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Constructing the Integrated Social Capital Index (ISCI): A Comprehensive Measure of Relational and Systemic Dimensions of Social Capital

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Abstract
Esser (2007) has laid a comprehensive theoretical foundation for social capital but did not empirically measure it. This study aims to measure the Integrated social capital index and sub-indices of its sub-dimensions at the cross-national level. The study has collected data from several secondary sources for 53 variables, covering all dimensions of social capital. Social capital is divided into two sub-dimensions, relational capital and system capital. Relational capital is subdivided into three dimensions, i.e., positional capital, trust capital, and obligational capital. Similarly, system capital is also divided into three sub-dimensions, i.e., system control, system trust, and system morality. The study has used PCA and an equal-weighted average method to develop the index. The data have been collected for a set of countries, including developed and underdeveloped countries. The study has shown that countries with higher social capital are ranked higher in the relational capital index and the system capital index.

1. Introduction

The concept of social capital determines that how people, networks, and institutions interact on the basis of trust, cooperation and moral values to gain or provide benefits to one another. Tshe term social relation only focus on the nature of relationship or interaction; while "social capital" refers the social relations as "resource" which helps to gain economic and social benefits. When individuals, or networks or system helps one another society become more productive and efficient.

Hanifan (1916) defined social capital as "Those tangible substances that count for most in the daily lives of people, namely goodwill, fellowship, sympathy, and social intercourse among individuals and families." Bourdieu (1986) defined social capital as "The aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition." Coleman (1988) defined social capital as "Social capital is defined by its function. It is not a single entity but a variety of different entities, with two elements in common: they all consist of some aspect of social structure, and they facilitate certain actions of actors within the structure." Putnam (1993; 2000) defined social capital as "Connections among individuals—social networks and tshe norms of reciprocity and trustworthiness that arise from them." Fukuyama (1995) postulates the definition as "The existence of a certain set of informal values or norms shared among members of a group that permit cooperation among them." According to Lin (2001) social capital is "Investment in social relations with expected returns in the marketplace." Woolcock (2001) presented the definition of social capital as "the norms and networks that enable people to act collectively, emphasizing bonding, bridging, and linking forms." Esser (2007) defined social capital as "the system of relations, norms, and trust that enable individuals and institutions to cooperate

effectively for achieving both personal and collective benefits." Different theorists provided the definition of social capital on the dimension they have used to build their theory. In this study we have discussed all dimensions of social capital. Thus we can define social capital as: Social capital refers to the degree of social relations and interactions among individuals, networks and institutions, based on trust, shared norms, and collective values, which enable cooperation and effective mobilization of social and economic resources for mutual gains.

The term social capital first used by Hanifan (1916). He explored that social capital in terms of good will, friendship and cooperation helps to improve educational and community life. Later for fifty to sixty years the term remained unexplored. Later Bourdieu (1986) explored the term social capital and state that social capital is a resource of networks which helps to gain social and economic benefits. Coleman (1988) discussed the social capital is the functional aspect of social structure that invests in individuals as well as collective actions. Putnam (1993; 2000) has broaden the concept of social capital by linking it to trust, civic associations and institutional performance. He stated that all together determines the social capital which helps to gain opportunities. Fukuyama (1995) stated that it is the cultural moral values which shapes the social capital. Lin (2001) has laid technical foundation for social capital by discussing its axioms and theorems regarding social relations, strength and capacity of networks. Woolcock (2001) has explored the social capital under the context of bridging bonding and linking capacity of social capital within and among networks. The evolutional of social capital's theories based on multi-dimensional phenomenon. Every theorist presented the social capital from different aspect.

Esser (2007) captures the nature of multi-dimensionality of social capital and developed a comprehensive theoretical framework which covers its multi-dimensionality as well as covers its two folded aspects i.e. micro aspect of social capital and macro aspect of social capital. He divided social capital into two aspects relational capital which covers all the factors at individual's level and system capital which covers the macro picture of social capital. Relational capital is further divided into three dimensions i.e. positional capital, trust capital and obligational capital. On the other hand, system capital also divided into three dimensions i.e. system control, system trust and system morality. All six dimension covers the multi-dimensionality of social capital. Positional capital is the first dimension of the relational capital which explains that strategic positions in civic, hierarchical and ethnical networks. These strategic positions are the redundant contacts of the individuals through which they get benefits and opportunities. Trust capital is another dimension of relational capital. Individual's trust in individuals and individual's confidence on established networks determines that how much individuals are comfortable in building social capital with one another and with networks and systems. Obligational capital captures the moral aspect of individuals that how much they are motivated to help others voluntarily. Relational capital is all aspects at individuals' level which helps in maintaining social capital with trust and morality.

System control is the first dimension of system capital which implies that how efficiently government is exercising the governance institutions in the country. The productive governance institutions ensure effective and efficient policy formulation and implementation. The second dimension of system capital is system trust which determines that either both institution and legal system are transparent to deliver their responsibilities. And the third dimension is system morality which ensure that government is focused on exercising morality and norms in the system by reducing political, ethnical and religious conflict. Good governance or system control can only efficiently work when system trust and morality is developed among individuals and networks.

Although, Esser (2007) has laid comprehensive theoretical foundation for the social capital by covering its all dimensions but did not expand it empirically. The other theorists like Putnam (1993, 2000) Fukuyama (1995), Lin (2001) provided the empirical evidence but their study has captured only one dimension of social capital which is limited to specific regions and communities. The aim of this study is to build integrated social capital index and the sub-indices of its dimensions at national level on the theoretical foundation of Esser (2007).

The index will be developed by using PCA and equal weighted average method. Theorist like Putnam (1993; 2000), Lin (2001), Fukuyama has developed index by using PCA method. While in this study equal weighted average method has also used on theoretical grounds that all dimensions are equally important.

2. Literature Review

Several authors and theorist have measured social capital index for specific regions and communities to determine its impact on economic, institutional and social development. In this section we will discuss the literature related to the measurement and development of social indices.

Putnam et al. (1993) developed an index of civic community by using equal-weighted average method for twenty regions of Italy. They have collected data from secondary sources for time span of 30 years on the indicator's voters' turnover, Newspaper readership, and civic membership, the study has revealed that the regions with higher civic engagement have more effective governance system than other regions.

Knack and keefer (1997) used generalized trust, and civic cooperation as proxies of social capital to determined its economic impact. They have collected data for 29 countries. It is the first which empirically test the impact of social capital on economic performance cross-nationally.

Narayan and Prichett (1999) have developed social capital index at house-hold level. They used primary survey data from social capital and poverty survey and applied additive scale to construct the index. The variables used in the study were membership in local groups, meeting participations, norms of cooperations, and collective activities. The study investigate that social capital has significant impact on household income level.

Rupasingha et al. (2000; 2006) developed a country level social capital index by using voters' turnout, density of non-profit organisations, and census response rate. They applied PCA to develop index. They study revealed that social capital has significant impact on economic growth.

Kawachi et al. (1997; 1999) has developed social capital index by using generalized trust, level of sensed reciprocity, and per-capita membership in voluntary organisations. The data has been collected from secondary source of behavioural Risk Factor Surveillance System for the time-span of 14 years. The study has investigated that lower social capital negatively and significantly influences the health issues.

Bornschier and Leicht (2000) developed social capital index by using the data on generalized trust and item of tolerance from World Value Survey, and World Competitiveness report. The study has revealed that both indicators of social capital significantly effect the economic growth. Bjornskov (2003) has constructed social capital index by using generalized trust, social participation and index of corruption. Later Bjornskov and Svendsen (2003) developed the social capital index by using generalized trust, number of organisations in which average citizens participate, corruption index, and economic freedom. Both studies revealed that social capital has positive and significant impact on economic growth.

Uhlendroff (2004) measured social capital index by using honorary work in associations, societies and social services, and political engagement from German SOEP 1994-2004. The study has found that social capital has significant impact on re-employment opportunities in east Germany only.

The study of Tavits (2006) has compared the impact of social capital index on fiscal development in Germany and USA. In both countries the study has used different indicators for social capital. The indicator used for social capital in USA was trust, informal sociability, and cooperation in community, while for Germany the author used only two indicators i.e. Generalized trust and member in association. The study revealed that high level of social goods demands for more public goods and services.

Paxton (2002) used aggregated mean number od voluntary association unpaid voluntary work, generalized trust and international NGOs to measure social capital. The aim of the study is to determine its impact on democracy. The results have shown that the constructed social capital index have positive and significant impact on democracy. Sabtiani (2005) measured social capital index under three categories bridging social

capital, bonding social capital and linking social capital; and represented by weak ties developed with neighbour and friends, strong ties developed with family and relatives, and formal ties developed by people from different back grounds respectively. The study empirically tested that social capital has positive impact on economic development. Later in study sabatini (2007), empirically tested the impact of social capital on human development and study has showed the positive significant impact on human development.

Callios and Aubret (2007) measured social capital in terms of bonding social capital and bridging social capital. He used social homogeneity, trust, loyalty, reciprocity, cooperation, and conservatism as indicator for bonding social capital and emigration, and immigration indicators, business links, electoral turnout, number of subsidies granted as indicators of bridging social capital. The study has revealed that social capital has positive association with employment growth.

Beugelsduk and Smolders (2003) measured social capital via membership in several groups, family ties and materialism and collected data for 54 regions from EVS(1999) and explored that social capital is associated with economic growth positively. Oorschot et al. (2006) used six indicators to construct social capital index. These indicators are participation of voluntary organisation, socialization with family and friends, trustworthiness, generalized trust, trust in institutions and political engagement. And data has been collected from EVS. Later, Jankaukas and Septutiene (2007) used the index in their study and investigated that social capital has positive impact on GDP per-capita.

Engbers, Thompson, & Slaper (2016) used five typologies of social capital and reviewed the national survey data that can support the types of social capital. The five typologies of social capital are trust, formal membership and participation, altruism and political engagement, informal interaction and shared norms. The authors stated that social trust is determined by the degree of criminal activities, generalized trust, institutional trust, and racial trust. There is negative relation between criminal activity and social trust. Formal membership and participation are determined by group membership, organizational concentration, organized group involvement. Altruism and political engagement are determined by civic participation, civic volunteerism, media engagement, philanthropy, and political participation. Informal interaction is measured by community ties, industrial cluster, informal interaction, social interaction, social network, and social network diversity. Shared norms and homogeneity are made out by denominational membership, religious homogeneity, demographic homogeneity, economic inequality, and political homogeneity. The authors have used factor analysis to measure social capital. The study has suggested to combine similar measure of efficiency by constructing index for each variable.

Peluso et al. (2024) used voter turnout, number of nonprofit organizations, civic and religious associations, census response rates, community participation and trust to measure social capital in all states of United states of America. The author applied PCA to measure social capital. The study has empirically tested that lower social capital leads higher income inequality, while some states the relationship was weak.

The past studies on measurement of social capital have used few administrative variables, trust variables and civic engagement variables. Secondly, several studies have used PCA to measure social capital. Thirdly, the study has revealed positive impact on economic and social indicators.

