SOCIO-CULTURAL PERSPECTIVES FOR SUSTAINABLE DEVELOPMENT OF INFRASTRUCTURE IN RURAL AREAS OF INDIA

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Infrastructure is the backbone of the society for socio-economic development in rural India. In the past two decades, a large-scale development of social and economic infrastructure, such as schools, roads, water harvesting structures, community centres, and houses have been undertaken, particularly in the Community Development Blocks (administrative units for rural development) of India. However, despite various measures, such as availability of finances, work forces and development guidelines, it is argued that the development of infrastructure does not occur at the desired level. Therefore, using the case study of the Community Development Blocks in Odisha State of India this investigation examined the impediments for development of infrastructure; and how sustainable development of infrastructure in rural areas of India can be attained by using a cultural theory inspired socio-cultural perspective. A survey research method and stakeholders' discussion were followed to conduct the study. Findings suggest that provision of finance, materials, equipment, availability of human resources and administrative guidelines do not alone ensure sustainable development of infrastructure. Non-effective or marginal engagement of appropriate stakeholders, disagreement and wrangle among local political leaders, and bureaucratic bottlenecks are the major impediments in the development process. However, it is also revealed that a deliberative constructive engagement and trade-offs and decisions based on concessions than consensus among the various stakeholders will enable smooth development process and construction of infrastructure in rural India. Consequently, a cultural theory inspired active and constructive engagement among the various social solidarities is advocated that would essentially generate the dynamics and cohesion among the stakeholders for sustainable development of infrastructure in rural areas in India.

Keywords: Cultural Theory; Constructive engagement; Infrastructure; Rural; Sustainable Development; Stakeholders

1. INTRODUCTION

About two- thirds of people of India live in rural areas. It contributes significantly to the Indian economy through agriculture and food sector as well as the labour pool for all the three (primary- agriculture, secondary- industry and tertiary- service) sectors of the economy in India. Consequently, it is argued that the importance of

rural India should never be undermined. However, rural areas in the country have perennially suffered from the phenomena of lack of development, poverty and over reliant on agriculture and related activities. Poor infrastructure was found to be most important barrier for the development rural areas. Consequently, understanding the demographic and economic significance and lack of appropriate infrastructure, creation and strengthening of infrastructure have been considered as vital for the development of rural areas and the country as well. In this context, Governments at both National level and State (Provincial) level have over the years developed various programmes and schemes and put into operation for creation and strengthening of infrastructure in the rural areas. Some of the important programmes and schemes that have been developed and put into operation over the years include National Rurban Mission (NRuM); *Pradhan Mantri Gram Sadak Yojana* (Prime Minister's Rural Rural Roads Plan - PMGSY); P*radhan Mantri Awaas Yojana* (Prime Minister's Housing Plan); *Jawahar Rojgar Yojna* (Jawahar Employment Scheme- JRY), *Indira Awas Yojna* (Indira Housing Plan- IAY), etc., to name a few. The Governments and at times certain private organisations interested in philanthropic acts outlay Billions of Indian Rupees for the realisation of the programmes. The major focus of these plans, programmes and schemes are multi-fold: such as, creation of employment opportunities, and creation of basic infrastructure that include rural roads, school buildings, community centres, water harvesting structures, etc., which could assist in both social and economic development of the rural areas in the country.

These plans and programmes are transferred to schemes and then to projects, which are generally undertaken through the different administrative units functioning at the District, Blocks and village level as the case may be under auspices of Provincial governance system. Additionally, local governance system (*Zilla Parishad* (council at the District level), *Panchayat Samiti* (council at the Block level) and *Gramya Panchayat* (council at the village level) created after the 73rd Amendment Act of the Constitution of India are directly responsible for the planning and implementation of such programmes and schemes. Furthermore, administrative personnel and professionals at the different levels of the above three mentioned administrative units implement and manage the projects. The governments also outline appropriate development guidelines from time to time for smooth operation of the programmes and implementation and completion of the projects. However, despite the various measures undertaken, including that of making availability of finances, work forces and development guidelines, it is argued that the development of infrastructure does not occur at the desired level. The projects suffer from conflict, delay, non-completion, and poor quality and some sometimes fails to take off the ground.

