Sociometry and Assessment of Social Capital: As a Tool of CSR
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ABSTRACT
Sociometry is the study of human connectedness. In the present paper an attempt has been made to apply sociomerty in assessing and enriching the social capital. A small group of a management department of a college was studied and sociometic test is applied on the group to assess the capital of the group. Various sociometric concepts   as positive choices, negative choices, stars, mutual etc plays an important role in assessing social capital in any organization. For the better results in the present organization we can use social networking for policy formulation also. Present paper is an attempt to find the mechanism of yielding above average returns by existing social capital and to examine how social capital can help to perform Corporate Social Responsibility (CSR).

Key Words: Sociometry, Sociometrics, Star, Mutual, and Isolate.

1. Introduction

Centrality of people in managing organizations has become sharper in today's changing world. Resources like material, technology finance etc. can be brought and acquired but human process as commitment of employees, organizational, managerial style cannot be brought into an organization from outside. Human aspects are critical area of management and also for effective utilization of resources. The concept of social capital refers to features of social organization that create an environment of mutual benefit and coordination. The concept of social capital is broadly defined as an asset that inheres in social relations and networks. From a micro perspective many researchers have studied it at individual level, and from a macro community and organization level.Adler and Kwon(2002) have identified organizational social capital to be related to organizational performance through building trust. It also has potential benefits for building intellectual capital and innovation in the organization. The majority of research in the domain of social capital is at the individual level where the motive of research is to identify individual social capital in the society. Management studies have adopted this conceptualization at the organizational level by recognizing the benefits of networking, social ties and resources that are inherent in those relationships. This leads to ties among the members of a group, and these ties affect the individual's attitude, sense of support and attachment. Networking serves as social support to the people that effects satisfaction and ease at work through social support. To reach out the proper insight at individual level, sociometry can be use as a tool.

2.Problem Statement

The existing literature of CSR(Corporate Social Responsibility) focuses mainly on the compliance oriented activities as understanding the legal requirements. Government concern, stakeholders satisfaction and fill up of community concern. This is a time to find out the mechanism as how CSR activities can yield above average returns. This study aimed at bridging the gap from theoretical perspective , the main contribution of the study would be finding a mechanism through which an

organization is able to out perform its competitors by using for development of intangible resources which are indispensable   for a sustained competitive position in today's competitive business environment. Furthermore this studies mainly highlighting on the importance of sociometry from recognizing the internal networking in the organization.

3. Research Objective

To examine how sociometrics can contribute to building organizational level social Capital.
To examine how sociometrics can contribute in formulation of policies.

4.Significance of the study

Findings of this paper would add to the knowledge and understanding of the area of sociometry and its linkages to building social capital by organization. Particularly, the study focuses on investigating the strategic role that Sociometric Test play in yielding better organizational performance, profitability through development of intangible organizational resources as social capital or reputational capital. This study would contribute to the academic literature of strategic management by explaining how Sociomertic can be helpful in developing intangible organizational resources, which subsequently results in better organizational outcomes. The study has applied perspective as the result of the study will certainly work as a major guiding force for the organizations.

5.Literature Review

CSR was first coined in the 1950s and it gained peculiar attention in management studies in the 1970s. Predominantly, the activities under the umbrella of CSR fall into three categories: economic growth, ecological balance and social progress. Many studies have been done on CSR. Sharp and Zaidman(2009) studied CSR from a strategic perspective and concluded that incorporation of CSR into a firm's strategic management process can yield better outcomes for organizations. The dominant paradigm about the proponents of CSR earliest starts from the work of Carroll(1997) who has described the range of activities included in CSR from philanthropic activities till larger social benefits. According to Carroll 'companies are expected to generate profits, obey the law, operate in line with social norms and do well in society beyond the society 's expectations. According to Clarkson (1995) and Surocca(2010) CSR is about meeting the needs of wider stakeholders in the society. Therefore CSR discourse is becoming multidimensional, including social needs,stakeholder management and profit maximization, whereas certain researchers, such as Luetkenlorst(2004) identify CSR from compliance and engagement to harm Jarzabkowski(2004) introduced a model of strategization of CSR that advocates that as CSR is goal-directed it can be strategic in nature, and CSR practices can be widely adopted throughout the organizational community because of the value creation feature of CSR. In sum, the central thesis of CSR is minimization and value creation. The most common operationalization of CSR has been done in the work of Carroll(1991) who provides the foundational concepts of CSR. The firm's CSR practices should encompass its economical, legal, ethical and voluntary activities for social responsibility, whereas more and more emphasis is only on the voluntary practices that may include philanthropy, corporate volunteerism and corporate   citizenship. Carroll describes various dimensions of CSR as Economic, Legal, Ethical and Voluntary. Windell(2007) in his study of commercialization of CSR uses the Sociometric Test to differentiate between the world-saviours and money-makers consultants. Saeed(2012)develops propositions for strategic use of CSR activities by creating Social and reputational capital that ultimately leads to profitability. Aguinis (2011) concisely captured several key elements of CSR when he defined it as ''context-specific organizational actions and policies that take into account stakeholders' expectations and the triple bottom line of economic, social, and environmental performance'' Socially responsible firms should first achieve their economic goals and fulfill their legal obligations. However, they also