3. Theoretical Background

Hanifan (1916) was the person who used the elements of social capital in his study to find out the importance of social relations. He investigated the impact of social relations on the school performance of students. Bourdieu (1986) elaborated the idea of social capital through the lens of cultural capital. He explained that set of values, pattern of thinking, and habits of people are shaped by the specific culture or class. Some culture occupies higher status in society than other and they get benefits on the basis of the status. He argued that social capital is rooted from the cultural norms and values. Coleman (1988) developed the theory of social capital by its functions. The functions of social capital include some aspect of social structure which facilitates

actions of individual working in that structure. He combined the concept of Loury (1987) and Granovetter (1985) and explained that social capital is build, when trust and trustworthiness nourish the social relation through the effective economic transaction and consequently, individual maximize its benefit. Loury (1987) explained that social relations help to maximize the utility of individuals. On the other hand, Granovetter (1985) highlighted the trust and relationship which is developed by the embeddedness of economic transaction which helps in determining expectations and creation and enforcement of norms. Brut (1992) adopted the perspective of rational-choice theory and explain the concept of social capital in context of structural theory of action. He postulates that different actors occupy different positions in network and these positions in a network depends on the resources the actor owns. These resources are social capital, human capital and financial capital. Financial capital and human capital are the economic resources while social capital is the degree of relationship between two actors who interact with each other to achieve common goals as well as individual's goals. Brust has discussed the types to networks such as ego network, network of individuals, network of groups and subgroups to explain the structure of social capital. Putnam (1993) discussed the elements of social capital, characteristics of social capital, and bridging and bonding of social capital. His theory of social capital revolves around the civic networks and he empirically stated that the higher density of civic/horizontal network than hierarchal networks help the citizen to get more benefits. The theory further explains the characteristics of social capital i.e. externalities of social capital, underinvestment of social capital, social equilibria and nature of relationships. Social capital produces both negative and positive externalities. Low level of social capital produces negative externalities and higher level of social capital produces positive externalities. Lin (2001) constructed the theory of social capital on the pillars of four concrete axioms and theorems. The four axioms include the structural postulates which determines the position of actor within hierarchal network; interaction postulates explain interaction of people on the basis of same background, status and resources, and interaction of people with different background, status and resources; network postulates explain the networks with its all entities i.e. position, resources, rules and procedures; action postulates explain the level of motivation of an actor within the network. Besides these four axioms, he also explains the seven theorems which explain the proposition of social capital, strength of position, strength of strong tie, strength of weak ties, strength of location, location by position, and structural contingency. The author explains that position and location of networks or actors highly effect the strength of social capital.

Castiglione, Deth and Wolleb (2008) has incorporated comprehensive ideas and empirical results from different authors in the book "The Handbook of Social Capital". In this study we have incorporated the ideas of different authors which are aligned with the theoretical framework of Esser (2007). Majorly, we have incorporated the idea of social capital in multicultural society by (Fennwema & Tillie, 2008). They are point of the view that cultural cleavages, ethnic access to power shapes the trust, strong and weak ties and political relations in the country.

The study of Esser (2007) laid a strong and comprehensive theoretical foundation for social capital. He argued that social capital is a multidimensional phenomenon with two folded meaning i.e. individual aspect and collective aspect. Social capital is the amalgamation of individual and social aspect of control and use of resources. Esser (2006) has divided these resources into two dimensions of social capital i.e. relational capital and system capital. He defined that relational capital possesses individual's properties of social capital which are in the social form of income and endowment resources that an actor can invest in his/her social relations to gain benefit. While system capital is referred to as "collective good" or "public good" which maintain and control the behaviour of people withing and among networks. Now we will discuss these dimensions in detail.

3.1 Relational Capital

Esser (2007) has further divided Relational capital into three dimensions, i.e. Positional Capital, trust capital

and obligational capital.

Positional Capital is defined as the social relationship of individuals which helps to maintain the flow of information within and among networks as well as the structure of networks. Flow of information can only be managed when individuals maintain strong social ties with redundant contacts. Such contacts are explained as the contacts with the person who occupies strategic position in relevant network. Thus, individuals who hold strategic position in any kind of network either horizontal or vertical refers to the positional capital. Horizontal networks include the civic associations of the individuals. In such networks mostly people belong to same status and background which helps to build strong ties. while in vertical or hierarchical networks individuals are in relation of authorities and subordinates which build weak ties. Thus, positional capital of any country includes strong and weak ties of individuals which help them to maintain the flow of information. Esser (2007) has argued that ties of people with the people holding strategic positions in any network is referred to as Positional capital. While Fenn-Wema and Tillie (2008) has discussed that social capital in specially the weak and strong ties are greatly affected in multicultural countries. Thus, positional capital index includes the "strong strategic positions", "weak strategic positions" and "ethnic strategic position" in a country.

Trust Capital describes as the portal of gaining sensitive information. The higher the trust, the more chances to get information. The quality of trustworthiness of an individual eligible him/her to use resources to gain information. The term trust and trustworthiness are used as lubricants for smooth social and economic transaction. The lack of trust leads to higher transaction cost, economic frauds, social instability, time waste, and bureaucratic issues. Trust capital includes the trust of individuals on other individuals as well as their confidence on established networks in the country.

Obligational Capital is defined as the additional motivation of the actor/individual to pass on the requested resources or benefit. This additional motivation refers to the norms of reciprocity which implies that people help each other without expecting any immediate return. Trust and obligation work side by side because both become necessary when actor/individual have high dependency on one another. when trust and obligation work in right direction it creates the environment of reciprocity within network and among networks which stabilize the functions and operations.

3.2 System Capital

Esser (2007) has further divided system capital into three dimensions i.e. System Control, System Trust and system morality.

System Control is defined as the 'monitoring capacity' of an organisation, networks, as well as country through institutions which controls the problem of collective behaviour. If institutions are efficient people, groups and regimes adopt trustworthy behaviour which prevent manipulation of resources from selfish gains. On the other hand, trustworthy and reciprocity will be highlighted and rewarded.

System trust Esser (2007) Has explained that system trust ensures all actors that their trust and efforts will not be exploited. And free riders and exploiters will be punished to secure their efforts and rewards in future. He argued that only generalized trust do not determine the social capital but aggregate level of trust matters equally. Levi (1998) Argued that political institutions especially state play a dominant role in shaping and developing trust in the society. Muller and Seligson (1994) stated that institutional structure especially democratic setup develops the trust in the state. Uslaner and Badescue (2004b) stated that unfair courts and

corrupt government shape the trust of teh society. Corrupt government and politicians, business executives and unfair courts destroy trust level in the state. It implies that transparency and strong justice system helps to develop higher level of trust and promote democratic system. By focusing on macro picture of trust, Castigilion, Deth, and Wolleb (2007) has argued that the role of governmental policies is to maintain economic equality in the society. He has presented the graph plotting the negative relationship between economic inequality and aggregate level of trust. He argued that along with strong institutional structure and legal framework economic equality also invest in aggregate level of trust in the country. Moreover, he second the concept of Marschall and Stolle (2004) that heterogeneous population leads to lower level of trust in society. Diversity causes hurdles in provision of opportunity which trigger distrust in society. Thus, these macro factors determine the system trust in the country.

System morality Esser (2007) has argued that system morality is the reciprocal of norms, values and ethics which are followed by people in their relationships to increase the trust level. He stated that morality, norms and values considerably reduce the risk of social delimmas. Putnam (1993) argued that morality stabilize the social relations and develop trust. He stated that the lower level of moral norms, values and trust raises conflicts in the society. coleman (1990) argued that lack of moral obligations and shared norms leads political, religious and ethnic conflict in the society.

Esser (2007) has covered the maximum possible dimension of social capital while other theorists have discussed the social capital partially by using one or two aspects. In this study, integrated social capital index has been generated on the theoretical background of Esser.

4. Variables, Data and Methodology

In this section we will discuss research methodology for constructing integrated social capital index by using PCA and Simple Average Method. The data will be collected for the time span of 27 years from different national or international sources for developed and developing countries.

Esser (2007) has laid strong foundation of social capital by dividing it into two dimensions i.e. relational capital and system capital. Relational capital is further divided into three dimensions i.e. positional capital, trust capital and obligational capital. Similarly, system capital is divided into three dimensions system control, system morality and system trust.

4.1 Variables and Data

Now we will discuss variables and data collection sources for the construction of Integrated Social Capital Index (ISCI). The data has been collected for Developed economies and Emerging economies for the time span of 27 years 1998 to 2024.

Variables for relational Capital Index

Strong Strategic Position

Strong strategic position is the first variables of positional capital. Esser (2007) has discussed that strong strategic position is held in civic associations, people from same status and background and positions. Thus, we have included two variables civic membership and number of seats in legislative bosies and number of cabinet ministers in the country. The data on civic membership is available in the database of world value survey. Civic membership includes 9 nine sub-variables i.e.

1. Active Membership in Consumer Organisation
2. Active membership in art and Music
3. Active membership in religious organisations
4. Active membership in Environmental Organisation

5. Active membership in Labour Union
6. Active Membership in political organisations
7. Active membership in Professional Organisations
8. Active Membership in sports or recreation
9. Active membership in self-help group

While the data on number of seats of legislative body and number of cabinet minister has been collected from the national sources of the countries.

Weak Strategic Position

Weak strategic position is the second variable of positional Capital. Esser (2007) has discussed that weak strategic positions refer to the weak ties of the people who works in hierarchical networks. Hierarchical networks include governmental departments and organisations and private organisations. Thus, employment rate of countries covers all the employees working in the hierarchical networks. The data on employment rate is available in the database of world bank.

Ethnic Strategic Position

Ethnic strategic position is the third variable of positional capital. Fennwema & Tillie (2008) has discussed that social capital in multiethnic societies will be higher if ethnic societies will have equal political rights and participation. Thus, in this study, data on ethnic access to power has been collected from the database of Ethnic Power relations. The data set contains the percentage of ethnic groups and the groups' political power status. The status is categorize as given below.

Category	Meaning	Numeric Value
Monopoly	One group controls all Political power: No ethnic access to power and political rights	0: no access to power
Dominant	One group dominant other but not exclusive: Little access to power or political rights	1: Little access to power
Senior Partner	Groups share the power	2: Equal access to power
Junior Partner	Groups share power at secondary position to dominant group or senior partner	All these categories are belonging to above three main categories. Thus, these are no included in the dataset of the study.
Regional Autonomy	Group controls Sub-National Territory under senior partnership	
Powerless	No access to executive power thus, belongs to dominant groups and monopolistic group	
Discriminated	Actively politically and socially excluded and belongs to Monopolistic power	

In this study we have ranked three major categories of status i.e. Monopoly as 0 because in such setup only one group regulates the power and political rights. The status dominant is ranked as 1 because it allows very little access to power and political rights. While the status senior partnership is ranked as 2 because it shares the executive control as well as gives political rights to the Minorites on equal basis and on the basis of junior partnership.

Individuals Trust on Individuals

Individual trust on Individuals is the first variable of Trust capital which include seven variables.

1. Most People can be trusted
2. Trust in Family
3. Trust on neighbour
4. Trust the people you know personally
5. Trust the people from other religion
6. Trust the people from other nationality
7. Trust the people for the first time

The data has been collected from the data base of world value survey. Several studies have used these variables to represent particular trust in society.

Individuals Confidence on Established Networks

Individuals' confidence on established network is the second variable pf trust capital. It includes the following variables.

1. Confidence in religious organisations
2. Confidence in Armed forces
3. Confidence in Press
4. Confidence in Television
5. Confidence on labour union
6. Confidence on Police
7. Confidence on Justice System
8. Confidence on Government
9. Confidence in political parties
10. Confidence in Parliament
11. Confidence in civil Services
12. Confidence in Universities
13. Confidence in major Companies
14. Confidence in Election
15. Confidence In Banks
16. Confidence In Environmental Protection movements

The data has been collected from the database of world value survey. Esser (2007) stated that individual's confidence in established networks ensures the reliability of state institutions, build sense of security, and trust among individuals.

