

## **Reviewing and Redefining the Role of Social Capital in Achieving Sustainable Cities: Strengthening Citizen Participation in Energy Conservation**

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### **Abstract**

Social capital is a set of norms in social systems that improves the level of cooperation of community members and lowers exchange and communication costs. Thus, concepts such as civic society and social institutions are closely linked to the concept of social capital. This issue highlights the role of social capital in achieving sustainable development as well as cities as human society and, to sustainability. One of the main challenges in today's cities is the indiscriminate use of energy and its consequences on urbanized human life. Unfortunately, indiscriminate use of energy in addition to significantly reducing the level of energy and facing future generations with numerous problems challenges the urban environment with numerous environmental challenges. Thus, the main purpose of the research is to achieve a pattern for social capital in line with ever more stability of most cities. This issue pays attention to preserving energy in particular. Also, recognizing social components affecting the improvement of level of social capital in cities is a result of this research. The research is applied with regard to the purpose and with regard to the method considers working on qualitative structures. Accordingly, by applying analytic-descriptive method and using library method, effective components on the improvement of social capital were recognized; including: social awareness, social confidence, social involvement, social relations, social networks, social organs and civic organizations. These components, in general as a builder of social capital play an important role in guiding and directing urban policies to achieve energy conservation. Also, in order to operationalize these concepts according requirements for urban sustainable development, applied development is also recommended.

**Keywords:** sustainable development, social capital, sustainable cities, participation, energy conservation

### **Introduction**

In this research, with regard to the wide range of social capital, by capital we mean characteristics such as confidence, networks and norms facilitated by cooperation between people for interaction. Theoretical history of this concept turns back to early twentieth century that was first introduced by Hanifan and then in 1961 by Jane Jacobs. To the point that now in most scientific zones including sociology, politics, and economics, social capital occupies a specific place, over all, social capital is "a series of norms in social system that promotes the level of cooperation between society's member and lowers the cost of interaction and communication" (Fukuyama,1999). Also, "social capital is effective in facilitating certain social interaction" (Colman, 1997: 462) and it, in turn, is a result of the impact of social institutes, human relations and norms on the quality of social interaction. This capital reflects the dimensions of social interaction in the society and cause benefiting from human and social resources. Therefore, the social capital more than anything else, involves a collection of available norms that leads to strengthening the level of society's member cooperation. Thus, "concepts such as civic society and social institutes have a conceptual relation close to social capital" (Fukuyama, 1995). As a result, in a society that benefits from a desirable

social capital, participation and cooperation would better take place. This issue signifies the role of this capital in realizing sustainable development and cities' access to stability.

One of the important issues of today's world is the concept of energy, indiscriminate use and its problems for human life. Unfortunately, indiscriminate use of energy in addition to significantly reducing resources of this energy challenges human ecosystem with numerous. Accordingly, the main purpose of this research is to explain the role of social capital and to access a pattern for benefiting this capital in line with cities' sustainability to be able to follow energy conservation and improvement of human environment. In this regard, identifying social criteria affecting the improvement of social capital level in cities is taken into account. Also, the research seeks to find an appropriate answer to the question; what are the effective components in improving the social capital in order to conserve energy in line with cities' sustainability? And, what factors influence their improvement? Therefore, the research is applied with regard to the purpose and with regard to method considers working on qualitative structures. Thus, using this descriptive-analytic method, and using library method, effective components on the improvement of social capital of citizens are identified and then their role in promoting participation in explaining and policies for realization of social capital in cities are proposed.

### **Theoretical foundations**

#### ***Sustainable development***

Most of development theories clearly believe that "development" is a fundamental change in society's structure. Change that increase production capacities, improvement of life conditions and distribution of its results in the society. "Development" is "a key term in social sciences that includes different subjects in societies' behavior and thought, in different cultural, economic, social and political dimensions" (Mark Henry, 1995:77). Also, it can be known as the evolution of life and reaching ideal conditions that bear concepts such as freedom, justice, social dynamism and economic, social and cultural growth. Thus, "development is considered as investigating methods to access evolution move which balances social, economic and cultural phenomena and provides modern conditions for social, economic dynamicity and realization of social justice" (Zahedi Asl, 2002:5).