Therefore, the objectives of this investigation are to examine what are the impediments for development of infrastructure; and how sustainable development of infrastructure in rural areas of India can be attained by using a cultural theory inspired socio-cultural perspective. Using three Community Development Blocks (CDB) of Odisha state in India as the case study areas, a survey was conducted among the stakeholders to collect primary data. Further, the stakeholders'

engagement and interaction and their influence on the process of development of infrastructure were examined. The data collected was analysed by using both quantitative and qualitative methods. Findings suggest that provision of finance, materials, equipment, availability of human resources and administrative guidelines do not alone ensure sustainable development of infrastructure. Disagreement and wrangle among local political leaders, bureaucratic bottlenecks, and apathy of beneficiaries and consequently non-effective or marginal engagement of appropriate stakeholders are the major impediments in the development process. However, it is also revealed that a deliberative constructive engagement and trade-offs and decisions based on concessions than consensus among the various stakeholders will enable smooth development process and construction of infrastructure in rural India.

2. LITERATURE REVIEW

Among the many challenges, creation of infrastructure is one of the most important challenges for socio-economic development (IECD, no date; Olshansky, 2005). In development of infrastructure, importance is given to the economic, environmental and technical implication in planning and implementation of the project works. It is also evidenced from literature that resource allocation is often considered as the prime policy and adopted in general (Tatano, Homma, Okada, and Tsuchiya, 2004). However, social considerations are usually undermined (Das, 2016). Scholars argued that in addition to economic, environmental and technical considerations, social aspects such as social vulnerability, views and priorities of different social solidarities and stakeholder's engagement should be given due importance (Chapman 2015; Das, 2017; Lucas and Pangbourne, 2012). Although, it is perceived as a very complex issue, yet scholars are of opinion that sustainability and success can only be achieved if people and stakeholders play a key role in the governance and management process (Beck, Thompson, Ney, Gyawali, and Jeffrey, 2011; Chapman, 2015; Greene and Wegener, 1997).

Literature suggests that investigation in development and redevelopment of infrastructure projects has been a subject of significant investigation particularly in developing countries, which includes issues relating to infrastructure development, and asset management, social, economic and environmental implications (Haige, 2006). However, the issues relating to stakeholders' engagement and community participation in development of infrastructure projects particularly in the rural areas have been undermined. Nevertheless, the role of stakeholders' constructive engagement has already been established in different sectors such as sustainable urban development, planning and management of transportation systems, and reengineering of infrastructure to name a few (Beck, et al., 2011; Hays. 2007; Kim and Dikey, 2006; Taylor, 2007). However, due to lack of appropriate thrust on the process, it is undermined particularly in India (Das, 2016).

Understanding the severity of the issue, the Government of India made the 73rd Amendment of Act of the Constitution of India, 1992 to create a three tier governance system at the central, state and local level. It introduced self-governance at local level and empowered the local governments to make decisions, plans, proposals and implement them (GoI, 2009; Singh, 1994). The roles and responsibilities of the local bodies and the system of people's participation in the decision making are also mapped in the said amendment act of the Constitution (GoI, 2009). However, most studies undertaken to assess the functioning of the local bodies in India, point out that their performance has deteriorated over time (Aijaz, 2007; Fahim, 2009). They are confronted with inefficiency in the conduct of business, ineffective participation by the weaker sections of the population in local governance, weak financial conditions, and lack of transparency; all of which affect their performance adversely (Aijaz, 2007; Fahim 2009). The major contributing factors are the lack of responsibility and accountability and lack of respect to the stakeholders. Although, the said amendment act was enacted with a spirit of governance at grassroots level and it can be regarded as successfully functional from the structural point of view, the role of various stakeholders such as common citizens, business people, professionals, civil society, etc., are largely ignored; thereby limiting the development process to a few technical and administrative hands under the auspice of local politically elected leaders (Das, 2016, 2017).

Therefore, it is argued that paradigms to strengthen the stakeholder's participation and engagement as per the spirit of the Constitution of India be developed for sustainable development of infrastructure in rural areas of India. From the evidences available in literature across the world, a number of scholars argue that such a challenge can be overcome by creating a platform through the application of theories of social organisation and governance, such as Cultural theory (Douglas and Wildavsky, 1982; Schwarz, and Thompson, 1990; Thompson, Ellis and Wildavsky 1990; Thompson, Rayner, and Ney 1998; Thompson, 2008; Verweij and Thompson, 2006).

