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Configuration of technological transfer, policy implementation and psychological conception during community participation procedures in South Africa

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CHAPTER ONE-INTRODUCTION

1.1 Problem Statement

Due to previous historical circumstances, South African communities in developing areas have not been exposed to development and an understanding of infrastructure such as housing requirements, roads, transport systems and the like; technological advancement through projects. There is difficulty in the negotiation procedures and understanding of availability and feasibility of resources.

Although South Africa has excelled in drafting documentation with regard to the matters discussed above and policies have been established; there is however difficulty in policy implementation.

The South African government has gone through a major metamorphosis and currently has a multifaceted structure. However, South Africa still lacks institutional capacity to manage and streamline systems with regards to community participation and, there is a lack of professional involvement and the current systems are backed up by bureaucratic procedures.

The negotiation system with developed communities is complex. Technological transfer, economic and education obstacles in understanding, questioning, implementation of the process and maintenance are present. The community is unaware as to what they should be asking regarding various stages of the project and the delivery of the final product.

It often presumed that the community is a passive element in the participation process. However for a project to be successful it is as much up to the communities interacting in a bottom-up formation as well as the professionals being involved in a top-down structure. this concept is often misunderstood by expert and often proposed as separate elements in conduction a project rather than a simultaneous incorporation of action.

1.2. Research Objectives

- To establish technological transfer through community participation as well as problems relating to such transfer.
- To provide possible solutions for the deficiencies found in policies and implementation techniques.
- To establish methods of integration of social, psychological and technical elements in the community participation procedure.

1.3. Hypothesis

Is it possible to construct a participatory model that provides a cohesive and functional structure of theoretical and practical methods for incorporation of social, technical and psychological aspects during community participation procedures which involve technological transfer and policy implementation?

1.4. Background History

The election of Nelson Mandela in 1994 marked the first time all race elections were held in South Africa and the end of white rule in South Africa.

For many, the revolution in South Africa resulted in insignificant change in the standard of living; continued poverty, insufficient housing, an overloaded education system, and many other legacies from the Apartheid period still hinder the growth of the nation. The South African past has revealed how pervasively a distorted, but legalized allocation of power can result in a warped social structure when backed by determined security forces, how a just authority of a firm opposition external to the legalized organizations, can confront that power if it can function from a protected platform and obtain external support. (Adato *et al*, 2005)

Prior to 1994, South Africa did not depict surroundings of actively participatory communities in local and provincial government development affairs. (Adato *et al*, 2005)

Naturally society that evolves with modernization usually creates common social values and norms, which aid in construction of harmony and teamwork among communities, guaranteeing a harmonious development at local, national and international basis.

During Apartheid the Bantu Education Act, Act No 47 of 1953 governed the Black Education Department in the Department of Native Affairs which would compile a curriculum that suited the "nature and requirements of the black people". The instigator of such legislation, Dr Hendrik Verwoerd at the time the Minister of Native Affairs and later Prime Minister, declared that the objective was to prohibit Africans from receiving an education that would enable them to reach the positions they were not allowed to be designated to in society- deliberately de-emphasizing the education of science and mathematics. As an alternative Africans were to obtain an education which was planned to educated them in the skills necessary to provide their own people in the homelands or to be employed in laboring jobs under whites. (African History, 2010) This foundation of apartheid ideology-in-practice caused devastation on the education of black people in South Africa, and disadvantaged and deprived millions for decades. Its demoralizing personal, political and economic effects persist to be present and continuously fought against today. (South African History, 2010)

Democracy introduced a new emphasis and clarity to government activities, greater public responsibility and the commencement of respect for human rights. This approach fundamentally differed from the old-style authoritarian concept to organization of development in which community consideration and consultation was limited. (Gregory A, 2003)

The introduction of democracy in South Africa and the government commitment to its principles have produced a benevolent approach and legislative environment that ensures that society is involved in issues affecting them, particularly on methods of governance. This policy route was essential to initiate change in the democratic state as one of the obvious aspects of the previous apartheid government was the elimination of the black majority in all associations with the state. The South African government became alert to occurrences both in the national and universal cases illustrating the reality that for policies and projects to be sustainable, community involvement is essential from the planning phase until completion and thereafter. (Adato *et al*, 2005)

The government began to appreciate that the concept of democracy relies on adaptation, responsibility and suggestion; and that these were best achieved via community participation. The base of this hypothesis initially relied on the theory that that a sense of community ownership is vital for sustainable development and that such ownership can only be derived from a legitimate participative approach. Concurrently with this approach the general public

should be aware of how government organizations are run, how resources are allocated and who is responsible for various provisions of services. This allows the public to become benefactors of resources available via government subsidies and grants. Involvement of the general public ensures varying levels of success. (Ezinqoleni Community Participation Strategy, 2009:2*)*

Upgrading of facilities, channels of education and technological advancements in the underprivileged community sectors began to evolve and numerous improvements in the government structures began to take place.