The idea of "sustainability" also is rooted in thoughts related to environmental movements. But, the term "sustainability" was seriously applied when the discussion of application and management of renewable energies such as jungles and sea foods, provided that it does not harm the future resources, was taken into account. As a result, fans of this theory believe that sustainability "conserving the current situation of ecology which calls for providing an acceptable level of human life comfort in cities as well as taking into account the future generation life condition" (Azizi, 2006). Also, sustainability "believes that its root is in ecologic sustainability. This theory emphasize that nature gives certain limitations and opportunities to people's life. Consequently, "sustainability" approves a development that by using resources properly does not harm the nature at all" (Moghtahed Zadeh, 1999). Thus, with regard to the importance of development and necessity of sustainability, the issue of "sustainable development" is proposed. Since early 1980s, the concept of sustainable development was developed for decades under the name of "development" in form of "ecosystem quality" shows itself in global scale (Ivans and Parter, 2005) and for the first time the term "sustainable development" was referred to in the report by global institute of natural resources conservation. This organization in its report named "the strategy of natural resources' conservation" used this concept to describe a situation that development is not only harmful for the environment, but also will help it. Also, Brandtaland Commission in 1987 in explaining this concept describes it

as a "development that can meet the needs of the current generation without any harm to meet the needs of future generations and confirmed with their benefits".

Over all, the most frequent definition is the definition that describes it as "a development that answers today's generation needs with limiting the facilities of future generations to meet their needs" (Rees, Roseland, 1991). Accordingly, this type of development involves two key terms:

- The concept of human needs and meeting them, especially necessary needs of poor classes who are qualified;
- Thinking about constraints of environment and forcing them to answer current and future needs.

Accordingly, paying attention to two subjects "enhancing quality of life along with considering the capacity for ecosystem forbearance" and "answering needs of the current generation without limiting the abilities and facilities for the future generation to meet their needs" clarifies the essence of this term (Willis, 2006). In this regard, some of the other theoreticians believe that sustainable development is in search of answer to five general needs including: "The integration of conservation and development", "meeting the basic needs of man"; "equality and social justice", "creation of social self-sufficiency and cultural diversity", "maintenance of ecological integrity" (International Union For Conservation of Nature, 1986). Thus, a definition by Berke and Manta in 1999 aiming at assessing sustainability in comprehensive plans was proposed that can be taken into account. This definition includes "sustainable development is a dynamic process in developing countries; as to harmonize needs of the future and current generation by local rebuilding and balancing of social, ecologic and economic systems and involvement of the local events to the global communication (Alshuwaikhat, 2002:86). Models of sustainable development were founded on four main principles:

- People should be at the center of attention.
- With strong motivations, correct thoughts of ecosystem should be reflected in all decision making processes.
- Models for sustainable development should be based on technology compatible with the environment.
- Models of sustainable development should base on paving ground for public participation and attention to the society's situation.

#### ***Urban sustainable development***

Today's cities as consumers and distributors of goods and services, turned into focal points in sustainability discussion. Most cities by excessive use of available resources destroyed the environment and left undesirable ecosystem impacts. Therefore, "discussions about economic growth and their connection with the environment and the human society is an introduction to create new paradigm of the concept of development; a development that supports the environment and emphasize the social justice and things like that" (Harris, 2004:5). Accordingly, the necessity to make policies for cities to reach stable condition is doubled. In this regard, "urban sustainable development" is a form of today's development that can guarantee continuous development of cities and urban societies of the future generations" (Hall, 1993:22). Therefore, this concept in 1990s was proposed and during last decades gradually turned into a new dominant paradigm in theoretical and scientific literature common in the area of urban development and planning. This paradigm though monitoring different perceptions and interpretations, emphasizes continuation of development for every one and future generation, on holistic approach of complicated dimensions of economic, social and ecologic development.