3. RESEARCH METHODS
3.1 Study area and project profiles

District Rural Development Agencies (DRDA), Community Development Blocks (CDB) at Block level and Village Panchayats in hierarchical order at the local level are the three tiers of administrative and implementing agencies of the rural infrastructure development projects. At the same time, *Zilla Parishad, Panchayat Samiti* and *Village Panchayats* are the local governing bodies at district, block and village level respectively responsible for planning, budgeting, strategic decisions and programming. Consequently, CDBs remain pivotal in the whole process of planning, decision making, programming and implementation. They generally act as the linkage between the two other tiers of functionaries at the District and Village Panchayat level. Therefore, CDBs are considered as the case studies for this study. Under this premise three CDBs in the Odisha State of India such as Odapada of Dhenkanal District (Block 1) Balipatna of Khurda district (Block 2) and

4

Kishorenagar of Angul district (Block 3) were taken as the case study areas for investigation and survey. Three types of projects in these CDBs such as primary schools, rural roads and community centres considered for the evaluation. The profile of projects in these study areas is presented in Table 1. The projects include 31 (31.6%) primary schools, 38 (38.8%) roads, and 29 (29.6%) community centres to a total of 98 projects in the three blocks.

Table 1 Profile of projects and stakeholders

Profile of projects							
Project characteristics				Total	Estimated project cost (USD) range	Estimated project duration (months)	Contractor
Type of projects	Block 1	Block 2	Block 3				
Primary Schools	15	10	6	31 (31.6%)	3000-5500	12 -18	Selected from community
Roads	16	15	7	38 (38.8%)	2500-3500	6-12	Selected from community
Community centres	12	9	8	29 (29.6%)	2000-3000	6-12	Selected from community
Total	43	34	21	98			
Stakeholders profile							
Administrative officials	3	2	2	7			
Engineers	3	3	2	8			
Local leaders	6	6	4	16			
School teachers	8	6	3	17			
Contractors	11	7	5	23			
Common citizens	44	35	20	99			
Total	75	59	36	170			

3.2 Survey, data and analysis

Data were collected from both primary sources and archival records. Data relating to project profiles and status of the projects were collected from archival records of the concerned CDBs and Village Panchayats. A stakeholder's survey was conducted to collect primary data to examine the factors that influence the success and failure of projects by using pretested questionnaires. The stakeholders selected for the survey were contractors, supervising engineers, administrative personnel, local leaders, school teachers, and common citizens. They were chosen based on their engagement, availability and stake in the projects. The stakeholders for survey were selected by following two processes. First, the administrative officials and engineers, were selected by using convenient sampling process because only limited number of such personnel were engaged and available in the project development in the study area. Second, contractors, school teachers, local leaders and common citizens were

selected by using random sampling process. The sampling in this case was done by choosing one stakeholder from every five persons from a particular category engaged in the development of projects and are available and willing to participate in the survey. Since the number of stakeholders in certain categories (such as administrative officials and engineers) was limited, there was no choice than using the convenient sampling or else they would have been left out of the survey process, which could have provided a skewed responses and findings. However, care was taken to avoid any bias and skewness by treating them as one of the survey respondents. A total of 170 stakeholders (75 from Block 1, 59 from Block 2 and 36 from Block 3) were surveyed which include 41.8% officials, teachers, engineers, contractors and local leaders who are directly associated with the projects and 58.2% common citizens aware of various developmental works in the blocks. The variables included in the questionnaire are awareness about the projects, availability of finance, cost of projects, contractor selection process, estimated and actual duration of projects, issues relating to materials, equipment, skill and supervision of projects, execution and project management issues, and challenges encountered in the projects. Besides, informal meetings were conducted by inviting stakeholders and engaging them in discussions to understand the stakeholders' engagement and participation in planning, decision-making and construction of projects and their influence thereof on the success of the projects. The stakeholders' discussion and engagement was conducted through non-structure interviews and informal group discussions.

The data collected were analysed both quantitatively and qualitatively. Quantitatively descriptive statistics analysis and Cronbach's alpha test of the data collected were done to observe the reliability of the data. A perception index (PI) based on average index method conducted to examine the various factors that influence the completion of the projects. The PIs for different variables calculated by considering the weighted average of the perceptions of stakeholders assigned by the respondents on a particular variable in a scale ranging between 0 and 1. The formula used for calculating perception index is given in Equation (Eq.1).

Perception index= PI= $\frac{\sum wi*xi}{\sum xi}$ (1)

xi= number of respondents assigning a particular index value
wi= index values assigned by respondents

Furthermore, the qualitative data were analysed by using traditional (without use of any software) method of interpretation through narrative analysis to understand the politico-social and cultural perspectives for development of infrastructure in the study area. The narrative analysis was conducted under four themes such as participation of stakeholders and consultation with them, interference of local leaders in the projects, conflict among stakeholders and its impact on the projects and constructive engagement among stakeholders and its impact on the projects.