Obligational Variables

Obligational variables are defined as the obligational capital index. Esser (2007) has defined obligational capital as the additional motivation of individual to provide benefits to other without gaining the reward. It represents the volunteer action of the actors. It includes four following variables.

1. Active membership in women groups
2. Active Membership in charitable organisation
3. Confidence in Charitable organisation
4. Confidence in women movement

The data has been collected from the world value survey. The Active membership will represent that how much individuals are ready to provide benefits to others voluntarily. And confidence in such organisation represents the trust on volunteer organisations.

Variables for System Capital Index

System control Variables

Governance indicators are the six set of variables represents the system control in the country. These variables include:

1. Control of corruption
2. Government Effectiveness
3. Voice and Accountability
4. Political stability and absence of violence
5. Rule of law
6. Regulatory Control

The data has been collected from the database of world bank. All governance indicators represent that how efficiently and effectively government is controlling the states affairs ensures institutional quality, political stability and implement rule of law in the country.

System Trust Variables

System trust is developed by several macro level factors such as democratic set up, transparency, fair justice system in the country, economic equality, and ethnic diversity. To develop system trust index, in this study following variables will be incorporated.

1. Democracy index
2. Corruption perception index
3. Crime rate
4. Economic inequality
5. Ethnic diversity

Democracy Score

The data on democracy is available in the database of our world in data. Democracy score lies between 0 to 3. The score '0' represents closed autocracy which means citizens have no right to select the representative through multiparty election. The score '1' represents Electoral autocracy which means citizens have right to choose legislative body but they have no freedom of association and expression due to which citizens have no free and fair elections. The score '2' represents electoral democracies which means that citizens have right to choose legislative body via free, fair and multiparty elections. The score '3' represents liberal democracies which means citizens have further individual and minority rights provided by states and law.

Transparency Index

Esser (2007) defined transparency as the maximum accountability of government and access to information about the government's acts. The more the transparency in the country the less the corruption perception index (CPI) of the country. Thus, we have included Corruption perception index as the proxy of transparency. The score lies between 0 to 10. 0 means highly corrupt and 10 means no corruption in the country. The data is available from the database of transparency international.

Crime rate

Uslaner and Badescue (2004b) stated that unfair courts bring down the trust level in society. Crime rate determines the quality of justice system. In this study Intentional Homicide rate is used as the proxy of crime rate because it is the most reliable data set. The data set is available in the data base of World Bank. The score 0-1 represents very low homicide rate, 1-5 represents low homicide rate, 5-10 represents moderate homicide rate, 10-25 represents high homicide rate, and score greater than 25 represents very high homicide rate.

Economic Inequality

Castigilion, Deth, and Wolleb (2007) has argued that economic inequality also plays a key role in determining aggregate trust level. In this study we have used Plama Ratio instead of famous Gini coefficient for economic inequality due to insufficient data. The palma ratio = 1 means that richest 10% have the same income as the poorest 40%. A higher palma ratio i.e. greater than 1 means the top 10% earns much more than 40% of the poorest. The palma ration less than 1 means that poorest 40% earns approximately equals to the 10% of the richest. The data is available in the database of world development indicator of world Bank.

Ethnic Diversity

Castigilion, Deth, and Wolleb (2007) discussed that ethnically and culturally diverse countries has low level of trust because of unavailability of opportunities. Mostly countries in the world have heterogenous population. The dataset on ethnic diversity is available in the database of Ethnic Power Relations. The score lies between 0.00 to 0.20 means homogenous population. The score lies between 0.20 – 0.50 means moderate diverse country. The score lies between 0.50 – 0.90 means highly diverse country. And the score lies between 0.90-0.10 means extremely heterogenous population.

System Morality Variables

Esser (2007), putnam (1993), and coleman (1990) described that lack of moral values and shared norms in the society trigger political, ethnic and religious conflict. Thus, in this study we have include all three conflict variables.

Political Conflict

Political conflict is measured by Political terror score. The score lies between 1 to 5. The score '1' represents No or little political violations. The score '2' represents few constraints on political rights. The score '3' represents political imprisonments, torture/beating, and murders are exceptional. The score '4' represents massive political imprisonments, and political murders are common. The score '5' represents the terror on whole population and no limits on states violence.

Ethnic Conflict

Ethnic conflict is defined as the intracultural tensions within a geographic location. Esser (2007) stated that in multi-ethnic countries, ethnic tensions and conflicts determine the security and availability of opportunity for ethnic groups. The ethnic conflict score lies between 0 to 4. The ethnic score '0' means no ethnic conflict, higher institutional control over the ethnic groups, and availability of equal socio-economic opportunities for all ethnic groups in the country. The ethnic score '1' means low level of friction among ethnic groups such as riots, protests but not organized violence. The ethnic score '2' means political or territorial non-violent conflict among groups usually called frozen conflict. The ethnic score '3' means violent clashes, but not a civil war and organized armed conflict. The ethnic score '4' means ethno-national armed conflict. The score has been devised after the analysis of institutional quality, Religion and state relationship, political terror, excess to opportunities, and geographical tensions.

Religious Conflict

Esser (2007) stated that religious conflicts have direct associations with system morality. Religion and State dataset provides wide range of religious conflicts. The data set include two main variables 'official religion' and 'official support'. In this study, we have selected second variable 'official support' which measures formal relationship between state and religion. The score lies between 0 to 13. For simplicity, the scores have been re-ranked from 0 to 3. The score '0', '12' and '13' represents hostility of states towards other religions which tends to create higher religious conflicts, thus these scores are re-ranked as '3' the higher religious. The scores '1', '2', '8', and '9' represents the states with single official

religion or one most favorite religion; these scores are re-ranked as '2' which represents moderate conflict. The scores '3', '6', '7', '10', and '11' measures supportive states towards other religion including one official or favourite religion; these scores are re-ranked as '1' which represents lower conflict. The scores '4' and '5' represents neutral states or supportive states for all religion, these scores are re-ranked as '0' which means no religious conflict.

The following tables shows the list of variables used to construct the social capital index.

<table>
<tr><td rowspan="4">Relational Capital Index</td><td rowspan="3">Positional Capital Index</td><td rowspan="2">Strong Strategic Position</td><td>Civic Membership</td><td>1. Active Membership in Consumer Organisation
2. Active membership in art and Music
3. Active membership in religious organisations
4. Active membership in Environmental Organisation
5. Active membership in Labour Union
6. Active Membership in political organisations
7. Active membership in Professional Organisations
8. Active Membership in sports or recreation
9. Active membership in self-help group</td></tr>
<tr><td colspan="2">Number of seats in legislative body and cabinet ministers</td></tr>
<tr><td colspan="3">Weak Strategic Position
Ethnic strategic Position</td></tr>
<tr><td rowspan="2">Trust Capital Index</td><td>Individual's Trust on Individuals</td><td colspan="2">1. Most People can be trusted
2. Trust in Family
3. Trust on neighbour
4. Trust the people you know personally
5. Trust the people from other religion
6. Trust the people from other nationality
7. Trust the people you meet first time</td></tr>
<tr><td>Individual's Confidence on Established Networks</td><td colspan="2">1. Confidence in religious organisations
2. Confidence in Armed forces
3. Confidence in Press
4. Confidence in Television
5. Confidence on labour union
6. Confidence on Police
7. Confidence on Justice System
8. Confidence on Government
9. Confidence in political parties
10. Confidence in Parliament
11. Confidence in civil Services
12. Confidence in Universities</td></tr>
</table>

			13. Confidence in major Companies 14. Confidence in Election 15. Confidence In Banks 16. Confidence In Environmental Protection movements
	Obligational Capital Index	Active Membership in Women Organisation Active membership in charitable organisations Confidence in women movements Confidence in charitable organisations	

System Capital Index	System Control	Governance Indicators	1. Control of corruption 2. Political Stability 3. Government Effectiveness 4. Voice and Accountability 5. Rule of Law 6. Regulatory Control
	System Trust (System Trust Variables)	1. Democracy Score 2. Crime Rate 3. Transparency Index 4. Economic Inequality 5. Ethnic Diversity	
	System Morality	1. Political conflict 2. Ethnic Conflict 3. Religious Conflict	

4.2 Research Methodology

Integrated social capital index will be created by using PCA and Equal-Weighted average method. Peluso, et al (2024) has used PCA to construct social capital index by using four indicators in USA States. While Putnam (2000) and Rupa-Singha et al. (2006) have used equal weighted average to construct social capital index. In this study we will use Min-Max standardization method before constructing the Index via PCA method and equal-weighted average method. Min-Max Normalization technique rescales the variable between 0 to 1. Grootaert et al. (2004) has used min-max approach in his book "Handbook on constructing Composite Indicators" for transparency and interpretability across countries and years.

Normalization Min-Max Approach

$$X' = \frac{X - X_{min}}{X_{max} + X_{min}}$$

PCA Method Equation

$$PC_i = \alpha_{ij} \sum_{k=1}^{n} X_k$$

PC_i = Linear Combination, Aggregated variables
α_{ij} = Loading (weight) of variable X_k for component i
X_k = Standardized variables (mean = 0, SD = 1)

Equal-Weighted Method Equation

$$\text{Index} = \frac{1}{n} \sum_{j=1}^{n} X_j$$

4.3 Relational Capital Index

Relational social capital index will be constructed by the positional capital index, trust capital index and obligatory capital index by assigning equal weight method and PCA method followed by min-max normalization strategy.

Relational Capital Index by PCA Method

$$RCI_{ij} = \tau_1 PCI_{ij} + \tau_2 TCI_{ij} + \tau_3 OCI_{ij}$$

Relational Capital Index by Equal-Weighted Average Method

$$RCI\_Avg_{ij} = \frac{1}{3}\,(\,PCI_{ij} + TCI_{ij} + OCI_{ij})$$

Where;

RCI = Relational Capital Index by PCA Method

τ = Loading Factor for PCI, TCI And OCI

ij = Panel Data

RCI_Avg = Relational Capital Index by Equal-Weighted Average Method

4.3.1 Positional Capital Index

Positional capital index will be constructed on three indicators "strong strategic positions", "weak strategic positions" and "ethnic strategic position" in a country. While Strong strategic position will be constructed by nine variables of civic membership in groups and organisations and number of seats of legislative body and cabinet minister available per 1000 people.