should adhere to ethical standards not mandated by law and engage in some philanthropic or other discretionary activities that help address the needs of society (e.g., Carroll, 1979; Wartick& Cochran, 1985; Wood, 1991).

6.Conceptual Framewoek

6.1.Sociometry

For the analysis of network of relationship, ties among group members, trust facilities, communication ,information sharing and collaboration, Sociometric techniques can be used. Mareno decribed(1954)"Sociometry is a method for describing, discovering and evaluating social status, structure, and development through measuring the extent of acceptance or rejection between individuals in a team. It is concerned with attractions and repulsions between individuals in a team, in this test person is asked to choose one or more persons according to more specified criteria. As the science of team organization, it attacks the problem not from the outer structure of the team, the team surface, but from the inner structure". Sociometric explorations reveal the hidden structures that give a team its form; the alliances, the sub teams, the hidden beliefs, the forbidden agendas, the ideological agreements and the stars of the show. It helps us to get the leader of team, chains existing in the team, mutual relations which effects team's performance and helps to make future chains, diagnosis of gaps or cleavages existing in the team , to know about misinterpretation of ourselves , recognize isolate persons and take remedial actions for them. When individual meets they make a team. Inner structure of team depends on team member's individuality. Individuality is described in two aspects by Johnson (1970) as physical or biological individuality and sociological individuality. Strong individuality expresses more fully the spirit of quality. Individuality represents in each person's relations to other, acts autonomously, with his own interpretation of the claims of others upon himself, has some independence of judgment, some initiative, some discrimination, or some strength of characters. The degree in which a person exhibits these qualities shows the degree of individuality he or she possesses. In any team we always have different types of individuality and incessant struggle of diverse and opposing interests. This always affects the team performance. So it becomes very necessary to know about the team's strength and work on weaknesses As Moreno (1953) described that the complex of interpersonal relations in a team predefines a primary social; and psychological base of a team and the feature of this basement predefine the internal state of each person in the team, not only what the team is itself. Sociometry helps how the people behave in a team.A deeper facet of sociometry extends to social capital.

Sociometrics explore measure and display the informal networks of relationships. Their intention is individual and group development through increased spontaneity where individual and groups find new solutions to an old or recurring situations, and adequate responses to new situations. Spontaneity includes the added dimensions of creativity and inventiveness to these responses. By working directly with group members, and making the invisible networks of relationships visible, sociometrics provide group members with information on their inner group structure and work with group members' inter-relationships as they respond. Essentially, the sociometrics facilitates the group to achieve its goals more effectively. Diana Jones elaborates the terminology within the group.

Table -1.   Sociometry and Social Network Analysis – terminology

Sociometry	Social Network Analysis
People, Participants, Group members	Nodes, Egos, Actors, edges
Groups, Organisations	Alters
Choices, Relationships	Ties, Paths, degrees
Choices made	Degrees (out of) centrality
Choices received	Degrees (in of) centrality
Sociometric star: the person most highly chosen in response to a criteria: positive star, negative star and star of neutrality	Star, centrality
Isolate – a person who does not choose and is not chosen	Isolate - a person who has no links
Mutuality, reciprocity: a relationship made where people choose one	Symmetric link
Non-mutual choice	Asymmetric link
Pivotal person	Liaison, bridge
Sociogram	Sociogram