Accordingly, the most important issue that turn thinking and attention of theoreticians and programmers of cities to the concept of "urban sustainable development is the reality of rapid growth of urbanization in today's world and its continuity for the residents of these regions" (Rhanamiee and Pour Mosavi, 2006:177). Thus, urban sustainable development is the situations that today's and tomorrow's citizens can live within with total comfort and security and besides being healthy enjoy long and constructive life" (Salehi Fard, 2001:147). Thus, the theory of "urban sustainable development" following the theory of "sustainable development" is proposed to support natural resources. In this theory, the issue of maintaining resources for now and future through proper use of ground and causing the least lesions to the non-renewable energies is taken into account. "the theory analyzes city's form sustainability, sustainable pattern of Settlements, effective pattern of transportation as well as city in the categorization of urban zone, because creating a city is only for the enjoyment of Urbanites" (Ziari, 1999: 17-18).

As Mohan Monasingh states, in cities, sustainable development depends on close interaction of three environmental, economic and social factors that a sustainable city creates (Munasinghe, 1993:2). This development "through cooperative decision making and at the local level becomes possible. Because this level is tangent to people daily life needs. In the meanwhile, the main duty of the central government is to create facilities, total support and removing barriers and, at the same time, should avoid interfering in administration of local affairs" (Shafiei, 2000:39). This issue signifies social dimensions of urban sustainable development. Over all, five main purposes to obtain sustainable cities are predicted including: "minimum use of space and natural resources"; "applicability of administering cities' events"; "maintaining the health of cities' health"; "providing equal access to resources and services" and "preserving cultural and social variety" (Maoh, 2009a, 321). Also, for the realization of sustainable development of cities, it is necessary to provide conditions to make possible paving ground for human sustainable development and improving urban social welfare in which we can refer to the establishment of social justice (Harvi, 1997: 11-99), climatic planning in harmony with human environment (Bahreini, Shia, 2001), strengthening social cooperation structures such as commitment and accountability, strengthening social, family foundations and public environmental recovery (Bahreini, 1999), creating structural discipline in the urban space on aesthetic perception and urban Legibility (Linch, 2002:12-34), improvement of using urban space and increase of citizen's satisfaction (Bahreini, 1999:98-129) and integrity of visual structure of urban environment and view.

### ***Social capital***

Social capital is a term used normally and daily; although the picture derived from this concept is insignificant, in general it is an old concept and the only term that has been recently paid attention to. (Bankston and Zhou, 2002; Labonte,1999; Lazega and Pattison, 2001; Portes and Sensenbrenner, 1993; Putnam, 1995).

Also, social capital is linked to concepts such as civic society and social communication (Adam and Roncevic, 2003) and with writers of the historical school including Dorkim, Ziumel, Marks, Weber etc. as well as theories such as social exchange and psychology contract in interaction (Watson and Papamarcos, 2002). But, in general "new progress of the concept of social capital is created from three components such as Bordio, Colman and Pantam and some other works with cooperation of the Multidisciplinary theory. Social capital is concentrated on intra-people social communication that achieved fruitful results" (Szreter, 2000). The concept of social capital has a variety of different applications. Also, social capital may not approach any social institute or position all over its visual framework (Grootaert and Van Bastelaer, 2002). Therefore, over the past 15 years, in resources of social capital and human capital and social networks between 1990 and 2000 (Isham et al., 2002) it is obvious and tangible. "The term social capital refers to capitals

including social confidence, norms, networks that people draw to solve public problems" (Adam and Roncevic, 2003). Thus, some theoreticians "its main principle (social capital) is considered a solution for different social problems such as poverty, crime, laggard economy and inefficient government" (Boix and Posner, 1998). This concept has a long deep history and various roots and could impact 19<sup>th</sup> and 18<sup>th</sup> century. This idea is related to ideas belonged to scientists such as Tocqueville, J. S. Mill, Toennies, Locke, Rousseau, Simmel, Bankston and Zhou (2002), Brewer (2003), Lazega and Pattison (2001), Portes and Sensenbrenner (1993), Putnam (1995), Routledge and Amsberg in 2003 proved that Haniphan applied the term "capital" especially to clarify the importance of social structures for people both economically and commercially. "Haniphan highlighted both aspects of private and public interests of social capital but, despite this conceptual innovation did not attract attention and was disappeared without any impact" (Putnam and Gass,2002). Then, the concept of social capital was reinvented repeatedly.