1.5. Technology Transfer

Technology transfer is the process by which basic science studies and essential discoveries are developed into practical and commercially appropriate applications and products. The transfer of technology is primarily a matter of a stream of knowledge from one individual to another; this process can be achieved through education, scientific literature, or direct contact via community participation in the acceptance process. It is the progression of sharing of information, skills, technological advances and processes of industrialization among governments and organizations to guarantee that scientific and technological developments are available to a wider variety of consumers who can then advance development and utilize the technology into innovative goods, procedures, resources or services. . (Absolute Astronomy, 2009) this definition of technological transfer will be referenced every the author refers to the process of technological advancement, technology transfer and the like.

Theoretically this practice has been made use of for many years - in ancient times, Archimedes was notable for applying science to practical problems - the present-day volume of research, combined with high-profile failures has led to a focus on the process itself. (Absolute Astronomy, 2009)

Technology transfer is an interest matter in numerous academic, professional and authority congregations, such as government policymakers, business executives, international funding agencies, and, due to the concurrent relationship between technology transfer and economic growth interest is raised among the academic researchers. (Richard Li-Hua, 2010:2)

This dissertation will highlight the active characteristics of technology improvement, and transfer, as opposed to the fixed expenditure of products. The following examples will be discussed in further chapters with reference to community participation and the importance of human resources in the development and application of technology: the transfer of subsidized housing in Bangkok; rural development in India; and transfer of photovoltaic technology in Brazil and South America. The dissertation highlights how technology is today transferred to developing countries and the barriers that affect that transfer. It also recognizes policy improvements that have the capacity to surpass those obstacles, namely the flow of human resources through international education, the flow of public-sector technology support and other mechanisms.

The improvement of infrastructure in post-apartheid South Africa demanded an establishment of legitimate systems and policy improvements. This would allow further developments to follow uniform principles and ethics in the procedures.

1.6. Legislation and Policy Aiding Community Participation

To legitimize and incorporate the participation procedure into all aspects of development in South Africa the government must demonstrate the commitment via integration of community participation into all progressive projects. This route is verified in all spheres of management, specifically national, provincial and local government as well as policies governing developments.

Section 152 of the Constitution of the Republic of South Africa, Act No 108 of 1996, contains a number of sub-sections that illustrate structure for local government communication. Municipalities should promote participation of communities and community organizations in affairs of local government.

Section 160 states that the municipal council must conduct its business in an open manner, allowing the community to participate and be educated as to how projects are initiated and ensure accountability of the provision of services. (Ezinqoleni Community Participation Strategy, 2009:5*)*

Ezinqoleni Community Participation Strategy (2009) refers to the White Paper on Local Government (1998) requiring citizen participation in Integrated Development Planning (herein referred to as the IDP) Budget, policy formulation, monitoring and evaluation of decision making and implementation.

Municipal Systems Act No 32 of 2000, referred to as the Systems Act, characterizes a municipality to be composed of the political configuration, administration and the community in its area of jurisdiction. The Act also requires municipalities to establish a two-way communication link with its residents. (Ezinqoleni Community Participation Strategy, 2009:5*)*

Although establishment of the legislature is an essential element in further development of progression of the development of the countries standard system it is essential to have the institutional capacity to administer the procedures. The evolvement of institutional capacity will now be introduced.

1.7. Evolution of Institutional Capacity

Community Organization, Rural Empowerments and Engineering, 1990 sets an accurate description of the democratic movement in South Africa which results in the complex undertaking of rectifying the consequences of an apartheid-based blueprint of urban development to accomplish a system that is non-racial, independent, well-organized, integrated, and sustainable. A chief requirement for achieving these objectives is the development of adequate institutional capacity to administer, resourcefully and efficiently, the procedure of policy formulation, implementation, monitoring, and evaluation. The democratic process has created a highly aware and structured civil society with a practice of continuously engaging in the policy process through cooperation and objections. Conversely, the present institutional and governmental framework has estranged the majority of the population; it is highly congested in relation to the size of its present clients. Improvement of institutional capacities within the democratic progression and corresponding reformation of existing state associations are critical and imperative responsibilities. (Community Organization, Rural Empowerments and Engineering, 1990)