4. **RESULTS AND FINDINGS**

It was essential to examine the completion rate of the projects and what are the essential factors that hamper the completion of projects before exploring how successful completion of projects can be achieved in the rural areas. These aspects are discussed in the following sub-sections.

4.1 Completion rate of projects

Completion rate is an indicator of success of projects. Therefore, the status of the competition of the projects were examined and compared to the targeted completion rate within the estimated period set by the implementing organisations (CDBs) and presented in Table 2. A discussion with the administrative officials and engineers revealed that a minimum target for completion rate of 85% within the estimate period was generally set in all categories of projects. It is found that overall only 30.6% of the projects were completed within their estimated project period and 32.7% of the projects were completed between 51% and 99%. However, more than one third of the total projects (36.7%) were less than half complete. Among the successful projects, it is observed that the success rate of road projects (39.5%) is higher than both the types of building projects such as schools (22.5%) and community centres (27.6%). Also, it is revealed that about 48.4% of the schools and 41.4% of community centre projects were less than half complete. However, road projects have shown significant progress as about 36.8% projects were advanced to a level from 51% to 99% of completion. Thus, the completion rate of the projects is significantly below than the set targets, in almost all categories of projects although the situation of road projects was more promising than both the types of building projects (schools and community centres).

Table 2. Status of projects within estimated period

Projects	Total number	Targeted completion rate	Status of projects within the estimated period		
			Fully complete	**51%-99% complete**	**≤50% complete**
Schools	31	≥85%	7 (22.5%)	9 (29.1%)	15 (48.4%)
Roads	38	≥85%	15 (39.5%)	14 (36.8%)	9 (23.7%)
Community centres	29	≥85%	8 (27.6%)	9 (31.0%)	12 (41.4%)
Total	98	≥85%	30 (30.6%)	32 (32.7%)	36 (36.7%)

4.2 Factors causing impediments of the projects: stakeholders perception

The various factors, which essentially cause impediments including disruptions and delay of the projects in the study areas were identified from the stakeholders' discussion. These variables are: lack of planning/ poor planning, cost of projects,

under estimation of the projects compared to market rate, unavailability of finance, timely unavailability of fund for construction, lack of adequate materials, lack of appropriate equipment, lack of human resources, lack of skill, choice or appointment of contractor, contractor incompetence, bureaucratic bottlenecks and lack of support of executive agencies, intervention of local leaders, conflict between community, contractor and executive agencies, and lack of stakeholders engagement. The perception indices (PI) of these variables showing their influence on the completion of projects from the survey data were quantified and presented in the Table 3. However, before the PIs were calculated, the reliability and consistency of the data were tested by Cronbach α test and Standard Deviation (SD). The Cronbach α for the variables range between 0.74 and 0.83, which indicated that the responses were reliable. The lower SD values, which range between 0.08 and 0.22 for different variables indicated the consistency of the responses. These tests indicated that the data collected were suitable for further analyses. Findings from PI analysis suggests that the lack of stakeholder's engagement, followed by conflict among the community, contractor and executive agencies, timely unavailability of fund for construction, bureaucratic bottlenecks and lack of support from the executive agencies and choice of contractors are the most influential variables which impede the completion of projects. Underestimation of projects, inability of contractors, intervention from local leaders, and cost of projects influence the delay of projects moderately. However, lack of adequate materials, lack of human resources, unavailability of finance, lack of skill, lack of equipment, lack of planning, and lack of equipment influence the completion of projects to a lesser extent.

Table 3. Influence of variables on the impediments of completion of projects

Variables	Impediments (Perception Index)				Influence	Rank
	Schools	Roads	Community centres	Average		
Lack of planning/ poor planning	0.32	0.27	0.33	0.31	Less influential	14
Cost of projects	0.60	0.52	0.70	0.61	Moderately influential	9
Under estimation of projects	0.75	0.55	0.78	0.69	Moderately influential	6
Unavailability of finance	0.20	0.35	0.45	0.33	Less influential	12
Timely Unavailability of finance	0.81	0.76	0.75	0.77	Highly influential	3
Lack of adequate materials	0.42	0.46	0.50	0.46	Less influential	10
Lack of appropriate equipment	0.24	0.36	0.31	0.30	Less influential	15
Lack of human resources	0.46	0.43	0.39	0.43	Less influential	11
Lack of skill	0.30	0.35	0.30	0.32	Less influential	13

