, in other words, the high level of women's education affects on sustainable urban development with the rate of 82%.

In this table the mean and standard deviation of women's employment in developed cities and undeveloped estimated. It is concluded that the average employment of women in developed cities is more than undeveloped cities.

According to the F-statistic values and the error observed in the above table we can conclude that the difference in level of 0.99 is significant. In other words, in cities with higher levels of sustainable development, women's employment level is generally higher. Also, because the average of employment of women in developed cities is more than undeveloped cities therefore the null hypothesis is rejected and the research hypothesis is accepted.

## CONCLUSIONS

As noted, the issue of gender equality is important in urban areas and this issue has important role in sustainable development is big cities. All citizens have equal opportunities and conditions to access and the use of spaces and amenities, but it seems there is some injustice in urban areas. Urban spaces as could have the same role in instrumental in promoting social justice, it can also be considered as a factor in the deepening social inequality.

Women as a half of the population in big cities desire to use city facilities equal with men. Big cities in order to reach sustainable development should prepare conditions that women could work and live in a safe, high quality and diverse space. In many countries including Iran, urban spaces have been designed in most cases by men and for men, too and little attention have been paid to women needs. In countries such as Iran that for reach to development and promotion, women should work in the society like men, women are a main source for innovation and dynamics of cities and urban spaces should be designed and planned in such a way that women could be active as citizen.

Regarding the issue of gender equality and women in space designing in recent years much attention has been paid. Therefore more attention has been paid to gender justice and women in urban spaces designing but the main step for reducing women presence limitation in urban spaces, understanding and deep knowledge responsive to the needs and importance of presence of women in outdoor spaces and in second step, exact identifying of women needs in urban spaces are necessary. So, urban spaces should be responsive to women needs. Because women beside of being as a half of the population in big cities, through the social role of child, elderly and patients care, needs spaces that their specific needs and the care ethics of care is considered.

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