The refurbishment and enhancement of institutional capacity is complex. It entails the consolidation of grassroots organizations as trade unions, and community associations. The reinforcement of relationships between local authorities, metropolitan governments, and organs of central government would result in open and well-organized communication of decision inputs, outputs, and review; responsibility of appropriate authorities at various levels. In addition to these fundamental management functions of forecasting, institutions will have to be more participatory and people focused, they will have to identify the low-income category of a major part of urban society. (Community Organization, Rural Empowerments and Engineering, 1990)

Institutional advancement involves increasing awareness and skill intensity for decision-making, cooperation, performance, supervision, and appraisal, from the community to the national level. Finally, it involves an expansion in the stages of resources allocated for capital equipment and employees. The quantitative and qualitative magnitudes of these essentials, as well as the method in which they are activated and arranged, have a significant influence on institutional performance. Concentrating on these institutional concerns will allow the democratic progression to encounter the fundamental challenges of urban development both as they become patent today and as they will potentially materialize. (International Development Research Centre, 2009)

Institutional capacity is necessary to administer developments and procedures; it is via our government structure and establishments that one may execute such processes. The South African government structure will now be discussed.

1.8. Government Structure

The size, regional variety, and post-apartheid policy had molded South Africa into a particularly multifaceted structure of government. This structure comprises a diversity of institutions at the national level such as

'a parliament, municipalities, parastatals, specialized departments and others.'

Originated in every segment of urban development, this disjointed institutional outline results in a lack of efficient synchronization within government; a prolongation of racial foundation and uneven policy formulation, progression, and execution; and minor improvement being carried out. (Venter A and Landsberg C, 2006:137)

Since then several government programmes have been established. Integrated Development Planning, LandCare and Comprehensive Rural Development are some of the pioneering works that are contributions to reformation of government activities.

Local municipalities have commenced usage of "integrated development planning" as a process to plan potential development. Integrated Development Planning is a method of planning that entails the complete municipality and its participants in establishment of the optimal resolution to realize good long-term development. An Integrated Development Plan is a plan for a specific region that provides a detailed framework for expansion and development. It structures co-ordination of the work of local and other spheres of government in a logical manner which aims to establish a higher the quality of life for citizens. It accounts for the

present environment, problems and resources available for development. (Integrated Development Planning for Local Government, 2009)

LandCare is a community based initiative and government maintained advance to the sustainable management and usage of agricultural natural resources. The general objective of LandCare is to optimize efficiency and sustainability of natural resources to result in better production, food security, job creation and higher standard of living. (LandCare, 2007)

Comprehensive Rural Development is one of the highest precedence of government, designed at establishing sustainable rural communities throughout the country. This programme aims to comprehend social consistency and development in rural communities which is founded on three key supports:

- coordinated and incorporated general agrarian transformation
- an improved land reform programme
- strategic investments in economic and social infrastructure in rural areas.

The Department of Rural Development and Land Reform has secured the delivery of complete rural development on agrarian transformation, rural development and land reform. (Comprehensive Rural Development Programme (CRDP),2009)

Due to the past's disjointed authority one may quantify numerous factors associated with race and gender. Although the population of South Africa can no longer be officially distinct in accordance to race, government still functions and is arranged to deal with diverse race congregations. This structure disturbs the effort to construct a nonracial culture. At present it appears that this state of affairs will persist, but with government initiatives and programmes in conjunction with time the South African government will achieve the required results. (Venter A and Landsberg C, 2006:126)

The current tiers of government structure operate within the following structure:

National Government: The national sphere of government in South Africa is the national executive cabinet and its affiliated public service. In terms of the principle of division of government power, the cabinet and its public service determine statutory laws through Parliamentary processes. In addition the cabinet carries the duty to govern and manage the national affairs of the South African state. The National Government functions primarily involve:

"the maintenance and projection of the power of the state, and tend to reside as the national level of government, falling primarily within the spheres of Departments such as…economic might…to maintain and project its power, both within and across the borders…" (Venter A and Landsberg C, 2006: *82)*

Provincial Government: The constitutional negotiators of the early 1990s realized from the outset that vast regional disparities and underdevelopment confronted South Africa. These disparities were manifest in regional relative wealth; variations in resource or access to resources; developed infrastructure; administrative capacities and human demographics (population size and densities, age profiles, mortalities rates, education levels, poverty rates and gender divisions). (Venter A and Landsberg C, 2006:72)