PCA equation for Positional Capital Index

$$PCI_{ij} = \alpha_{ij} SSP_{ij} + \alpha_{ij} WSP_{ij} + \alpha_{ij} ESP_{ij}$$

$$SSP_{ij} = \beta_1\, AM1_{ij} + \beta_2 AM2_{ij} + \beta_3 AM3_{ij} + \beta_3 AM4_{ij} + \beta_4 AM5_{ij} + \beta_5 AM5_{ij} + \beta_6 AM6_{ij} + \beta_7 AM7_{ij} + \beta_8 AM8_{ij} + \beta_9 AM9_{ij} + \beta_{10} NS_{ij}$$

Equal Weighted Average for Positional capital Index

$$PCI\_Avg_{ij} = \frac{1}{3}\,(\frac{1}{10}\, SSP_{ij} + WSP_{ij} + ESP_{ij}$$

$$SSP_{ij} = \frac{1}{10}\,(AM1_{ij} + AM2_{ij} + AM3_{ij} + AM4_{ij} + AM5_{ij} + AM5_{ij} + AM6_{ij} + AM7_{ij} + AM8_{ij} + AM9_{ij} + NS_{ij})$$

Where;

PCI = Positional Capital Index for PCA

ij = Panel Data

α = Loading for SSP, WSP and ESP variables

β = Loadings for AM1 to AM9 and NS variables

PCI_Avg = Positional Capital Index calculated with equal weighted method average

SSP = Strong Strategic Position

AM1 = Active Membership in Consumer Organisation

AM2 = Active membership in art and Music

AM3 = Active membership in religious organisations

AM4 = Active membership in Environmental Organisation

AM5 = Active membership in Labour Union

AM6 = Active Membership in political organisations

AM7 = Active membership in Professional Organisations

AM8 = Active Membership in sports or recreation
AM9 = Active membership in self-help group
NS = Number of seats in legislative body and cabinet ministers

4.3.2 Trust capital Index

Trust capital Index will be constructed by two variables Individual's Trust on Individuals and Individual's Confidence on Established Network.

PCA method for Trust Capital Index

$$TCI_{ij} = \gamma_1 ITI_{ij} + \gamma_2 IC_{ij}$$

Individual's Trust on Individuals (ITI) by PCA

$$ITI_{ij} = \delta_1 T1_{ij} + \delta_2 T2_{ij} + \delta_3 T3_{ij} + \delta_4 T4_{ij} + \delta_4 T5_{ij} + \delta_5 T6_{ij} + \delta_5 T7_{ij}$$

Individuals Confidence on Established Networks (IC) by PCA

$$IC_{ij} = \theta_1 C1_{ij} + \theta_2 C2_{ij} + \theta_3 C3_{ij} + \theta_{ij} C4_{ij} + \theta_5 C5_{ij} + \theta_6 C6_{ij} + \theta_7 C7_{ij} + \theta_8 C8_{ij} + \theta_9 C9_{ij} + \theta_{10} C10_{ij} + \theta_{11} C11_{ij} + \theta_{12} C12_{ij} + \theta_{13} C13_{ij} + \theta_{14} C14_{ij} + \theta_{15} C15_{ij} + \theta_{16} C16_{ij}$$

Equal-Weighted Average method for Trust Capital Index

$$TCI\_Avg_{ij} = \frac{1}{2}\left(\frac{1}{7} ITI\_Avg_{ij} + \frac{1}{16} IC\_Avg_{ij}\right)$$

Individual's Trust on Individuals (ITI) by equal-Weighted Average Method

$$ITI\_Avg_{ij} = \frac{1}{7}(T1_{ij} + T2_{ij} + T3_{ij} + T4_{ij} + T5_{ij} + T6_{ij} + T7_{ij})$$

Individuals Confidence on Established Networks (IC) by PCA

$$IC_{ij} = \theta_1 C1_{ij} + \theta_2 C2_{ij} + \theta_3 C3_{ij} + \theta_{ij} C4_{ij} + \theta_5 C5_{ij} + \theta_6 C6_{ij} + \theta_7 C7_{ij} + \theta_8 C8_{ij} + \theta_9 C9_{ij} + \theta_{10} C10_{ij} + \theta_{11} C11_{ij} + \theta_{12} C12_{ij} + \theta_{13} C13_{ij} + \theta_{14} C14_{ij} + \theta_{15} C15_{ij} + \theta_{16} C16_{ij}$$

Where;
TCI = Trust Capital Index by PCA method
ITI = Individuals Trust on Individuals by PCA method
IC = Individual's Confidence on Established Network by PCA method
ij = Panel Data
γ = Loading factor of variables ITI and IC
δ = Loading Factors for variables T1 to T7
θ = Loading Factors for Variables C1 to C16
T1 = Most People can be trusted
T2 = Trust in Family
T3 = Trust on neighbour
T4 = Trust the people you know personally
T5 = Trust the people from other religion
T6 = Trust the people from other nationality
T7 = Trust the people you meet first time
C1 = Confidence in religious organisations
C2 = Confidence in Armed forces
C3 = Confidence in Press
C4 = Confidence in Television
C5 = Confidence on labour union

C6 = Confidence on Police
C7 = Confidence on Justice System
C8 = Confidence on Government
C9 = Confidence in political parties
C10 = Confidence in Parliament
C11 = Confidence in civil Services
C12 = Confidence in Universities
C13 = Confidence in major Companies
C14 = Confidence in Election
C15 = Confidence in Banks
C16 = Confidence in Environmental Protection movements

4.3.3 Obligational Capital Index

Obligational Capital Index will be developed by 4 variables Active Membership in Women Groups (AMWG), Active Membership in Charitable Organisations (AMCO), Confidence in Women's Movements (CWM) and Confidence in Charitable and Humanitarian Organisations (CCHO)

Obligational Capital Index by PCA Method

$$OCI_{ij} = \rho_1 AMWG_{ij} + \rho_2 AMCO_{ij} + \rho_3 CWM_{ij} + \rho_4 AMCO_{ij}$$

Obligational Capital Index by Equal-Weighted Average Method

$$OCI\_Avg_{ij} = \frac{1}{4}\left(AMWG_{ij} + AMCO_{ij} + CWM_{ij} + AMCO_{ij}\right)$$

Where;
OCI = Obligational Capital Index by PCA
ρ = Loading Factor for the Variables AMWG, AMCO, CWM, and AMCO
ij = Panel Data
OCI_avg = Obligational capital index by Equal weighted Average Method

4.4 System Capital Index

System Capital Index will be constructed by System Control Index (SysC1), System Trust Index (STI), and System Morality Index (SMI).

System Capital Index by PCA Method

$$SCI_{it} = \varphi_1 SysCI_{it} + \varphi_2 STI_{it} + \varphi_3 SMI_{it}$$

System Capital Index by Equal-Weighted Average Method

$$SCI\_Avg_{it} = \frac{1}{3}\left(SysCI_{it} + STI_{it} + SMI_{it}\right)$$

Where;
SCI = System Capital Index by PCA method
φ = Loading factor for Variables SysCI, STI and SMI
it = Panel Data
SCI_Avg = System Capital Index by Equal Weighted Average Methods

4.4.1 System Control Index

System Control Index will be developed by the six indicators of World Governance Indicators I.e. Control of Corruption (CC), Political Stability and Absence of Violence (PSAV), Voice and Accountability (VA), Rule

of Law (RL), Regulatory Control (RC) and Government Effectiveness (GE).

System Control Index by PCA Method

$$SysCI_{it} = \omega_1 CC_{it} + \omega_2 PSAV_{it} + \omega_3 VA_{it} + \omega_4 RL_{it} + \omega_5 RC_{it} + \omega_6 GE_{it}$$

System Control Index by Equal Weighted Average Method

$$SysCI\_Avg_{it} = \frac{1}{6}(CC_{it} + PSAV_{it} + VA_{it} + RL_{it} + RC_{it} + GE_{it})$$

Where;
SysCI = System Control Index by PCA Method
ω = Loading Factor for Variables, CC, PSAV, VA, RL, RC, GE
it = Panel Data
SysCI_Avg = System Capital Index by Equal Weighted Average Method

4.4.2 System Trust Index

System Trust Index will be developed by Democracy score (DS), Crime Rate (CR), Corruption Perception Index (CPI), Ethnic Diversity Index (EDI), and Palma Ration (PR). This Index will also be developed by both PCA and equal-weighted average Method.

System Trust Index by PCA Method

$$STI_{it} = \lambda_1 DS_{it} + \lambda_2 CR_{it} + \lambda_3 CPI_{it} + \lambda_4 EDI_{it} + \lambda_5 PR_{it}$$

System Trust Index by Equal Weighted Average Method

$$STI\_Avg_{it} = \frac{1}{5}(DS_{it} + CR_{it} + CPI_{it} + EDI_{it} + PR_{it})$$

Where;
STI = System Trust Index by PCA Method
λ = Loading Factor for Variables, DS, CPI, CR, EDI, and PR
it = Panel Data
STI_Avg = System Trust Index by Equal Weighted Average Method

4.4.3 System Morality index

System Morality Index will be developed by the political, religious and ethnic conflict indicators i.e. Political terror Score (PTS), Religion and State (RAS) and Ethnic Conflict (EC). The index will be developed by both PCA Method and equal Weighted Average Method.

System Morality Index by PCA Method

$$SMI_{it} = \psi_1 PTS_{it} + \psi_2 RAS_{it} + \psi_3 EC_{it}$$

System Morality Index by Equal-Weighted Average Method

$$SMI\_Avg_{it} = \frac{1}{3}(PTS_{it} + RAS_{it} + EC_{it})$$

Where;
SMI = System Morality Index by PCA Method
ψ = Loading Factor for Variables, PTS, RAS, EC
it = Panel Data
SMI_Avg = System Morality Index by Equal Weighted Average Method

4.5 Integrated Social Capital Index

Integrated social capital Index (ISCI) has two dimensions that is Relational Social Capital Index and System Capital Index. Now we will develop Integrated Social Capital Index by using PCA method and Equal-Weigthed Average Method.

Integrated Social Capital Index by PCA Method

$$ISCI_{it} = \nu_1 RCI_{it} + \nu_2 SCI_{it}$$

Integrated Social Capital Index by Equal Weighted Average Method

$$ISCI_{it} = \frac{1}{2}\,(RCI_{it} + SCI_{it})$$

Where;
ISCI = Integrated Social Capital Index by PCA Method
ν = Loading Factor for Variables, RCI and SCI
it = Panel Data
ISCI_Avg = Integrated Social Capital Index by Equal Weighted Average Method

4.6 Ranking of the Countries

After constructing Integrated social Capital Index, we will develop its ranking by taking average of complete time span of 27 years to develop a stable and reliable ranking for the countries.

5. Results and Discussion

In this section we will discuss the difference between the results of developed Integrated social capital index, relational Capital Index and system Capital Index by PCA method and equal weighted Average method by comparing the ranks of the countries.