6.2. CSR and Sociometry

CSR is a company's commitment to operating in an economically, socially and environmentally sustainable manner, while recognizing the interest of its stakeholders including investors, customers, employees , business partners, local communities, the environment and society at large CBSR(2004).According to Putnam, (1993) social capital is accumulated through actual human relationship and interactions that initiate and facilitate strong internetwork ties and norms, which boost cooperation and collective action. Such network of relationship can be developed consciously by the people and also by other social activities. Colmen(1998) and Moon's (2007) work on CSR mention that Companies internal and external networks provide opportunity for social transactions. An employee may use his formal and informal relationships inside and outside of the company to mobilize resources. In such informal networks, employees can volunteer ideas and opportunities to develop, so that their company can adopt and can capitalize on their social networks to accumulate resources. Such social networking and capitalization can bring the key organizational actors together and utilize their key competencies for collective action. Sacconi and Antoni(2008) conducted an empirical research on CSR practices and social capital creation on non profit organizations, and concluded that CSR practices adopted as a formal instrument and to implement a multi-stakeholder ownership approach can positively affect social capital creation by maintaining cooperative personal relationships .Another study on CSR in Jordan concluded that all internal CSR practices such as talent development, work safety and health, diversity management and employee rights are positively correlated to affective and normative commitment of employees. Rupp (2006) explain that employees' perceptions about CSR impact their subsequent behaviors and emotions and coordination in their organizations through an organizational justice framework. For effective implementation of CSR knowing the density , cohesion , stability and intensity of the group is must.Sociometrics will help us to find out the team and private indices of the group or any organization.

6.3.Sociometry and social capital

To fulfill the objectives of the study the case study is mentionabl**e** which is conducted by the author in one of the north India's largest educational institute. This group consists of only five members. These member are given code A,B,C,D and E, in which A is head of the department and other faculty member are having same designation. Every member is told to make three choices as Positive(+), moderate(0) and negative (-)means the person whom you liked most, then the person who will be moderate choice for sitting for you and the person with whom you never wish to sit. Sociometrics on the basis of question "with whom you wish to sit?" of the team is given below.

Table No. 2- Sociometrics

Employees	A	B	C	D	E
A	×	o	+	-	
B	+	×	o		-
C	+		×		o
D	+		o	×	
E	+		o		×
Total+	4	0	1	0	0
Total-	0	1	0	1	1
Total	0	0	3	0	0
Total	4	1	4	1	2

An analysis of Sociometrics is based on team index and private index. Team indexes provide evaluating the sociometrics status of a team of people participating in the investigation. In this study we will calculate team indexes as Density, Cohesion, Stability and Intensity. While private indexes provide position of a member in a team who is participating in sociometric testing. We will very first focus on team indexes;

Team Indexs

▢ *DENSITY,*

▢ *COHESION*

▢ *STABILITY*

▢ *INTENSITY*

Table No. 3-Team Indexes of the team (Annexure-1)

	Description	Value
Density	The index describes the density of inner relations in the team.	0.25
Cohesion	The index describes the strength of mutual attraction of members in the team.	0.20
Stability	The index describes which minimal part of the team must be removed to divide the team to unrelated parts.	1.00
Intensity	The index describe the value of dissatifaction of members By emotional relations in the team.	0.30

On the basis of analysis team density is .25 which shows the configuration of inner relationship is not in good position. Cohesion is also .25 which explores the strength of mutual attraction of members in the team. As its range is 0-2 so team cohesion is very week in the present study. since member A was the common choice of the team but mutual choices are very low only two person choose each other. Stability is perfect in the team as we got only two negative choices in the team i.e no need to remove any part of the team. Value of dissatisfaction of members by emotional relations (intensity) is .30, shows the existence of tension in the team. There is need to work on maintenance of inner relations of the team and make some exercise to develop mutual relations in the team. In the above analysis group cohesion , emotional affection as well as density is on borderline, which indicates lack of social capital in that particular group of the organization.So before working on internal CSR the organization should find out the measures to enhance social capital in the group.

Private Indexes
 WEIGHT
 EMOTIONAL EFFISIVENESS
 SATISFACTION
STATUS

Table -4- Private Indexes of the Team (Annexure-2)
Name at top row is the same as name of member at left column of Socoimetrics

Name	Description	A	B	C	D	E
Weight	The index describes which part of the team defines the member with number i as valuable using some criterion.	1.00	.25	1.00	0	.25
Emotional effusiveness	The index describes which part of the team is valuable for the member with number i using some criterion.	0.50	0.50	0.50	0.50	0.50
Satisfaction	The index describes which part of choices made by the member with number i is mutual.	1.00	0	1.00	0	0
Status	The index describes how much the member with number i is attractive for others.	1.00	0	0.25	.25	0.25

In reference to the **weight,** member A & C are getting full weight in the team as both get four choices, but A is more important than C because he get all four +ve choices while C got three moderate choices and one +ve choice. D's weight is zero for the team while B&E are less weighted, as B got only one choice E got two choices in which one is negative. **Emotional Effusiveness** is .50 for the whole team which shows 50% of the team is valuable for each member of the team, indicates that positive mutual are lacking in the system but negative mutual are not active in the team, this is beneficial for the team. As neutral choices are always better than negative choices and helps to increase team cohesion. Various efforts of increasing social capital can convert these neutral choices into positive one. **Satisfaction** For A& C we get maximum index value because they have mutual positive choices while others do not have any mutual positive choices hence the satisfaction level is 0 for them. As Johnson mention that individual grows from society, so satisfaction level increases with other's responses. As without mutual relationship group bonding cannot become strong. .