The constitution vests the legislative authority of a province in the Provincial Legislatures. A provincial legislature had the power to legislate on any matter listed below and any matter that is reasonably necessary or incidental to the effective exercise of the powers. For convenience these are paraphrased from the originals in the Constitution in Table 1.1

Table 1.1: Provincial Legislature

Part A	Part B (Local government matters overseen by national and provincial government)
• Housing • Health Services • Population Development • Public works in respect of the needs of provincial government departments.	• Building Regulations • Municipal Planning • Storm water Management • Water and sanitation series, limited to potable water supply systems and domestic wastewater and sewage disposal

Adapted from: Government and Politics in the New South Africa, 2006:107

Local government: One of the greatest challenges that faced local government during the transition period after 1993 was to eradicate the legacy of apartheid-driven local government structures. Four major racial groups in South Africa were divided not only by law but also geographically and ultimately, in terms of the nature and standard of typical municipal services. The implementation of the pre-interim transition phase of transforming local government via the Local Government Transition Act (Act No. 209 of 1993) was therefore a daunting task.

The principal of protecting minority rights had to be honored. On the other hand, resentment and dissatisfaction created by decades of apartheid doctrine made negotiation challenging. Dogmatic approaches and the lack of negotiation skills further exacerbated the situation. Negotiators did not always embrace the inevitability of an ultimate full democracy based on 'one person one vote'. Another novelty was that civil society, as represented by a host of community-based and non-governmental organizations, could participate as part of the new culture of democratizing both state and society. (Local Government, 2009)

The objectives of local government are set out in Sections 152 of the Constitution. Interim models were developed as compromises and not necessarily as ideal ultimate solution.

The principals and objectives of local government are -

- to provide independent and accountable government for local communities;
- to ensure that of services to communities are provided in a sustainable manner;
- to encourage social and economic development;
- to encourage a safe and healthy environment; and
- to encourage the involvement of communities and community organizations in the matters of local government. (Local Government, 2009)

Municipality: the obligation of the municipalities to render services is mainly constrained by its limited financial resources. The need to involve the private sector is municipal services rendering is recognized in the White Paper on Local Government. (Venter A and Landsberg C, 2006:89)

The national government and provincial governments, by legislation and other dealings, must sustain and reinforce the capacity of municipalities to administer their dealings, implement their powers and to perform the necessary functions.

Draft publication of national or provincial legislation that affects the status and powers or functions of local government should be commented upon prior introduction to in Parliament or a provincial legislature. This procedure allows organized local government, municipalities and other entities a chance to present their suggestions regarding the draft legislation. (Municipality, 2009)

Establishment of Municipalities

The following are categories of municipality:

- Category A: comprises of a municipality that has exclusive municipal managerial and legislative authority in its area.
- Category B: comprises of a municipality that contributes to the municipal managerial and legislative authority in its area with a category C municipality within whose area it falls.
- Category C: comprises of a municipality that has municipal managerial and legislative authority in an area that includes more than one municipality. (Municipality, 2009)

National legislation classifies the different types of municipality that may be introduced within each category.

A municipality may compose and administer by-laws for successful management of the material which it has the right to administer.

South Africa is a constitutional democracy with a three-tier organization of government and an independent judiciary. The national, provincial and local levels of government all have legislative and executive authorities in their own matters, and are identified in the Constitution as "distinctive, interdependent and interrelated". Workings together at national and provincial levels are consultancies drawn from South Africa's traditional leaders. (Government in South Africa, 2010)

Policy implementation stage occurs when implementation or administration is put into practice after the bill becomes the law. Implementation covers actions necessary to carry a law into effect and apply to target population. (Adato M *et al*, 2005:200)

The Constitution presents for three segments of Government, specifically the executive, the legislature and the judiciary. The Constitution recognizes the doctrine of separation of powers by presenting a series of diverse mechanisms designed to distribute power between various segments and levels of government and to establish institutional checks and balances so as to prevent the abuse of state power. (Urmila Bhoola, 2002)

The executive is made up of the cabinet, national government departments, the provincial executives and the provincial departments. It is empowered to execute legislation, establish and execute policy, manage and direct the work of the government departments and structure and commence legislation. The national and provincial executives are responsible to the national legislature. (Urmila Bhoola, 2002)

The legislature is efficiently in the Parliament; the nine provinces also have thier own legislature. These ten legislatures operate independently and co-operatively within the framework provided by the Constitution. (Urmila Bhoola, 2002)

The legislature is comprised of two houses: the National Assembly and the National Council of Provinces. The National Assembly must consist of a maximum of 400 members and a minimum of 350 members of Parliament. The National Council of Provinces represents the nine provinces and guarantees that the provinces and local government have an influence in Parliament when laws are made. (Urmila Bhoola, 2002)

Understanding the government establishment allows one to have insight into the systems and procedures that govern South Africa the community forms and essential element of advance and improvement in developing areas.