5.1 Integrated Social Capital Index

Ranking and Score by Average Method		
country	SCI_Ascore	rank_ASCI
Chile	0.298153	1
Colombia	0.292683	2
Australia	0.371727	3
India	0.238103	4
Canada	0.310115	5
Germany	0.254698	6
Norway	0.190364	7
Netherlands	0.200512	8
Singapore	0.1632	9
Finland	0.261983	10
Denmark	0.277023	11
Mexico	0.209038	12
Cyprus	0.282503	13
Ireland	0.235587	14
Brazil	0.319685	15
Uganda	0.110009	16

Ranking and Score by PCA Method		
country	sci_Score	rank_pca
Uruguay	1.99679	1
Australia	1.97684	2
United States	1.9419	3
Sweden	1.91262	4
Canada	1.71967	5
United Kingdom	1.71303	6
Netherlands	1.66794	7
Chile	1.66309	8
Finland	1.62753	9
Ireland	1.56804	10
Germany	1.55945	11
Switzerland	1.45955	12
Norway	1.3969	13
Japan	1.31751	14
India	1.3007	15
Iceland	1.22562	16

Sri Lanka	0.148015	17
Malaysia	0.213773	18
Luxembourg	0.216731	19
Pakistan	0.187813	20
Iceland	0.239003	21
Turkmenistan	0.112335	22
France	0.260747	23
Sudan	0.147982	24
Ukraine	0.107137	25
Belgium	0.335975	26
Estonia	0.26695	27
Philippines	0.178367	28
Thailand	0.139973	29
Austria	0.365243	30
Jordan	0.230408	31
Uruguay	0.100469	32
Japan	0.231119	33
China	0.292984	34
El Salvador	0.271146	35
Indonesia	0.237095	36
Slovenia	0.160718	37
Portugal	0.175292	38
Italy	0.232988	39
Peru	0.179875	40
Honduras	0.243364	41
Morocco	0.205442	42
Poland	0.177473	43
Ethiopia	0.266651	44
Latvia	0.225278	45
Venezuela	0	46
Slovakia	0.161183	47
Argentina	0.375268	48
Barbados	0.345424	49
Bahamas	0.355084	50
Jamika	0.231169	51
Iran	0.23623	52
Czech Republic	0.279063	53
Egypt	0.271361	54
Russia	0.167721	55
Romania	0.171336	56
Hungary	0.239976	57
Lithuania	0.217639	58
Turkey	0.12447	59

Denmark	1.21463	17
Mexico	1.11679	18
Austria	1.109	19
France	1.09792	20
Thailand	1.07887	21
Colombia	0.930032	22
Puerto Rico	0.911934	23
Cyprus	0.879695	24
Slovenia	0.869025	25
Singapore	0.866836	26
Brazil	0.834569	27
Malaysia	0.834508	28
Estonia	0.808412	29
Luxembourg	0.764292	30
Portugal	0.75244	31
Poland	0.740026	32
Hong Kong	0.738003	33
Spain	0.716585	34
Jordan	0.708734	35
Philippines	0.702663	36
Indonesia	0.687452	37
Argentina	0.645228	38
Hungary	0.634071	39
Czech Republic	0.619144	40
Malta	0.550146	41
Costa Rica	0.52477	42
Mongolia	0.492204	43
Morocco	0.48959	44
Italy	0.485943	45
Greece	0.485637	46
Botswana	0.480084	47
Barbados	0.455447	48
Peru	0.441006	49
Slovakia	0.384419	50
Lithuania	0.383424	51
Belgium	0.381335	52
Ecuador	0.38024	53
Macao	0.297122	54
Kenya	0.294987	55
Mauritius	0.242503	56
Romania	0.215874	57
Latvia	0.203439	58
Bahamas	0.194313	59

Myanmar	0.204026	60
Georgia	0.257549	61
Qatar	0.174453	62
Nigeria	0.19414	63
Ecuador	0.273054	64
Guatemala	0.252772	65
Oman	0.189603	66
Zambia	0	67
Botswana	0.319938	68
Mauritius	0.209466	69
Greece	0.254599	70
Togo	0.138474	71
Costa Rica	0.286691	72
Bulgaria	0.31733	73
Croatia	0.283327	74
Kenya	0.229688	75
Mongolia	0.20693	76
United States	0.10318	77
Zimbabwe	0	78
Kyrgyzstan	0.227075	79
Namibia	0.203746	80
Armenia	0.372242	81
Malta	0.210652	82
Uzbekistan	0.088618	83
Saudi Arabia	0.166144	84
Kazakhstan	0.229844	85
United Kingdom	0.106392	86
South Africa	0.153025	87
Syria	0.143725	88
Puerto Rico	0.17491	89
Maldives	0.213589	90
North Macedonia	0.192625	91
Spain	0.148307	92
Belize	0.333462	93
Kuwait	0.227129	94
Panama	0.184011	95
Bangladesh	0.347788	96
Lebanon	0.223266	97
Nepal	0.202369	98
Dominican Republic	0.274963	99
Switzerland	0.144335	100

Panama	0.161855	60
Bulgaria	0.157547	61
Serbia	0.148466	62
China	0.136367	63
Namibia	0.129399	64
Tunisia	0.124992	65
Cape Verde	0.108028	66
North Macedonia	0.094586	67
Croatia	0.092851	68
Georgia	0.090371	69
Vietnam	0.088198	70
Jamika	0.086831	71
Trinidad and Tobago	0.07905	72
Egypt	0.070142	73
Kiribati	0.068637	74
Guatemala	0.064969	75
Bolivia	0.060575	76
Armenia	0.049143	77
Zimbabwe	0.03385	78
Uzbekistan	0.015433	79
Montenegro	0.008724	80
New Zealand	0	83
Saint Lucia	0	83
Sao tome and Principe	0	83
South Korea	0	83
SVG	0	83
Vanuatu	-0.00802	86
Turkey	-0.0132	87
El Salvador	-0.01868	88
Bhutan	-0.02099	89
Kazakhstan	-0.0244	90
Maldives	-0.03222	91
Bangladesh	-0.03261	92
Oman	-0.03621	93
Nicaragua	-0.03942	94
Venezuela	-0.0416	95
Solomon Islands	-0.04173	96
Zambia	-0.05158	97
Tajikistan	-0.05633	98
Brunei	-0.0644	99
Grenada	-0.06526	100

Belarus	0.341551	101
Trinidad and Tobago	0.136477	102
Sweden	0.146951	103
Brunei	0.3181	104
Rwanda	0.167427	105
Bhutan	0.331976	106
Vanuatu	0.084747	107
Nicaragua	0.194992	108
Bosnia and Herzegovina	0.327973	109
Bahrain	0.352553	110
Tunisia	0.127752	111
Algeria	0.38196	112
Serbia	0.163872	113
Bolivia	0.329136	114
Moldova	0.207012	115
Albania	0.383907	116
Tajikistan	0.142637	117
Ghana	0.254628	118
Hong Kong	0.242386	119
Suriname	0.147398	120
Paraguay	0.181874	121
Senegal	0.165228	122
Yemen	0	123
Vietnam	0	124
Azerbaijan	0.361116	125
Guyana	0.249308	126
Malawi	0.214826	127
Libya	0.218757	128
Grenada	0.254171	129
Niger	0.194939	130
Cape Verde	0.300284	131
Mali	0.211762	132
Papua New Guinea	0.181918	133
Lesotho	0.222981	134
Mozambique	0.204886	135
Burkina Faso	0.316419	136
Cameroon	0.311683	137
Haiti	0.24583	138
Gambia	0.25786	139
DR Congo	0.273647	140

Albania	-0.06744	101
South Africa	-0.07683	102
Ukraine	-0.10281	103
Ghana	-0.12293	104
Lesotho	-0.1347	105
Kyrgyzstan	-0.14456	106
Samoa	-0.17064	107
Qatar	-0.20042	108
Dominican Republic	-0.20928	109
Kosovo	-0.2094	110
FS Micronesia	-0.24395	111
Senegal	-0.24961	112
Suriname	-0.28091	113
Nigeria	-0.28453	114
Tonga	-0.2875	115
Honduras	-0.29376	116
Guyana	-0.29433	117
Ethiopia	-0.30703	118
Azerbaijan	-0.32204	119
Belize	-0.32641	120
Fiji	-0.3388	121
Benin	-0.3453	122
Moldova	-0.35934	123
Kuwait	-0.40549	124
Paraguay	-0.43177	125
Niger	-0.4419	126
Lebanon	-0.44352	127
Papua New Guinea	-0.46208	128
Bosnia and Herzegovina	-0.49529	129
Iran	-0.50928	130
Sierra Leone	-0.53518	131
Bahrain	-0.57924	132
Malawi	-0.58915	133
Gabon	-0.5906	134
Belarus	-0.59779	135
Burkina Faso	-0.60647	136
Uganda	-0.65365	137
Ivory Coast	-0.67198	138
Mozambique	-0.67794	139
Gambia	-0.68022	140

Central African Republic	0.300097	141
Madagascar	0.214994	142
Macao	0.21597	143
Benin	0.332555	144
Samoa	0.166825	145
Djibouti	0.275637	146
Burundi	0.31593	147
Mauritania	0.210613	148
Guinea	0.251572	149
Cambodia	0.312773	150
Chad	0.299874	151
Eswatini	0.266684	152
Sierra Leone	0.163542	153
Montenegro	0.2064	154
Gabon	0.259143	155
Laos	0.226527	156
Tonga	0.137205	157
Somalia	0.15303	158
Angola	0.381388	159
Fiji	0.266065	160
Eritrea	0.268009	161
Liberia	0.22044	162
Equatorial Guinea	0.27034	163
Comoros	0.288054	164
R Congo	0.172483	165
Solomon Islands	0.156911	166
Kosovo	0.227465	167
Guinea-Bissau	0.251489	168
Kiribati	0.228471	169
FS Micronesia	0.260141	170
Tanzania	0.140286	171
South Sudan	0.148521	172
Ivory Coast	0.232313	173
New Zealand	0.196297	176
Saint Lucia	0.16692	176
Sao tome and Principe	0.166717	176
South Korea	0.151861	176
SVG	0.147049	176

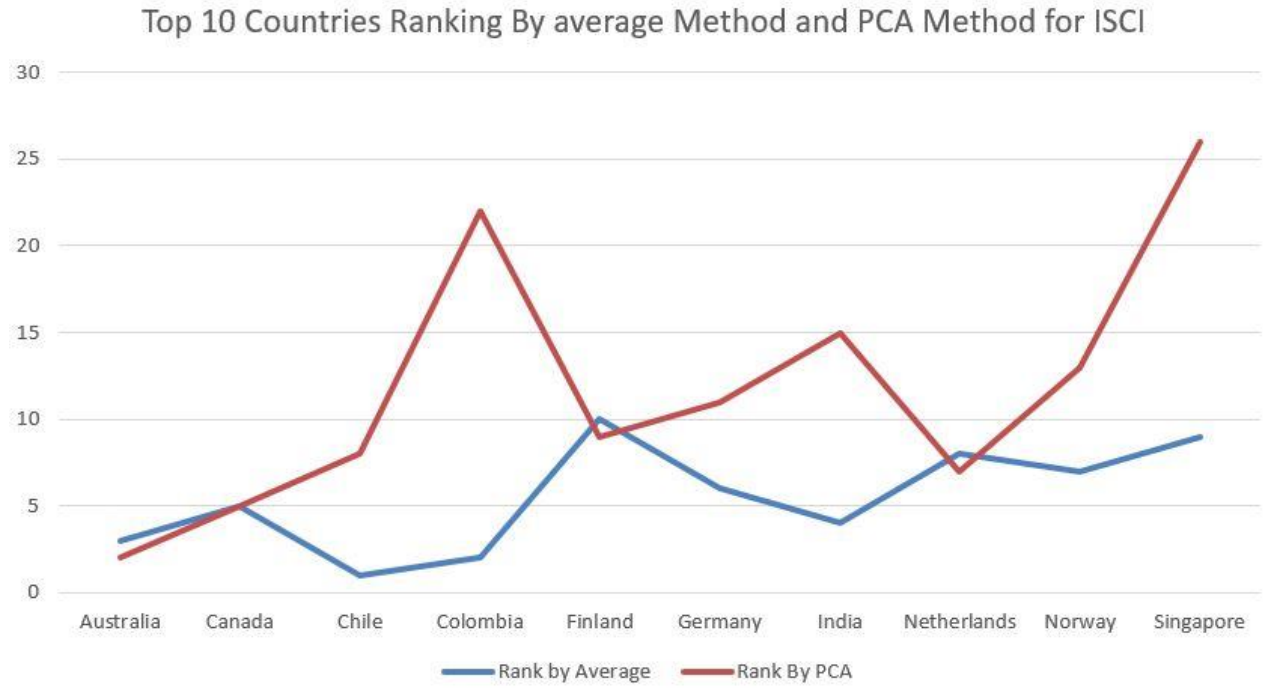
Tanzania	-0.70365	141
Mali	-0.71097	142
Mauritania	-0.712	143
Comoros	-0.71859	144
Russia	-0.726	145
Rwanda	-0.74072	146
Djibouti	-0.74172	147
Eswatini	-0.76406	148
Togo	-0.78443	149
Madagascar	-0.79808	150
Liberia	-0.81221	151
Guinea-Bissau	-0.82364	152
Pakistan	-0.82501	153
Saudi Arabia	-0.841	154
Laos	-0.90623	155
Sri Lanka	-0.93889	156
Equatorial Guinea	-0.94583	157
Cambodia	-0.96859	158
Angola	-0.98638	159
R Congo	-1.00232	160
Guinea	-1.02024	161
Sudan	-1.02484	162
Algeria	-1.04073	163
South Sudan	-1.05886	164
Turkmenistan	-1.0716	165
Haiti	-1.09533	166
Nepal	-1.09707	167
Cameroon	-1.11852	168
Eritrea	-1.21378	169
Burundi	-1.26491	170
Libya	-1.28786	171
Chad	-1.33848	172
Myanmar	-1.36768	173
Central African Republic	-1.55327	174
Syria	-1.65191	175
Yemen	-1.80733	176
DR Congo	-1.87171	177
Somalia	-1.9354	178