In 1950s, Seely et al. for analyzing membership of suburb residents in gyms; in 1960s Jacobs who was an urban programmer, for the emphasis on collective value of unofficial links of neighboring in serious metropolis and in 1970s, an economist called Loury used to study social heritage of slavery (Putnam and Gass, 2002). But, the concept of social capital in 1980s was totally paid attention to and could allocate a defined place among sociology theories by empirical and theoretical expansion. This issue was generally indebted to Colman (1998) the American sociologist and his studies about participation in school affairs (in Chicago city). Afterwards, Bordio in France clarifies other dimensions of this concept. Panteam study (Putnam, 1993) is also in the field of social capital and democratic organs in Italia, especially of the factors of expanding this concept (Tavasoli and Mosavi, 2005). Also, Pakston (Paxton, 1999) believes that social capital is the result of two components:

- Visual links among people: there should be visual networks so that people are connected to each other. This component shows that people are connected to each other in social space;
- Mental link; links between people should be specific, bilateral, reliable and required a positive sense.

In general, social capital is the key of settling for civic society and citizenship survival and lack of it is a barrier to establish social interaction. Therefore, societies having such capital are an appropriate bed for formation of capable, respondent and effective civic society. Conversely, emptying a society of social capital leads to inefficiency of most policies and plans proposed in the area of planning (Hagi poor, 2006). Also, some theoreticians (Boln Vanix, 1999 cited in Sharfian Sani, 2001) numbered eight important elements of social capital as follows:

- Participation in the local community;
- Activism in a social position;
- A feeling of confidence and security;
- Neighborhood Links;
- The bonds of friendship and family;
- The capacity for admitting differences;
- Valuing life;
- Business Links (Civic Qhahfarokhy, 2003: 11).

#### ***Elements of Social aspect of social capital***

Since numerous theories in the area of social capital was represented, each of them tried to identify these components from a dimension and is applied relative to the topic applied. In this article also according to the significance of participation and social aspect of social capital is

considered more than other aspects. As a result, we tried to apply effective components on the social capital and in line with research with regard to characteristics of social aspect.

*Social Reliance* : Some theoreticians believe that reliance is a type of performing Mechanism that creates and maintain integrity in social systems. Social reliance is the result of social interaction in groups, societies and social activities. Especially if this reliance transfer from individual level to the social level is considered as a valuable capital (Prusak & Cohen, 2001). Social reliance has an important share in most organizational processes and attempt to increase it can reduce most of relevant costs and besides it increases organizational profitability (Alavi, 2001:36)

*Social institutes*: Institutional view believes that the lifeblood of social networks and civic societies are generally the byproduct of political, legal and institutional environments. Although the Public solidarity approach and networks treat with social capital as an independent variable, institutional view considers social capital as a dependent variable. This view point believes that high capacity of social groups for acting in favor of the group is basically dependent on the quality of official institutes in which they exist.

*Social communication*: By interaction we mean the relation between two people or groups that can take the form of various groups such as cooperation, exchange and friendship. Also interaction can include family, neighborhood relationship as well as interaction in the environment. Developing impossible communication cause increasing mutual trust which reduces the impact of these differences (Morhodo Grifpin, 2004:96).

*Social participation*: By participation we mean mental and emotional involvement of people in group situation that motivates them to help each other to achieve group objectives and share the responsibilities. Usually, cooperation fields are divided as follows:

- Participating in decisions which are taken in the technical fields;
- Participating in the affairs related to city administration
- Participating in decisions that are taken in public fields;

In this regard "Fokoyama" first summarizes social participation in elections, however after that, participating in group exercises and collective plans were also taken into account (Fukuyama, 1995).