1.9. Community Participation

Research of local communities has been a significant, continuous aspect in sociology. Studies have discovered a prosperous storage of facts regarding human conduct regarding social connection and participatory procedures. The ongoing significance of research is based in a macro-level framework that highlights social structures and cultural symbolic dimensions. A primary hypothesis of ecological approach is that social systems demonstrate that structural properties can be studied separately from personal characteristics of the individual members. (Sampson, 1988:4)

It is unexpected that contemporary research of social community relationships is focused on individuals rather then communities as a whole. The element of examination in this practice has been predominantly the individual such as individual sediments and psychological functioning. As a result, research has ignored two vital issues namely: the macro social determinants of community social structure and effect of the framework of community organization on individual behavior. The gap results in such correlation due to the sample survey of used in the research and the analysis thereof. (Sampson, 1988:4)

Participatory models serve as logical framework systems that require a structure of interrelated aspects which allow the user to monitor the processes, relationships and networking formed. Via participatory models one may realize various objectives of usage as well as research. Participatory models frequently provide a basis for evaluation for third party assessors that encourage reusability, availability of quality valuation as well as the ability to have an immediate effect on the outcome of repository searches. The challenge of developing efficient evaluation systems is difficult for the reason that they must optimize on two contrasting variables: the number of objects that can be evaluated versus the quality of the obtained evaluations. (Nesbit *et al***,** 2002)

Community participation research has become a popular subject amongst academics and various stakeholders over the past decades. Community research has been aiming to expand the participation of public and involved associations in concentrating on community-level issues related to health, education, provision of basic services and the like. However, regardless of these advancements, many communities still experience extensive difficulty in realizing their mutual objectives. Numerous community funders of partnerships and participation schemes are constantly reviewing new methodologies that will allow them to achieve more out of their investment. This predicament occurs due to the variety of

practitioners and researchers displaying interest in community collaboration and their origins from a diversity of backgrounds, initiatives, and academic disciplines, often researching or encountering aspects in practice or literature beyond their own domain. (Lasker and Weiss, 2006:14)

In the context of community participation, a community can be defined as:

> *…group of people who have common characteristics; communities can be defined by location, race, ethnicity, age occupation, interest in particular problems or outcomes, or other common bonds. Ideally, there should be available assets and resources, as well as collective discussion, decision making, and action.* (Colorado Department of Public Health and Environment, 2005)

Nabeel Hamdi presents a contrasting outlook on communities and states that they are not automatically cohesive and occasionally lack the *sense of community* and *social identity*. He clarifies that for community participatory projects, it is not essential to have a previously well structured community from the foundation but the sense of community can be accomplished during the path of the project, which can also be one of the goals of incorporating community participation in development projects. (McGill, 2009)

There is no obvious consensus as to what is implied by community participation, but a variety of definitions illustrating an ideological collection of interpretations. Aside from the perplexity with regards to an ideal definition there has been a steady movement in the attitude towards community participation. (Moser, 1990)

Previously, policy-makers accepted and studied notions of government failure and market failure but ignored the implications and risks of community related failure. The severity of community participation failure is illustrated profoundly in numerous unsuccessfully projects prior to its study and incorporation into the project cycle. The significance of community participation is currently extensively acknowledged, both theoretically and practically, indicating that proposed beneficiaries as well as local community organizations can, and do, play an important role in the conception, execution and management of developing projects. (Moser, 1990)

There are numerous ways of conduction the necessary community participation and establishing their involvement in the project.