The above table is representing the ranking of countries for integrated social capital index developed by PCA method and equal-weighted average method. PCA method the loadings (weight) for the variables are driven by the data set. While on theoretical basis we have given equal weight to all dimension od integrated social

capital index because Esser (2007) stated that all dimensions of social capital posses' equal importance. According to Equal-weighted average method the fist 10 countries which have strong social capital are Chile, Colombia, Australia, India, Canada, Germany, Norway, Netherlands, Singapore and Finland. While according to PCA driven rank for Social Capital Index for the countries are as given below.

Country	Rank by Average	Rank By PCA
Chile	1	8
Colombia	2	22
Australia	3	2
India	4	15
Canada	5	5
Germany	6	11
Norway	7	13
Netherlands	8	7
Singapore	9	26
Finland	10	9

The above table shows that few countries have slight variation in their ranking such Chile is ranked 1 by average method but ranked 8th by PCA method. Australia Ranked 3rd by average method but got 2nd rank by PCA method. India ranked as 4th highest n social capital but by PCA method it is ranked as 15th Country. Netherlands ranked 8th by average method, while ranked 7th by PCA method. Finland ranked 10th By Average method but ranked 9th by PCA method. Canada Holds its 5th position by PCA method as well as by average method. But other countries got huge gap in ranking such as Colombia ranked as 2nd by average method while 22nd by PCA method. Pakistan ranked 20th by average method but ranked 153rd by PCA method. United Kingdom ranked as 6th by PCA method while by average method she is ranked as 86th country. United States ranked as 77th country by average method but 3rd country by PCA method. Now we will represent above table via graph.



The above graph is representing that Canada, Finland, and Netherlands have similar ranking while Chile,

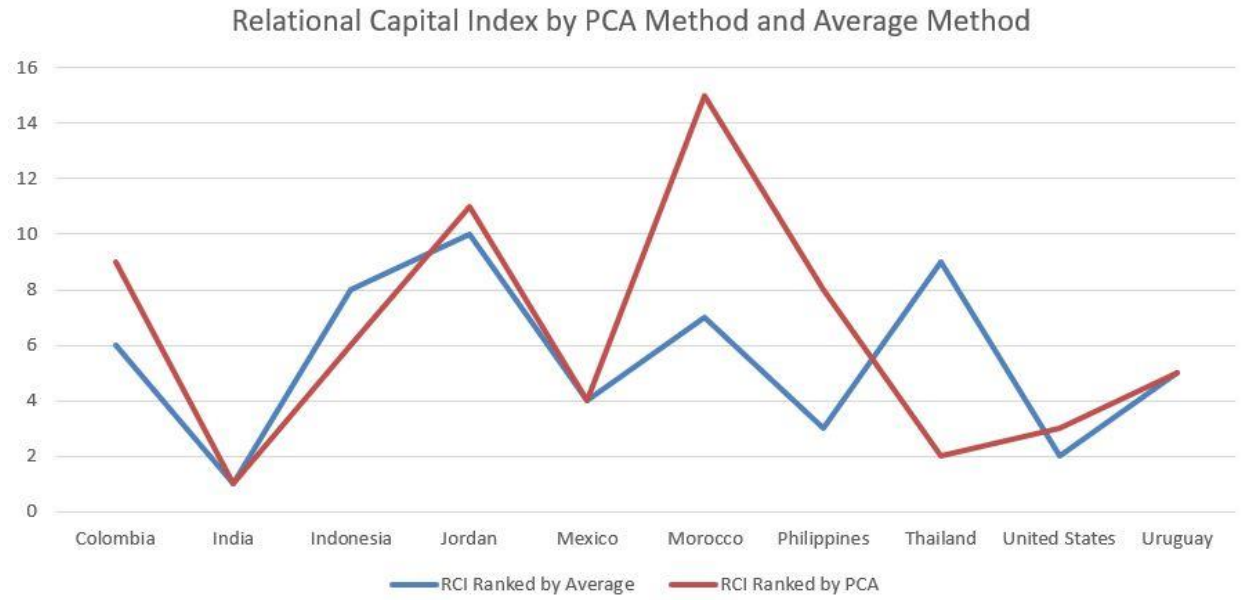
Colombia, India, and Singapore have much difference in rankings.

5.2 Relational Capital Index by Average Method and PCA Method

Relational capital Index is the first dimension of social capital which determines the level of social relation at individual's level. It is also developed by using PCA method and Equal-Weighted Average method. The following table is representing Top 10 countries highly ranked by equal weighted average method and their ranking according to PCA method.

Country	RCI Ranked by Average	RCI Ranked by PCA
India	1	1
United States	2	3
Philippines	3	8
Mexico	4	4
Uruguay	5	5
Colombia	6	9
Morocco	7	15
Indonesia	8	6
Thailand	9	2
Jordan	10	11

The above table represents that India Mexico, and Uruguay hold same rank by PCA method and average method i.e. 1, 4, and 5 respectively. United States holds 2nd rank by average method while 3rd rank by PCA method. Philippines holds 3rd rank by average method while 8th rank by PCA Method. Colombia holds 6th rank by average method, and 9th rank by PCA method. Indonesia holds 9th rank by average method and 6th rank by PCA method. Thailand has ranked 9th by average method and 2nd by PCA method. Jordan has ranked as 10th by average method and 11th by PCA methods. Most of the countries except Morocco and Thailand, all countries fall in top 10 ranking by PCA method as well as by average method. Now we will represent the above table by line graph.



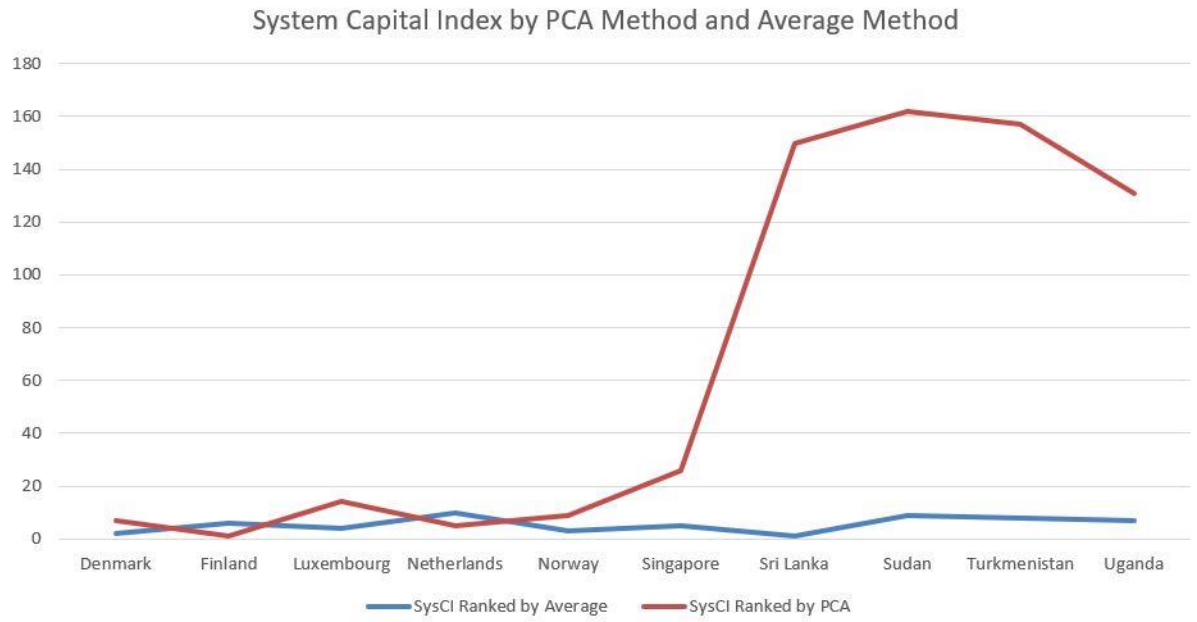
The above graph shows that most of the countries have the similar ranking with little difference while Morocco and Thailand have gaps in their ranking by PCA method and average method.

5.3 System Capital Index by Average Method and PCA Method

System capital is the second dimension of social capital which consist of further three dimensions i.e. system control, system trust and system morality. The following table shows the highest top 10 ranking of countries by average method their corresponding ranking by PCA method.

Country	SysCI Ranked by Average	SysCI Ranked by PCA
Sri Lanka	1	150
Denmark	2	7
Norway	3	9
Luxembourg	4	14
Singapore	5	26
Finland	6	1
Uganda	7	131
Turkmenistan	8	157
Sudan	9	162
Netherlands	10	5

The above table shows that Denmark Norway Finland and Netherlands are the countries which holds ranking in top 10 countries by both PCA method and Average methods. While Sri Lanka, Uganda, Turkmenistan and Sudan have high gap in the ranking by average method and PCA methods. The huge difference between the ranking by PCA and ranking by average method is that PCA gives more weight to the variables which shows greater difference between countries or PCA assign more weight to the variables which are dominating. While equal weighted average method assigns equal weight to all variables. We have followed the theoretical grounds that is to build strong and trustworthy relationship, all dimensions hold equal importance (Esser, 2007). Now we will represent the above table graphically.