8

Choice/ appointment of contractor	0.80	0.70	0.65	0.72	Highly influential	5
Contractors inability/ incompetence	0.70	0.65	0.65	0.67	Moderately influential	7
Bureaucratic bottlenecks and lack of support from executive agency	0.75	0.80	0.65	0.74	Highly influential	4
Intervention from local leaders	0.75	0.70	0.50	0.65	Moderately influential	8
Conflict between community, contractor and executive agencies	0.85	0.80	0.68	0.78	Highly influential	2
Lack of stakeholders' engagement	0.85	0.81	0.74	0.80	Highly influential	1

Cronbach α for variables vary between 0.74 and 0.83; SD range between 0.08 and 0.22

Further, qualitative discussion with the stakeholders through informal meetings and group discussion and consequent narrative analysis under the four themes such as participation of stakeholders and consultation with them, interference of local leaders in the projects, conflict among stakeholders and its impact on the projects and constructive engagement among stakeholders and its impact on the projects revealed that stakeholders play a major role in the successful completion of the projects. For example, in case of schools, the school management, parents of children and teaching community; and in case of roads and community centres, the villagers/ communities are the direct and indirect stakeholders. In a democratic set up and bottom up approach of development process at the community level as empowered by the local governance system, these stakeholders should be engaged and consulted at every stage of the development process starting from planning, programming to implementation and project handover stages. However, as found out from the discussions it is revealed that the role of these stakeholders were undermined leading serious consequences of conflict and delay. As some community level stakeholders such as village leaders including local leaders and school teachers put it-

 ".... *the villagers, and communities were not consulted or taken in to confidence even at the time of inception of the projects, as well as while appointing the contractor, and in aspects related to planning, layout, and execution. The priorities of people were also not being sought. So, many a time conflicts between the contractor, community and executive agencies occur leading to delay or halting of the construction.*"

Moreover, it is also found that other stakeholders like local leaders, competing contractors, community, transporters, material and equipment suppliers, and community level organizations engaged in social development sector were also rarely consulted formally or informally in the planning and execution of projects. As per some local leaders-

"......*there have hardly been any stakeholders' engagements among the contactors, executive agencies and communities in any aspect of the works until any conflict arise. The executive agencies, officials and contractors do the works according to their choices and preferences. In case any consultation takes place, only few preferential people known to the executive agencies and local leaders from the community were chosen and the large segment of the community were grossly neglected*". This causes indifference, antagonism and conflicts.

Furthermore, according to people from villages and communities, the local leaders usually interferes in the project execution. For example, if the location of projects, choice of contractors, and suppliers are not according to choice of the local leaders and if the officials and contractors do not give them importance then they try to create obstacles in the execution of the projects. In other words, they try for force their interest and choices in the decision making and execution process. In this regard, some people from a community affirmed that

"*.... elected local leaders try to put their wishes and choices as the priority. They try to create obstacles in the projects if the project is not executed according their wishes. They try to influence the officials, suppliers and contractors to delay in financing the projects, supply of materials and equipment and construct in time. They also at times instigate conflict among the people and different stakeholders having competing interests*".

Similarly, according to a school teacher "*...when a contractor used low quality materials and poor specifications to construct a building to get higher profits, conflict among the community, school management and the contractor was engendered leading to stalling of the project for a long tim*e".

Thus, it is revealed that conflict among the contractor, beneficiary and community arises because of the ulterior motives of the contractors for higher profit which leads to low quality construction. Furthermore, according to some people discussed with, the competing contractors at times play a crucial role in instigating the conflict.

However, there have been positive evidences of completion of work, where the stakeholder was engaged constructively and were a part of the development process.

For example, according to a school teacher corroborated by the village level leaders-

"*... the school management and community leaders were consulted in the execution of the project; the teachers and community took active interest in the work; and the*

contractor requested for cooperation from the people, and with the active supervision of the engineers and administrative officials, the building was completed more or less within the stipulated time of about one year".

Similarly, in another instance, when a contractor from the community on the recommendation and consultation of villagers took charge of construction of a road project, the project was completed within a limited period of time. As a senior person from the village puts in perspective-

"*…. the construction of the road was stopped for some time as the contractor and the officer in charge were not heeding to the demands of the villagers. However, once the villagers were consulted and the way forward was decided such as contactor selection, specification of road materials and execution period of the project, the project was completed in no time without any problem*".

Thus, the views of people and stakeholders corroborate the findings of the survey that lack of stakeholder's engagement and conflict and wrangle among the stakeholders cause delay in projects and sometimes leads to non-completion. However, when communities and stakeholders were appropriately engaged and consulted, the projects were successful.