1.10 Participatory Approaches

The traditional approach to collection of information for scientific purposes is usually interpreted as collections of interest with biases of authors or policy makers. The collection of data via the participatory approach is usually referenced for accuracy. By the completion of such procedures it is likely that all the stakeholders have voiced their opinion as opposed to one section of the participatory community being consulted. (Mbilinyi and Rayani, 1999)

The participatory approach displays focus on actions. Clarification of why participants should be involved in voicing opinions and what would improve their current situation. However it should be noted that consultation ‘fatigue’ is caused by lack of action occurring from participants’ contributions indicating that time consuming participation is unproductive. If the procedure displays success and action is satisfactory to the participants this often results in foundations being formed for long lasting relationships

among the stakeholders. These newly established relationships often reflect positively on confidence levels within the developing communities. (Mbilinyi and Rayani, 1999)

The key purpose of the participatory approach is the cycle of knowledge reflected from the participants and all the stakeholders, which is gained throughout the procedure. The participants in turn have great influence over what results they want to achieve. The source of the information generation and analysis maybe misinterpreted if taken out of the context of the basis of the community. (Mbilinyi and Rayani, 1999)

The various participatory approaches pertaining to this research will now be introduced and discussed in the South African context.

1.10.1. Participatory Rural Appraisal

Participatory rural appraisal (PRA) is an approach used by non-governmental organizations (NGOs) and other agencies involved in international development. The approach aims to incorporate the knowledge and opinions of rural people in the planning and management of development projects and programmes. (McCracken *et al*, 1988)

Top-down rural improvement policies in South Africa have commonly not been successful in elevating living standards amongst the disadvantaged communities. It has been disputed that inapt improvement strategies have resulted from procedures that do to realize the overall view in developing communities, and specifically overlook the local citizens' opinion, understanding and needs. PRA illustrates an important step towards the blueprint of methodologies and selection of these practices for evaluation. Numerous PRA methods reflect similarities to the field of research methodologies previously utilized by geographers for better understanding of people-environment relationships. A study in Eastern Cape Province, proposes that geographers may have a significant function in this area of applied research, predominantly in the framework of post-apartheid South Africa. (McCracken *et al*, 1988)

1.10.2. Rapid Rural Appraisal

RRA is more commonly described as a systematic but semi-structured activity out in the field by a multidisciplinary team and is designed to obtain new information and to formulate new hypotheses about rural life. A central characteristic of RRA is that its research teams are multidisciplinary. (Informed Leisure Practice, 2006)

1.10.3. Practical Group Action

Practical Action is an improvement charity. The charity focuses on developing communities and provision of higher standard of living or aid in the smallest of forms. Technological transfer is a central tool for improvement of quality of life specifically in the poorer congregations. Practical Action has a unique approach to improvement – the inception of development in communities does not begin with technology but rather on a personal level, by public and individual interaction. (Practical Action, 2010)

Practical Action specifically aids in reducing vulnerability in individuals which make the developing communities. Psychological aspects are of great important to the organization. The organization recognizes social factors that deal with circumstance in poorer communities and aids in strengthening vulnerabilities. (Practical Action, 2010)
Practical Action aids in reduction of defenselessness of underprivileged people affected by natural disasters, conflict and environmental degradation. It also aids poor communities sustain a higher standard of living – by facilitating producers to advance their production,

processing and marketing. It aids in establishing access to vital services – water, sanitation, housing and electricity. Practical Action also helps poorer communities in responding to the challenges of reception of new technologies, helping them to access effective technologies that can change lives forever. (Practical Action, 2010)

Understanding the communities' basic, physical and technical needs together with social requirements involves understanding their psychological drives and what leads them to making the choices that they do as well as the background development of their behavior and social conduct.

This research is grounded in rational choice theory together with the psychological aspects that support this theory. The theories and various approaches discussed in this dissertation comprise various backgrounds which indicate the foundation of the actions of the developing communities' referred to in this research. This rational choice theory aids the reader in understanding social discipline, social interaction and exchange aids in understanding the functionality of the community and the psychological aspects of their decision making. Collective action, understanding of norms and obligations aid the author in identifying rationale behind the behavior of the community.

The background of such components of the research will now be briefly discussed together with the direction of the research to follow.