*Social awareness*: Awareness is the most effective and efficient wealth and capital of every society; because they do not disappear unlike other wealth and the more it was applied the more it completed, Fukuyama (1995) believed that before entering into any commercial or social system, we should obtain enough information about the current networks in that system and its features. As trust is the basis of any economic and social exchange (ALAVI, 2001:34). The level of access of the citizens to news and issues of society forms public awareness. Thus, citizens, in order to be able to participate in social and political participation need to be aware of issues and problems of the society.

*Social networks*: This approach emphasizes the importance of vertical and horizontal relations between people and the intra-relation and the relation between organizational entities such as social groups and organizations (Woolcock and Narayan, 2000:38). The network's approach makes it possible for researchers to study dealings of any individual unit inside a wider territory of activity belonged to it. If Granvoter (1973) believes, intra-group links is needed (stronger links) to induce a sense of common identity and objective in families and societies.

*NGOs* : The first point of view which is called Social Solidarity considered social capital as equivalent to local organizations i.e. societies, clubs and civic groups. This approach is evaluated simply with the number and density of these groups in a certain society and indicates that social capital is basically good and is even getting better.

### Energy and models of sustainable city

By emergence of environmental issues, urban planners and architects presented different solutions to reduce impacts of urban life and conserving cities' environment. These theories by introducing new discussions, approaches and forms for development and sought to increase the quality of citizens' environment and life. One of discussions that is seriously taken into account in these theories is the subject of energy and related discussion. Thus, in these theories the issue of energy and the way to make profit out of it has an specific place (Newman. 2010:149-170) (Clife, Sherly, 2007: 10-18) (Jabareen, 2006: 38-52) which is studied in table 1.

**Table 1: Models of sustainable city and attention to the issue of energy**

Models of sustainable city	Attention to energy
The city of renewable energy	Using energy and technology of renewable energy; Producing renewable energies in cities (Newman. 2010,149-170)
The city of neutral carbon	Reducing use of non-renewable energies; Using renewable energies Producing renewable energies in cities (Newman. 2010,149-170)
Distributed City	Attending to production of renewable energies in cities (Newman. 2010,149-170)
The city of sustainable transference	Reduction of using non-renewable energy Prevention of wasting energy Attention to renewable energy (Anderson, kanaroglou and Miller,1996) (Brophy, et al.,2000) (Newman. 2010,149-170)
Location-based city	Localization of energy Attention to renewable energy (Newman. 2010, 149-170).
Compact city	-Reducing energy consumption per capita; - Use of renewable energies (Matin, Sherali, 2007) (Golkar, 2000)
Ecologic city	Attention to renewable city; Specific attention to solar energy (Jabareen, 2006)
Biological City	Attention to renewable city; - Use of renewable energies in cities (Newman. 2010,149-170)

### Approaches to strengthen social capital for energy conservation

Regarding the analysis of the issue of sustainable development and social capital in this article whose importance is analyzed, in this section by emphasis on the social aspect of social capital and its components aimed at conserving the environment particularly in today's world, their impact and role to increase citizens' participation in table 2 are studied along with proposing approaches.

**Table 2: Approaches to strengthen social capital in line with cities' sustainability to conserve energy**

Element	Social capital	Role in citizen participation	Impact on conserving energy in cities	Executive measures to strengthen social capital
Social participation	Increasing the level of social capital among citizens and following that motivating people to participate in urban affairs	Hart (2001) believes that citizenship means participation at different levels of social participation. Thus participation is the process of cooperating in decision making either at the individual or social level and an instrument to establish democracy in societies.	Conserving energy and reforming consumption pattern in society calls for serious participation of citizens. Therefore, any member of the society with participation and force for better consumption of resources plays an effective role in growth and maintenance of societies and cities	-Establishment of professional groups and societies and facilitating voluntary participation of experts -Explaining effective rules to create an appropriate bed for citizens' participation -Planning appropriate mechanism to gather citizens' viewpoints and preserving them in energy conservation
Social awareness	Attempt to change perceptions is considered by social capital. In fact citizens more than admitting the role should have an appropriate perception about the topic.. thus, having individual and social awareness about their rights, position and way of participation is necessary.	The first and most important measure to participate in the society is to turn verbal participation into semantic participation and representing a true explanation of the topic; under a comprehensive and common perception, more influence is possible. In this regard, social awareness will have effective role on increasing citizens' tendency to participate.	One of the effective plans which is aimed at changing behavior and attitude of citizens and their attempt to conserve the environment and energy is to inform people. This method have fruitful results with low costs. In this regard informative plans and training is one of the chipset and The most durable and cost-effective ways to protect the environment and optimize energy consumption.	Holding educational seminars Establishment of promotion groups of education in face to face form Holding matches Distributing special issues of education Making education periods Installing professional posters and placards Providing amusing and educational series
	Social capital cause obtaining ever more mutual trust towards	Confidence-building is one of the most important		Using experience of all people and profiting all social capacities;