4.3 Socio- cultural perspective for effective stakeholders' engagement

Three important perspectives were emanated from the discussions with the stakeholders. First- according to the officials and personnel engaged in the planning, programming, decision making and implementation, it is difficult to manage the stakeholders' participation because of the sheer number and diversity of stakeholders[1]. Second, despite the availability of the policy for stakeholders' engagement and participation and constitutional mandate, it does not occur in reality[2]. Third, discussions with the stakeholders of various successful projects in the study areas suggested that the different stakeholder such as communities, school management committees including teachers (in case of school projects), and villagers have a major say in the project starting from the initiation, planning, contractor selection, to execution and supervision of the projects.

Similarly, according to literature it is revealed that governance of human settlements involves multiple actors and stakeholders, interdependent resources and actions, shared purposes and blurred boundaries between the public and the private; formal and informal; and state and civil society sectors (UN Habitat, 2001). So, the role of governance agencies, private sector such as contractors, suppliers, community

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[1] Opinions of officials and personnel in decision-making planning and implementations.

[2] Views of a number of stakeholders

organisations, political leaders, etc., cannot be undermined. However, the active engagement of these varied actors in governance and project execution and management need higher co-ordination, negotiation and building consensus or to arrive at concessions (Das, 2017).

Under these pretext, although it was quite essential for stakeholders' participation and engagement for success of projects, multi-actor planning and stakeholders' engagement in planning, decision making and execution is observed to be a hugely cumbersome and difficult process. It is also observed that the conventional approaches of stakeholder participation and engagement is not assuring any significant success in the prevailing conditions. Thus, looking at the current in-effectiveness, there is a necessity for new socio-cultural perspective that could entail for more inclusive, strong and effective engagement among the stakeholders. A number of scholars argue that this challenge can be overcome by creating a platform through the application of theories of social organisation and governance, such as Cultural theory (Douglas and Wildavsky, 1982; Schwarz, and Thompson, 1990; Thompson, Ellis and Wildavsky, 1990; Thompson, Rayner, and Ney, 1998; Thompson 2008; Verweij and Thompson, 2006).

Cultural theory professes that, all the stakeholders can be mapped to a four-fold typology of social solidarity: the individualist, hierarchicist, fatalist and egalitarian (Douglas and Wildavsky 1982; Thompson, Rayner and Ney, 1998). According to this theory, for the individualist (market forces), humans are inherently self-seeking and atomistic, the nature is benign and forgiving, and can able to recover from any exploitation. They believe that trial and error in self-organising and ego-focused networks (markets) are the way to go. Individualist actors trust others until these persons give them reason not to, and then retaliate in kind (Rapoport, 1985). They institute equality of opportunity and promote competition, which means no accountability. For them it is fair that those who put most in get most out. For the hierarchicist solidarity (administration, governing and decision making authority), the world is controllable, humans are malleable, deeply flawed but redeemable by firm, long-lasting and trustworthy institutions. Fair distribution should be by rank and station or – in the modern context– by need, with the level of need being determined by an expert and dispassionate. Fatalist (the common people) do not find rhyme or reason in nature and for them humankind is fickle and untrustworthy. Consequently, fairness is not to be found in this life and there is no possibility of effecting change for the better. The egalitarian solidarity (social and community organizations) is opposite to it. For them, the society is fragile and intricately interconnected. Humans are essentially caring and sharing, until corrupted by the coercive and non-egalitarian institutions of markets and hierarchies. To them it is not enough that people who start off equal must end up equal; trust and levelling go hand in hand, while institutions that distribute unequally are distrusted. Voluntary simplicity is regarded as the only solution to the societal problems (Beck et al, 2011; Douglas and Wildavsky, 1982; Thompson, Rayner and Ney, 1998).

In such a case, each of the above solidarities generate its own storyline, which in turn contradicts the storylines of the others (Beck, et al, 2011; Douglas and Wildavsky 1982; Thompson, Rayner and Ney, 1998), and the complex dynamics of their interactions can steer matters in sometimes destructive or sometimes constructive directions (Beck, et al., 2011). However, each solidarity finds certain elements of experience and wisdom that are missed by the others. Each offers a clear expression of the way things should be done. Therefore, it is important that all of them to a certain extent be taken into account in the state of affairs and decision making (Verweij and Thompson, 2006). A set of examples from across the world such as resolving the problem of the water sanitation system in Kathmandu valley, Chattahoochee in Atlanta (Beck, et al, 2011); access to service delivery – particularly in sanitation and solid waste management – by people in Kampala; and ameliorating the problem of hygiene and sanitation in Yaoundé (Parrot, Sotamenou and Dia, 2009; Tukahirwa, Mol and Oosterveer, 2010) show that this perspective has been found successful. It is found that in all cases, the engagement of different solidarities – although some delivered clumsy solutions – provided some prospect of a collectively accepted progress (Das, 2017).