1.11. Rational Choice Theory

Economics has been perceived as the most successful of the social sciences (Browning *et al*, 2000). It is implied that individuals are motivated by wealth and businesses by the opportunity of being profitable. This assumption allowed scientists to produce accepted models of individual and community behavior. These models guided other social scientists follow set trends and investigate this material in further analysis. The approach prospered through observations that if they adapted the processes accomplished in economics they could achieve related accomplishments in their own fields of study. Political scientists and sociologists have attempted to construct hypotheses around the suggestion that all action is primarily 'rational' in nature and that communities weigh up potential costs and benefits of any notion prior to action up on it. This assumption is now acknowledged as *rational choice theory*. (Browning *et al*, 2000)

Rational behavior of individuals regarding choice has been acknowledged by numerous sociologists: they have further observed rational dealings in conjunction with other forms of action, observing individuals' action concerning both rational and non-rational components. The observations of action identify conventional or routine action, emotive or efficient action, and numerous structures of value-oriented action in association with rational sort of behavior. Max Weber (1920) assembles a significant typology of action around the abovementioned notions. His thoughts are elaborated on by Talcott Parsons (1937) and developed into a sector of the conventional sociological concepts. Social anthropologists Bronislaw Malinowski (1922) and Marcel Mauss (1925) observe how social exchange is incorporated in the configuration of reciprocity and social responsibility. The factor that differentiates rational choice theory from other structures of theory is that it rejects existence of action other than the rational and quantitative. All action within a community can be perceived as rationally motivated, as influential action, although it might be defined as irrational or non-rational. (Browning *et al*, 2000)

A revolutionary in introducing *rational choice theory* to the field of sociology is George Homans (1961). Homans outlines a fundamental framework of exchange theory, which he bases on assumptions identified in behaviorist psychology. Although these psychological theories have been discarded by numerous further authors, Homans' establishment of exchange theory is preserved in the foundations of all succeeding discussions. During the 1960s and 1970s, Blau (1964), Coleman (1973), and Cook (1977) expanded and inflated Homans's framework; they facilitated in establishment of a more formal, statistical models of rational action. (Browning GK et al, 2000)

Rational choice theorists have developed increasingly in the statistical direction, converging more rapidly with developments in micro-economics. Numerous economists have been challenged to engage in elements occupied by other social scientists. The movement towards formal, mathematical models of rational action is evident in varied sectors, such as theories of voting and federation configuration in political science. (Browning *et al*, 2000)

This research proposes incorporation of the *rational choice theory* into the theory and practice of community participation and stakeholder analysis. Identification of key stakeholders and the possibility of influencing communities through education and exposure to various stages throughout the project cycle, aids in better understanding and policy implementation techniques that are integrated into community development. (Browning *et al*, 2000)

Over the decades advancement funding of such as the World Bank in Africa has established the failures of top-down approaches to development. The difficulty lies in establishing sustainable projects and finalization of decisions incorporating best interest of the community certified by professionals. Currently the provision of public goods continues to be low in developing nations.

Case studies highlight that it is essential that communities manage project initiatives, resources, decisions, and upstream planning. If information transfer was the only role in participation, it could be substituted by merely *asking and telling*, which would not involve a community to really contribute but rather state that its choices then be informed. Such aspects reflect that characteristically participation is always beneficial; however this is not empirically sustained. It remains that in most cases the final decisions and implementation resides with the professional team and consultants. (ETU, 2010)

Prospects for municipal contribution to development and decision-making, especially among underprivileged congregations, are limited in South Africa. This is the result of an exceedingly centralized, extremely dictatorial system of government, and the exclusive advance of expert planning. (Merle Sowman,1994: 557)

1.12. Participatory Model

Understanding management and information technology aids in improving each other in learning-based initiative such as participatory model-building. One of the most effective procedures for producing enhanced philosophies at a social level is the utilization of models as an aid to assist stakeholders in visualizing the wider social and bio-physical progression that they cannot see independently. Numerous forms of modeling can be utilized in such a way, and fundamental methodologies are referred to in diverse ways such as mediated modeling, conceptual modeling or participatory modeling. (Learning for Sustainability, 2009)

Community engagement is a continuing, demanding, and essential procedure for developing successful programs. The challenges are emphasized when the particular participatory subject or research matter is not apparent in the awareness of the targeted community. (Popline, 2009)

In this dissertation, the community-based participatory research model is studied as a means to negotiate a mutual agenda between communities, the government and academics.

The relationships in the participatory model will be discussed in detail in chapter three, illustrating their components and networking relationships with each other and various external factors.