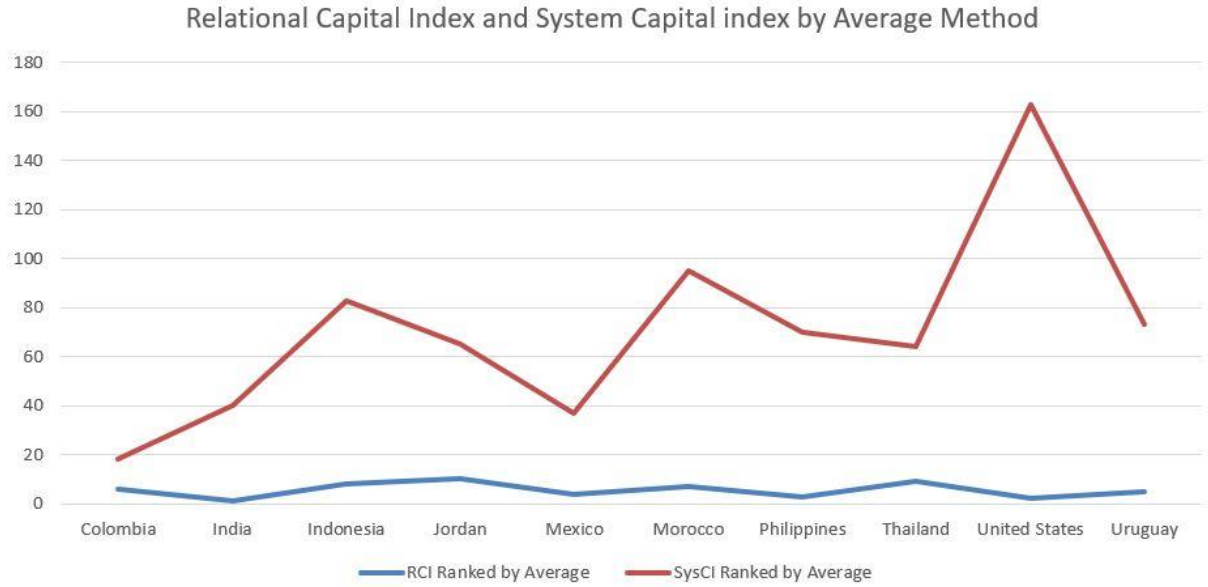
In the above graph blue line is representing rank by average method while red line is representing rank by PCA method. The graph is showing that five countries have ranking near to each other while other five countries have huge difference in PCA ranking and Average ranking.

5.4 Relational Capital Index and System Capital Index

Now we will represent the to 10 countries by Relational capital index developed by average method and their corresponding rank of system capital index developed by average method.

Country	RCI Ranked by Average	SysCI Ranked by Average
India	1	40
United States	2	163
Philippines	3	70
Mexico	4	37
Uruguay	5	73
Colombia	6	18
Morocco	7	95
Indonesia	8	83
Thailand	9	64
Jordan	10	65

The above table shows that countries with higher Relational Capital Index has lower system capital index. It implies that relationship, civic engagement and morality among individual's are higher than system control, trust and morality. Now we will represent the above table in graphs.



The above graph shows that the countries with higher relational capital index are lacking in providing such institutions which can build system trust. the red line shows the system capital index while blue line is representing the relational capital index.

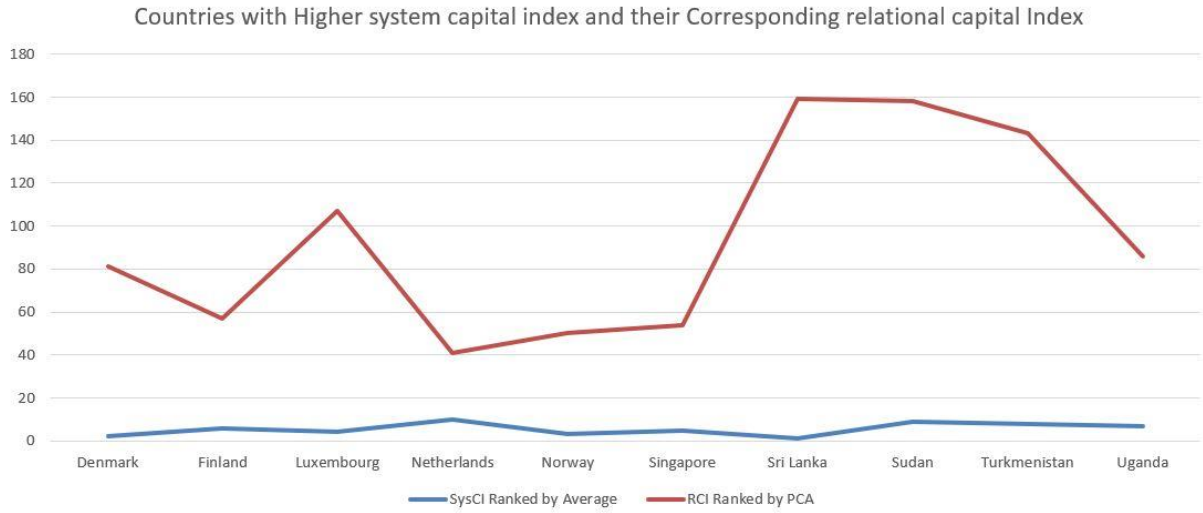
5.5 System Capital Index and Relational Capital Index

Now we will represent the to 10 countries by System capital index developed by average method and their corresponding rank of relational capital index developed by average method.

Country	SysCI Ranked by Average	RCI Ranked by PCA
Sri Lanka	1	159
Denmark	2	81
Norway	3	50

Luxembourg	4	107
Singapore	5	54
Finland	6	57
Uganda	7	86
Turkmenistan	8	143
Sudan	9	158
Netherlands	10	41

The above table shows the countries with higher ranks in system capital index have lower rank in Relational Capital index. Now we will represent this data in graph.



The graph shows that countries with higher system capital index have lower relational capital index. The red line shows the relational capital index, and blue represents the system capital index.

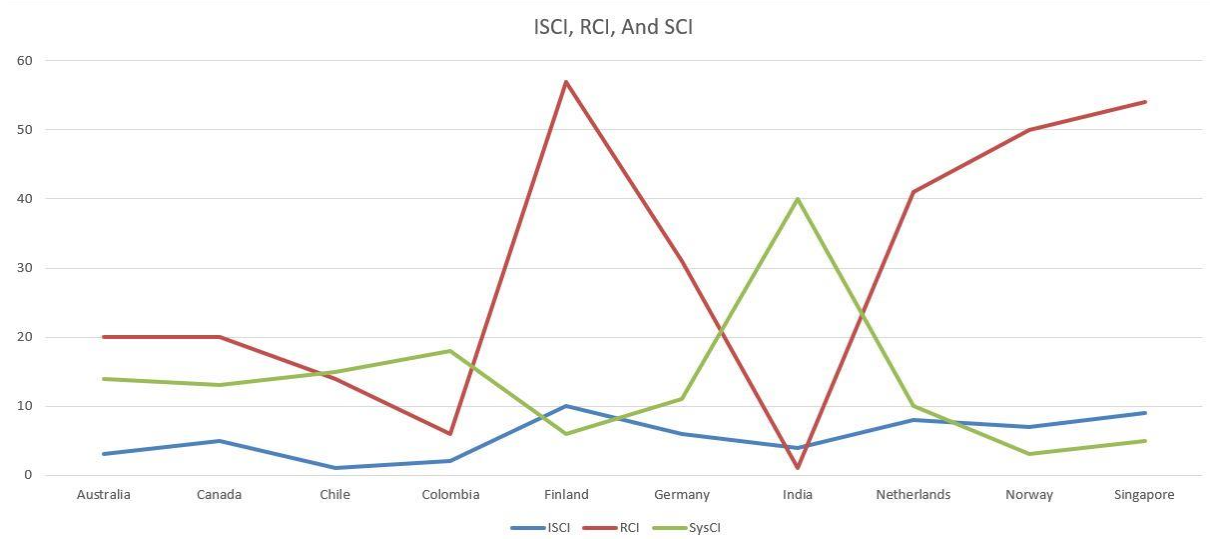
5.6 Integrated Social Capital Index, Relational Capital Index and System Capital Index

Now we will compare the ranks of Integrated social capital Index, relational Capital index, and system capital index developed by average method.

Countries	ISCI	RCI	SysCI
Chile	1	14	15
Colombia	2	6	18
Australia	3	20	14
India	4	1	40
Canada	5	20	13
Germany	6	31	11
Norway	7	50	3
Netherlands	8	41	10
Singapore	9	54	5
Finland	10	57	6

The table shows that countries with higher integrated social capital index are in lists of higher relational capital index and system capital index. Both together invest in the integrated social capital index. Chile is ranked as 1st as integrated social capital index, while 14 and 15 as relational capital index and system capital index.

Similarly in case of Colombia which is ranked as 2nd as integrated social capital index and 6th and 18th as relational capital index and system capital index. Now we will represent this table with graph.



The blue line in the graph representing ranking of countries by integrated social capital index, green line refers to the ranking countries by Relational Capital index, and red line refers to the ranking of countries by system capital index. Integrated social capital index is highly dependent on the ranking of relational capital index and system capital index. Countries who are able to build both system capital and relational capital has higher integrated social capital index.

6. Analysis and Policy Recommendations

Day by Day social capital is gaining popularity due to its crucial role in socio-economic development. Social capital significantly reduces transaction costs, generate opportunities, maintain flow of information within and among networks. Esser (2007) has laid comprehensive theoretical framework for social capital. He stated that social capital is a bi-dimensional phenomena i.e. relational capital and system capital. By focusing on relational capital, he tried to frame the social capital at micro level. While system capital targets the institutional components that develops social capital at macro level. System capital and relational capital both jointly interacts to shape social capital of the country.

Relational capital helps to determine nature of social relationships; how much people are willing to help one another within the network and among the network. Relational capital is further divided into three dimensions positional capital, trust capital and obligational capital. Positional capital captures the strength and capacity of networks and individuals to help in maintaining information's flow and availability of opportunities. Trust capital and obligational capital determines the degree and nature of strength and capacity of positional capital. Let suppose, a country has dense civic associational network, hierarchical network and ethical networks, but individual's and networks as a single entity lack in trust and obligation, weaken the role of positional capital. On the other hand, relational capital also determines the

System capital captures the institutional framework of the country that determines that how much state has strength and capacity to provide favourable and fair environment to sustain relational capital. System capital further divided into three categories i.e. system control, system trust, and system morality. System controls determine the institutional quality which represents the effectiveness and capacity of governance structure. While system trust and system morality determines the degree and nature of the quality of system control and explains that how institutions are perceived, legitimized and supported by norms and values.

Higher system capital postulates that system is effective enough to track and record positive activities of individuals and networks to ensure harmony and growth in socio-economic setup. On the other hand, higher

relational capital index postulates that individuals and network are efficient enough to support and secure opportunities for other individual's and networks. Higher social capital act as the glue of the society that stick people and government with one another to promote economic efficiency, social harmony, institutional stability, and human well-being.

Economically, higher social capital leads higher growth, improves labour market, encourages business community, reduce transaction cost. Strong social capital in the country means higher trust on individuals, established networks and system reduces transaction cost of monitoring, checking, or enforcing contracts and agreements. it implies that trust reduces paper work and lawyer fees which improve the decision making, and business operations. Moreover, it opens the financial, and non-financial opportunities for new businesses. As business grows in the country, economic activity increases, investment increases, human capital grows, labour market improves, goods market provide better and productive goods which ultimately improves economic growth as well as trade sector. On the part of government, higher trust ensures less economic inequality, provision of health and free education, transparency in policy making and implementation. Thus, higher social capital improves the whole micro and macro-economic cycle.

Socially, higher social capital leads the trust, cooperation, and morality validates positive human activities. Trust drives emotional satisfaction in individuals, societies and system that their actions will be endorsed and rewarded and no free rider will confiscate their rights. Emotional satisfaction regarding availability of equal opportunities and practical help, reduces economic frauds, crimes, and suicidal attempts. Moreover, people voluntarily participate in charitable works like free medical camping, free educational and awareness programs, supports local government. Thus, higher social capital leads emotional satisfaction, voluntary actions which ultimately improves social and ethical harmony.