In the context of infrastructure development in rural areas of India, there is a need for simplifying the complex stakeholders' participation and engagement and number of stakeholders need to be scaled down[3]. For instance, the stakeholders should be mapped to four distinct solidarities as proposed by the Cultural theory. Market forces, industries, business organisations, suppliers, contractors, etc., should be groups under the individualist solidarity. hirarchicist should constitute governance system, local leaders, executive agencies, etc. Community organisations, NGOs, village committees, school management, etc., should form the egalitarian solidarity. The common citizens form the other fatalist solidarity. The principle to be followed is the relationship between participation and responsiveness. For, example, with more participation from stakeholders, more responsiveness is expected. While decision making is to be made these solidarities or representatives of these solidarities (in order to limit the numbers to practically feasible and constructive engagement) should be allowed to portray their needs, priorities, demands and challenges. Based on each other's storylines and constructive engagements, concessions may be made and feasible decisions can be arrived[4]. Such cases were evidenced from the successful projects in the study area. For example, in some projects where decisions were made by the different group of stakeholders through constructive engagement on some aspects such as what projects were of priority, what should be the project period and duration, what should be project cost, who should be the beneficiaries, who should execute, who should be the contractors and who should be the supervisors and arbitrators in case of conflict, those projects were

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[3] Officials and some of the stakeholder's opinion
[4] Stakeholders opinions of the successful projects

13

successfully completed without much challenges and within the estimated time and cost. In this regard, in some projects the representatives from the community from different stakeholder groups after a discussion in their villages had got engaged with the executive agencies proactively to be a part of project selection, planning and design, selection of contractors, and liaise with local leaders and contractors for the smooth progress of the construction work. Also, they assisted the supervisory and implementation authorities for the smooth execution of the projects. Contractors, and suppliers worked in coordination with both executive agencies and representatives from the community[5]. The village committees, and community organisations acted as the watch dogs and also assisted in conflict resolution[6]. Such constructive engagement of the stakeholders minimised or resolved conflict if any, kept the executive agencies and supervisors on their toes, and ensured the contractors to work at the desired speed and according to the specifications, which enabled successful completion of projects in time with appropriate quality[7].

Thus, theoretically, while grouping the stakeholders into different solidarities will mitigate the challenges of too much of stakeholders by minimising the number of stakeholders to feasible entities, evidences from successful projects show practically how projects can become successful through constructive engagements and concessions. Therefore, in a democratic set up while keeping the economic, environmental and technical aspects of development of infrastructures in rural areas as important considerations, although they may or may not ensure success, the socio-cultural perspectives such as stakeholders constructive engagement through delineating different social solidarities, allowing each solidarity to listen to others storylines, and arriving at concessions than consensus would perhaps assist in achieving sustainable and successful infrastructure development in the rural areas of the country.

5. DISCUSSION

Infrastructure development is a complex process. Particularly, it becomes more challenging in the context of rural areas of India. It rests on a number of social, cultural, economic, political and technical factors as well as involves a set of stakeholders with diverging demands and storylines (Beck et al, 2011). As observed from this study, the success rate in completion of the infrastructure projects are not according to the targets set by the organisations engaged in the infrastructure development. The reasons are found to be multi-fold. They range from the lack of stakeholder's engagement, conflict among the community, contractor and executive agencies, timely unavailability of fund for construction, bureaucratic bottlenecks and lack of support from the executive agencies to choice of contractors. These are the major variables that impede the construction and delay the projects, which are corroborated by various scholars (Aibinu, and Odeyinka 2006; Alaghbari, Razali,

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[5] Opinions of Contractors
[6] Opinions of village committee members
[7] Opinions of administrative officers, supervising engineers, villagers and contractors

Kadir, and Ernawat, 2007; Das, 2015; Das and Emuze, 2017; Desai., Bhatt, 2013; Doloi, Sawhney, Iyer and Rentala, 2012). Followed by, it is also found that underestimation of projects, inability of contractors, intervention from local leaders, and cost of projects influence the delay of projects moderately (Alaghbari, Razali, Kadir, and Ernawat, 2007; Das, 2015; Das and Emuze, 2017; Desai., Bhatt, 2013; Doloi, Sawhney, Iyer and Rentala, 2012). Contrary to these factors, lack of adequate materials, lack of human resources, unavailability of finance, lack of skill, lack of equipment, lack of planning, and lack of equipment do not necessarily significantly influence the completion of projects. Further, it is ascertained that strong and effective stakeholders' engagement and conflict resolution are highly paramount for the successful development of infrastructure projects, which corroborate the observations of scholars such as Beck et al, (2011).