As per ***Status** of members in the group is concerned* A is having superior position officially as well as personally by capturing all positive choices and scored 1, B get only one moderate choice and no positive choice ,its value is 0, C got only one positive choice and its value is .25, while D & E got one negative choice each and values .25 for dislikening in the team. It is clear that A & C has higher status in the team; B has neutral position while D & E have comparatively lower status in the team. From micro perspective many researchers have studied social capital at individual level as it considered as an asset that inheres in social relations and network. So the analysis of private indices we can evaluate the micro level structure of networking.

Appraisal of Findings

*With the terminology provided by Diana Jones(table-1), people, participants, group members, organizations, choices made and received, relationships, stars, isolates reciprocity, non-mutual choices ,pivotal people in an organization can be traced with the help of sociometry. In addition by analyzing team indices as Density, Cohesion, Stability and intensity of a team we will be able to get a status of social capital in organization, w*hile private indices as weight ,emotional effusiveness, satisfaction and status provide the status of networking in the group.

Persons having more weight in the group has the more ability to create social capital, emotional effusiveness indicates about presence/absence of positive/negative mutual, with the help of which we can work on important aspects of networking. Sociometry is able to tell about the satisfaction level of individual similarly the status of individuals within a group can be evaluated on the bases of positive and negative choices. There is a positive relationship between CSR and social capital. The following propositions can be constructed related to sociometry and CSR/Social Capital.

*Proposition 1*. Social Capital is an asset that consists of network of relationship.

Proposition 2. Sociometry is a tool from which we can find out the existing network in an Organization.

Proposition 3. Sociometry is a tool with which we can elaborate the team and private indices within the group or organization.

Proposition 4. Sociometry is a tool which will play an applied role in implementation of CSR and policy formulations.

Future Research Agenda

This article through a light on the use of Sociometry for building organizational intangible resources .Finally an integrated model of internal CSR activities and uses of sociometry is developed.
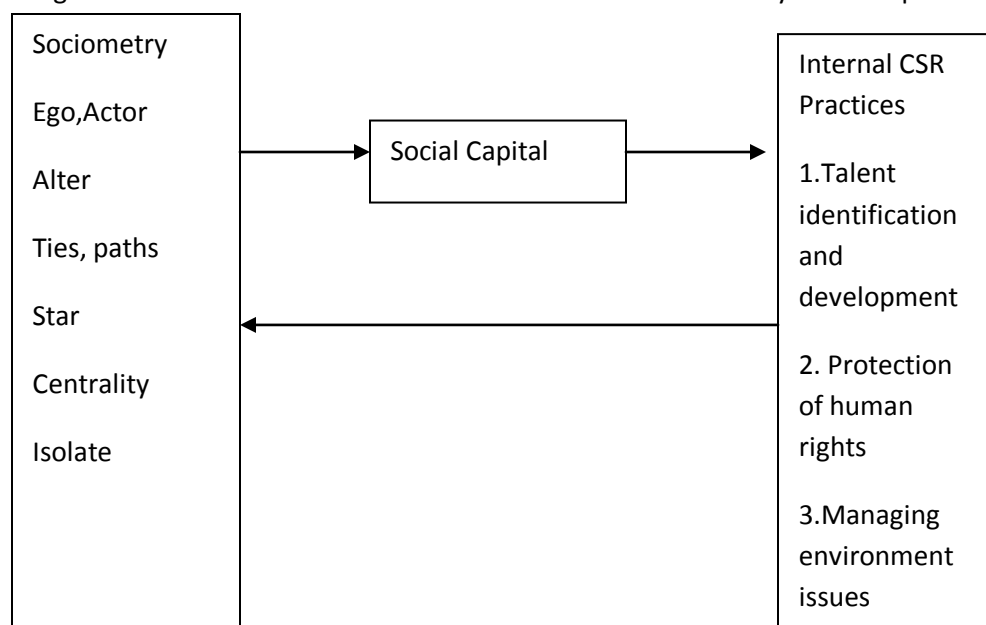
The construct described in this model can be operationalised and measured empirically. By the empirical validation of this model CSR managers can better comprehend the contribution of Sociometry to resource management for the organization.