	each other as citizens trust others and have such feeling about themselves and see themselves from others' sight.	measures to encourage citizen participation.		Representing achievements of citizens' participation Giving appropriate information and correct statistics to citizens
	It is Social capital of networks and mutual collaboration which creates value. Social capital is created among them by relationship between people, social network and mutual norms of trust.	Social networks generally provide ground for citizens' participation with objectives including organizing various social groups, sharing interests and creating content.	Through social capital, by creating a series of communications and networks of social relations available in society as well as the level of trust and cooperation between relations attempts to protect environment.	Using capacities of social networks to institutionalize literature of environment protection; Holding briefing and educational sessions for social networks and groups
	Some societies and gatherings try to develop unofficial relations and prefer unofficial membership and participation. In fact this aspect assess unofficial aspects of social capital.	The main purpose of any social capital is to create social capital and facilitating relationship between citizens in order to increase level of citizen participation.		Using capacity of civic societies, club and groups; Protecting innovative, display and scout projects; Taking protective measures in line with preserving environment and energy; Playing the role of a supervisor in executive plans
	One of the main criteria in recognizing social capital is the form and method of individuals' social capital with each other and how they coexist in society.			- Identifying local needs and characteristics; - Use of gatherings in cultural centers, and parks; - holding briefing seminars;

### Conclusion

In the last two decades, the concept of social capital as the most institutional concept in different zones has appeared. Increasing a significant number of researches in this regard indicates the importance and position of social capital at different social classes. Since, the level of social capital in each group or society generally indicates the level of trust, awareness and participation of citizens. Research conducted show that existence of an acceptable level of social capital will lead to facilitating social interactions. The result of this issue leads to use of social capital as the main source for solving this problem and reforming the current processes in critical situations in order to solve this problem. In this regard recognizing effective factors and elements is totally important in

strengthening social capital. Studies conducted in this research analyzed components of social capital to engage citizens in society's affairs from the social aspect. Results of this research show that elements such as social awareness, social trust, social relations, moralities, social networks, social institutes and civic organizations greatly affect strengthening purposeful participation of citizens in society's affair. These elements, by the participation of citizens in environment and their social interaction, will create a desirable coexistence between them. Thus, this issue affects improvement of social capital and by strengthening social networks and links provides ground for voluntary participation.

This definition and analysis of social capital along with elements including it creates a specific capacity in cities that if used properly can provide ground for a part of cities' sustainability. Therefore, activating social capital which in general bears presence and participation of citizens is the best social capacity in managing energy conception and protecting it in cities. Therefore, in order to use this social capacity properly, attending to taking these measures affects strengthening the elements of following social capital;

- Attempt to form and expand social trust among elites, experts and citizens;
- Specific attention to strengthen social capital of citizens to effectively take part in the zone of city management;
- Enacting and enforcing legislation to promote the development of social networks in order to participate effectively in the social arena;
- Developing social interaction to strengthen citizens' abilities;
- Rebuilding attitudes and behaviors of citizens, necessary discussion and informing to promote citizens' moralities;
- Encouraging and strengthening social, professional and creating and strengthening social institutes which is through structural ways to increase social capital;
- Creating a common identity and purpose and providing cooperation and group activities;
- Strengthening cultural components such as the sense of common collective and organizational identity and a sense of belonging to common future;
- Creating collaborative systems and attention to cultural symbols to build culture;

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