Countries with higher social capital ensures the transparent governmental actives. People involved in civic networks tries to ensure that government is providing efficient and effective public goods and social protection funds. When transparency exists in the country then everyone is accountable for their actions and decisions. Individuals as well as government together determines social capital of the country.

Most of the countries have either higher relational capital or system capital which offset the social capital in the country. Countries with higher relational capital cooperate with one another but at system level induvial are less cooperative, they hardly trust their legal and institutional system because of lack of transparency. While in case, where system capital is higher but relational capital is lower, people work for selfish interests at any cost. They believe that it is the responsibility of government to provide avenues of growth for each individual separately. While social capital is the product of relational as well as system capital. Social capital grows individuals, and system economically, socially, morally, ethically, and institutionally. It shapes individual's character at micro level which participates at macro level and ensure the growth.

6.1 Policy Recommendations

1. Countries with lower system capital index should introduce new and effective reforms for policy implementation which ensure transparency and accountability at governmental level. These reforms should be introduced in legal and justice system of the country.
2. Countries with lower relational capital index must focus on their civic networks. Government should provide relaxation in building civic associations with benefits.
3. Improves educational system by providing access to education at rural areas.
4. Improves health sector by providing free health care system to improve the trust on government.
5. Government with lower relational capital index must announce annual ceremonies in which efforts of people and networks will be rewarded.
6. Countries must track their social capital index to monitor the behaviour of its citizens so that they can determine and predict future upcoming healthy or unhealthy events.

7. Countries should focus the root of problems such increasing street crime, suicidal attempts. Mostly these crime increases when people do not get basic rights of living such as food, shelter and clothing. Countries should ensure economic equality on the basis of income and opportunities.

7. Conclusion

The study developed integrated social capital index on the theoretical foundation of Esser (2007). He incorporated micro and macro aspects of social capital by dividing social capital into two dimensions, i.e. relational capital and system capital. Relational capital focusses strategic positions in civic, hierarchical and ethic networks which can help others effectively. Secondly, relational capital tracks the individual's trust on individuals as well as individual's confidence on established network that helps to determine that how much people are comfortable with one another and with the system. Thirdly, relational capital also focusses on the motivational perspective of individual's by estimating their interest in volunteer activities. On the other system capital determines that how efficiently and effectively governance indicators control the economic and social activities. Secondly, system capital and also ensures that how much institutional framework is transparent to tackle inequalities and crime in the country to maintain individual's trust on the system. Thirdly, system capital also tracks the level of political, religious and ethnic conflict to maintain the peace in the society. Thus, the theory of Esser (2007) capture both sides of the social capital so that economic, social and human well-being can be ensured.

In previous studies social capital has been measured for regional basis by using three or four indicators at micro level. In this study we have captured its multidimensional phenomena and measured social capital index for developed and under-developing countries. The list of these countries has issued by IMF. Principle component analysis and equal weighted average method have been used for development of integrated social capital index. Several studies have used PCA Method and Equal weighted method average. But in this study, both methods have been used but equal method average method has been prioritized on theoretical ground.

The results have shown that, the countries which invests in both relational capital and system capital have high social capital. Such countries have high social harmony and effective and efficient economic system. Countries who have higher relational capital struggles at system level to protect their economic and social rights. On the other hand, countries with higher system capital, individuals secure only selfish interest, and faces low morality. Chile, Colombia, Australia, India, Canada, Germany, Norway, Netherlands, Singapore, Finland are the top 10 countries which have higher social capital.

References

Allen, M. H. (2021). Social Capital UnMASCed: The Role of Social Capital in StateLevel Economic Growth . *Digital Commons at Collby*.

Anil Rupasingha, S. J., & Freshwater, D. (2006). The production of social ca[ital in U.S. countries. *The Journal of socio Economics*.

Beaudoin, C. E. (2007). The Impact of News Use and Social Capital on Youth Wellbeing: An Aggregate-Level Analysis. *Journal of Community Psychology*, 947-965.

Beugelsduk, S. a. (2003). Bridging and Bonding Social Capital: Which type is good for economic growth? *In The cultural diversity of European unity*, 147-184.

Beugelsduk, S., & Smolders, S. (2003). *Bridging and Bonding Social Capital: Which Type is Good for Economic Growth?* The Cultural Diversity of European Unity.

Bjørnskov, C. (2003). The Happy few: Cross Country Evidence on Soical capitaland life satisfaction. *KLYKLOS*, 3-16.

Bjornskov, C., & Svendsen, G. T. (2003). Measuring social capital – Is there a single underlying explanation? *Department of Economics Aarhus School of Business:*, 3-5.

Bornschier, V., & Leicht, M. (2000). Befähigung zu Sozialkapitalbildung und wirtschaftlicher Erfolg im entwickelten Kapitalismus - neue Evidenzen aus Ländervergleichen 1980-1997. *Swiss Journal of Sociology*, 43-55.

Bourdieu, P. (1976). Entwurf einer Theorie der Praxis – auf der ethnologischen Grundlage der kabylischen Gesellschaft. *Frankfurt/Main: Suhrkamp*.

Bourdieu, P. (1980). Le Social Capital. *Actes de la Researche en science sociale*, 2-3.

Bourdieu, P. (1986). The forms of Capital. In *Handbook of theory and research for the sociology of education.* New York, USA: Greenwood press.

Brut, R. S. (1980). Autonomy in a Social Topology. *American Journal of Sociology*, 892-925.

Burt, R. S. (1992). Structural Holes: The Social structure of competition. *Cambridge Mass: Harvard University Press*.

Callois, J.-M., & Aubret, F. (2007). Towards Indicators of Social Capital for Regional Development Issues: The Case of French Rural Areas. *Regional Studies*, 809-821.

Casey, T., & Christ, K. (2005). Social Capital and Economic Performance in the American States. *Social Science Quarterly*, 826-845.

Castiglione, D., Deth, J. W., & Wollem, G. (September, 2007). *The Hand Book of Social Capital.* Oxford University Press.

Cigler, A., & Joslyn, M. R. (2002). The Extensiveness of Group Membership and Social Capital: The Impact on Political Tolerance Attitudes. *Political Research Quarterly*, 7-25.

Coleman, J. (1990). Foundation of Social theory. *Belknap press*.

Coleman, J. S. (1988). Social Capital in the creation of Human Capital. *American Journal of Sociology*, 95-120.

Eregha, P. B. (2014). is per capita GDP growth hampered by weak institutions and poor governance in ECOWAS countries? a panel data analysis. *54th Annual Economic Conference of the Nigerian Economic Scoiety* . Abuja, Nigeria : Nigerian Economic Scoiety .

Erum, N., Hussain, S., & Yousaf, A. (2016). Foreign direct investment and economic growth in SAARC countries. *The Journal of Asian Finance, Economics and Business*, 2288-4637.

Esser, H. (2007). The Two Meaning of Social Capital. In D. Castiglione, J. W. Deth, & G. Wolleb, *The hand Book of Social Capital* (p. 708). New York: Oxford University Press.

Etzioni, A. (1995). *The spirit of Community.* London: Fontana.

Fennwema, M., & Tillie, J. (2008). Social Capital In Multicultural Society. In D. Castiglione, J. W. Deth, & G. Wolleb, *The Hand book of social Capital* (p. 707). Oxford University Press.

Fukuyama, F. (2001). Social Capital: Civil Society and Development. *Third World Quarterly*, 7-20.

Granovetter, M. (1985). Economic Action and Social Structure And Embeddedness. *American Journal of Sociology*, 481-510.

Hanifan, L. J. (1916). The rural school community center. *the Annals of the american acadmey of political and social science*, 130-138.

Jankaukas, V., & Seputiene, J. (2007). The relationship between social capital governance and economic performance in Europe. *Business Theory and Practice*, 131-138.

Jankauskas, V., & Šeputienė., J. (2007). The Relation Between Social Capital, Governance and Economic Performance in Europe. *Business: Theory and Practice*, 131-138.

Kanck, S. F. (2003). *Democracy, Governance, and Growth.* University of Michigan Press.

Kawachi, I., Kennedy, B. P., & Glass, R. (1999). Social Capital and Self-Rated Health A Contextual Analysis. *American journal of public health*, 1187-1193.

Kawachi, I., Kennedy, B. P., Lochner, K., & Prothrow-Stith, D. (1997). Social capital, income inequality, and mortality. *American journal of public health*, 1491-1498.

Knack, S., & Keefer, P. (1997). Does Social Capital Have an Economic Payoff? A Cross-Country Investigation . *The Quarterly Journal of Economics*.

Kunioka, T. a. (1999). In (a) democracy we trust: social and economic determinants of support for democratic procedures in central and eastern Europe . *Journal of Socio-Economics*, 577-596.

Levi, M. (1998). A state of Trust. In M. Levi, & V. Braithwaite, *Trust and governance* (pp. 77-101). New York: Russel Sage Foundation.

Lin, N. (2001). Building a Network Theory of Social Capital. In N. Lin, & R. S. Karen Cook, *Social Capital* (pp. 28-51).

Lin, N. (2001). Social Capital: A theory of social struture and action. *Cambridge University Press*.

Lin, N. (2003). *Social Capital: A Theory of Social Structure and Action.* New York, USA; Port Melbourne, Australia: Cambridge University Press.

Muller, E., & Seligson, M. (2007). Civic Culture And Democracy: The question of casual relationship. In D. Castiglione, J. W. Deth, & G. Wolleb, *The Handbook of Social Capital* (p. 706). Oxford University Press.

Oorschot, W. v., Arts, W., & Gelissen, J. (2006). Social Capital in Europe: Measurement and Social and Regional Distribution of a Multifaceted Phenomenon. *Acta Sociologica*, 149-167.

Paxton, P. (1999). Is Social Capital Declining in the United States? A Multiple Indicator Assessment. *American Journal of Sociology*, 88-127.

Paxton, P. (2000). Women's Suffrage in the Measurement of Democracy: Problems of Operationalization. *Studies in Comparative International Development*, 92-111.

Paxton, P. (2002). Social Capital and Democracy: An Interdependent Relationship. *American Sociological Review*, 254-277.

Paxton, P. (2007). Association Memberships and Generalized Trust: A Multilevel Model Across 31 Countries. *Social Forces*, 47-76.

Peluso, A., Tuccillo, J. V., Sparks, K. A., & Hanson, H. A. (2024). Spatial Analysis of social capital and community hetrogenity at the united states country level. . *Applied Geography*.

Putnam, R. (1993). Making Democracy Work: Civic Tradition in Modern Italy. *Civic Tradition in Modern Italy Princeton*.

Putnam, R. (2000). *Bowling Alone: The Collapse and Revival of american Comunity.* New York: Simon and Schuster.

Putnam, R. (2001). Social Capital: Measurment and Consequences. *Candian Journal of olicy Research*, 41-51.

Uhlendorff, A. (2004). The influence of personality traits and social resources on the duration of unemployment. *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 279-303.

Uslaner, E. M., & Badescu, G. (2007). Honesty , Trust and Legal Norms in the transition to democracy: why do Rothstein is right and why he is wrong. In D. castiglione, J. W. Deth, & G. E. Wolleb, *The ahdn book of Social capital* (p. 706). oxford University Press.