ANNEXURE-1
Team Indices
DENSITY

The index describes the density of inner relations in the team.

P=M/N(N-1)
where M - the number of choices; N – the number of members in the team , which may be 2 or more .In the present team of five members
M=5, N=5
So; P= 5/5(5-1)= 5/20= 0.25
Minimum index value: 0 (there isn't any choices in the team),Maximul index value: 1 (the number of all possible choices is equal N*(N-1)),Range of index change: from 0 to 1.
COHESION
The index describes the strength of mutual attraction of members in the team.
S=2*M+/N (N-1)
where M- the number of mutual positive choices; N - the number of members in the team.
we can see that the index depends on the positive choices. . Its value is always the same both for positive and for negative choices.
M+= 2, N=5
S= 2*2/5(5-1
S= 4/20=.20
Minimum index value: 0 (there isn't any positive choices in the team),Maximum index value: 2 (the number of all possible choices is equal N*(N-1)),
STABILITY
The index describes which minimal part of the team must be removed to divide the team to unrelated parts.
J=M+K-1/N-2
where ,M - the number of non-mutual choices; K - the number of pairs of mutual choices; N - the number of members in the team. M=3 ; K=1 and N=5
J= 3+1-1/5-2
= 3/3
= 1
INTENSITY
The index describes the value of dissatisfaction of members by emotional relations in the team.
N= 2*(M-2*K)/n*(n-1)
where ,M - the number of choices; K - the number of pairs of mutual choices; N - the number of members in the team.
M=5; N=5 ; K=1
N=2*(5-2*1)/5(5-1)
= 2*(3)/5*4
= 6/20
= .30
Minimum index value: 0 (all made choices are mutual), Maximum index value: 1 (the maximal number of choices of one type without mutual choices is and K=0),Range of index change: from 0 to 1.

ANEXURE-2

Private Indexes

WEIGHT

The index describes which part of the team defines the member with number i as valuable using some criterion.

$P_i = M_i/N-1$ (where ,M_i - the number of choices which member with number i have got, N - the number of members in the team.)

In our team there are five members having value of M as;

$M_a = 4$, $M_b = 1$, $M_c = 4$ $M_d = 0$ $M_e = 1$

$P_a = 4/(5-1) = 4/4 = 1$; $P_b = 1/5-1 = 1/4 = .25$; $P_c = 4/4 = 1$; $P_d = 0/4 = 0$; $P_e = 1/4 = .25$

The number of members is usually more 2 and more several tens. Then:

Minimum index value: 0 (member-i didn't get any choices),maxisum index value: 1 (if $M_i = N-1$),Range of index change: from 0 to 1. M

EMOTIONAL EFFUSIVENESS

The index describes which part of the team is valuable for the member with number i using some criterion.

$A_i = M_i/N-1$ (where M_i - the number of choices which the member with number i made; N - the number of members in the team).

Since in this team every person has made 2 choices in which one is moderate and one is positive , so Emotional effusiveness

$A_i = 2/(5-1) = 2/4 = .50$ for each and every person

So $A_a = .50$; $A_b = .50$; $A_c = .50$; $A_d = .50$; $A_e = .50$

Minimal index value: 0 (member-i didn't make any choices),value: 1 (if $M_i = N-1$),

Satisfaction

The index describes which part of choices, made by the member with number i, is mutual.

$E_i = M_i/K_i$ (Where, M_i - the number of mutual choices (when the members choose each to other) for the member with number i; K_i - the number of choices which the member with number i made)

For $E_i(A) = M_i = 1$, $K_i = 1$, $E_i + 1/1 + 1$

$E_i(B) = M_i = 0$, $K_i = 0$, So $E_i(B) = 0$,

Similarly $E_i(C) = 1/1 = 1$, $E_I(D) = 0$,, $E_i(E) = 0$

The index is significant if the member made at least one choice. Then:

Minimum index value: 0 (member-i don't have any mutual choices),maximum index value: 1 (obviously, that $M_i <= K_i$ is always true),

STATUS

The index describes how much the member with number i is attractive for others.

$Sta = M_i^+ + M_i^-/N-1$ (where – M_i^+ the number of positive choices, which member with number i have got; M_i^- the number of negative choices, which member with number i have got; N -the number of members in the team).

We can see that the index depends on positive and negative choices simultaneously. Its value is always the same both for positive and for negative choices.

Minimum index value: 0 (member-member-i got all possible choices, the number of which is N-$Sta(A) = 1$, $Sta(B=) = 0$, $STa(C) = .25$, $Sta(D) = .25$, $Sta(E) = .25$.

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