In this context, the study identified that certain categories of stakeholders such administrative officials, engineers, local leaders, school teachers, contractors and common citizens play pivotal role in the infrastructure development projects. The successful and constructive engagement among these stakeholders and trade off in their demands will enable successful and timely completion of the projects. Therefore, to avoid convolution in the participation and engagement process these stakeholders should form the nexus of the four-fold map of the cultural theory, viz: individualists, hierarchicists, egalitarian and fatalist. The contractors or suppliers should be the individualist solidarity, administrative official and engineers belong to hierarchicist category, local leaders, school teachers and/ or community organisations form the egalitarian solidarity and common citizens or users of the infrastructures are the fatalist solidarity (Beck, et al., 2011; Douglas and Wildavsky 1982; Thompson, Rayner and Ney, 1998). A definite relationship need to be established between the identified stakeholder solidarities and the four strands of the cultural theory in rural India. In this context, local leaders and community organisations (egalitarian) with the help of common citizen (fatalist) can delineate the priorities and demands for different infrastructure projects and liaise with administrative officers and engineers (hierarchicists) for their approval and initiation. The hierarchists in this case the administrative officers and engineers prepare the detailed project and invite tenders or call for expression of interest from the individualist solidarity such as contractors and suppliers for the execution of the projects. However, the contractors and suppliers (individualists) should be selected by the hierachicists in consultation with the both egalitarian solidarity such as local leaders, school teachers (in case of schools) and community organisations and representatives from the users (villagers) (fatalist- the common citizens). Similarly, the common citizens and egalitarian groups should be given the responsibilities as the watchdog to see that the projects run according to the schedule, assist in conflict resolution and check the quality of the work. Thus, the combined effort and constructive engagement with clear roles and responsibilities and concessions with regards to the demands of each other would assist in the sustainable development of the infrastructure projects in the rural India.

15

6. CONCLUSION

Infrastructure development is vital for the progress of rural India. The Governments at the central and state levels have been taking measures to reinforce the rural infrastructure for a long time. However, experience shows that development of infrastructure has been a serious challenge. Usually the projects exceed the stipulated estimated time and overrun the cost to complete. At times, it also gets difficult to take off from the ground. As observed from this investigation only about 30.6% of the projects were observed to be completed within the estimated time. Therefore, this study examined the various impediments for development of infrastructure; and how a cultural theory inspired socio-cultural perspective can engender sustainable development of infrastructure in rural areas of India. For this purpose, three Community Development Blocks of Odisha state in India were used as the case study areas. A survey research method was used for collection of data and both quantitative and qualitative analyses of the data collected were conducted. Also, the stakeholders' engagement and interaction and their influence on the process of development of infrastructure were examined through stakeholders' discussion and narrative analyses. It is revealed that provision of finance, materials, equipment, availability of human resources and administrative guidelines are not sufficient to ensure successful completion of infrastructure projects. Lack of stakeholders' constructive engagement; conflict among the community, contractor and executive agencies; timely unavailability of fund for construction and bureaucratic bottlenecks; lack of support from the executive agencies; and choice of contractors are the major obstacles in the infrastructure development process. Narratives from stakeholders' discussion also revealed that stakeholders' effective participation and engagement hold key to success of the projects. Consequently, it is found that a deliberative constructive engagement and trade-offs and decisions based on concessions than consensus among the various stakeholders enable smooth development process and construction of infrastructure in rural India. Thus, it is advocated that a cultural theory inspired active and constructive engagement among the relevant actors in the various social solidarities will essentially generate the dynamics and cohesion among the stakeholders that would enable sustainable development of infrastructure in rural areas in India.

The study has certain limitations such as it is based on the limited survey data from the three CDBs in Odisha State India. Further, the analyses were conducted on aggregate basis rather than on individual projects. As well as the socio-cultural perspective and stakeholders' engagement was kept limited to conceptual level. Therefore, there is a need for further study at individual project level to examine the intricacies of project success as well as exploring a robust mechanism of socio-cultural perspective for effective stakeholders' engagement that could enhance successful infrastructure development in rural India, which is the further scope of the study.

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