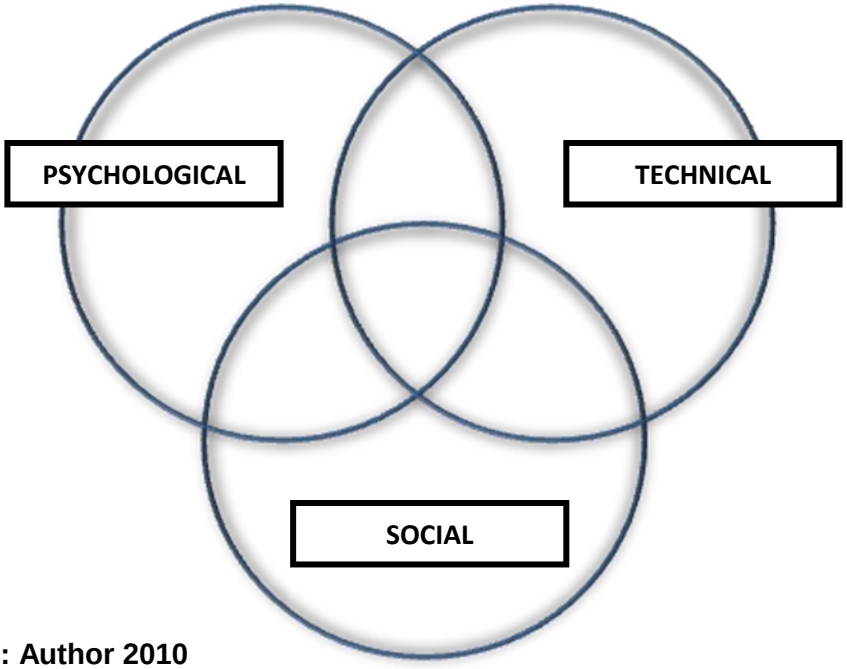
1.13. Limitations

Financial implications are not discussed in detail. The research focuses on the principals of project management and the typical way that projects are run, rather than selecting individual case studies. Geographical limitations (provincial/municipal; urban/rural, etc). Limited to technology transfer and participation in construction projects (ie, not health-care, crime prevention, etc)

1.14. Scope

The intersected area represents the focus of this research as well as literature supporting such discussions. Area of concern regarding the understanding of decisions and suggestions for the participatory model functionality, effects of technological transfer and policy implementation outcomes based on social levels of the community.

Figure 1.1: Spheres of Research



Source: Author 2010

The focus of this research lies in effective implementation of community participation at various stages of academic, government structure and community involvement. Each level of research includes the following social, technical and psychological aspects regarding the community and their development.

The author has chosen to research these specific groups to cover all aspects of the participation procedure streamlined throughout a typical participatory model to indicate the flow of the information necessary for technological transfer. It is also an essential part of the research to understand interaction of the various groups involved in participation procedure. The study of the three groups namely, the academic, government association as well as the community allows the author to see the prevailing problems experienced within each category of stakeholders. The areas within each group of the participatory model cover all aspects which may influence the participatory procedures.

1.15. Structure of Discourse

In Chapter One the topic of the discourse is introduced to the reader; giving the background information, the problem statement, hypothesis as well as the objectives of the study. The relevant literature is reviewed in Chapter Two, reviewing the rational choice theory, theories of rational theorists, discussion on community participation, South African legislation, framework and institutional capacity and technological aspects. Chapter Three outlines the methods of research used to obtain primary data to meet the objectives of the dissertation. In Chapter Four the results obtained from the questionnaires is discussed and analyzed in relation to the objectives and each other. A conclusion to this research and recommendations for further research are provided in Chapter Five. An alphabetical list of the references is included thereafter as well as appendices which present the questionnaires used in the study.

CHAPTER TWO – LITERATURE REVIEW

2.1. Chapter Outline

Chapter two covers three main sections that comprise the literature review for this study, namely, the psychological, social and technical aspects. These elements form the fundamental principals of community participation enhancement. It is important to discuss such elements ad they ensure successful delivery aspects involving communities in participatory projects. The principals are not mutually exclusive events but rather integrated and complement each other. These elements give depth and understanding of the decisions, areas of concern, insight.

In this chapter the author will discuss fundamentals of community consultation which allow one to understand the functionality and rationality of individual actions and their outcomes. The literature further discusses stakeholders.

Apart from the community one must understand importance in other stakeholder identification as well as their interest to ensure common goals are met. This allows the for better project design and functionality.

Community structure is discussed in detail. Understanding the resources within a community, namely the community's individuals regarding gender analysis and other heterogeneous characteristics allows the researcher to establish adequate consultation and methodology necessary for successful participatory outcome.

In order for projects to allow for sufficient resources to be included for community participation procedures it is important to have legal background knowledge regarding supporting Acts and other relevant legislature which governs such procedures.

To administer such legislation it is important to ensure that there is a functional framework and sufficient institutional capacity to carry out the necessary procedures within the relevant policies. Such aspects will be discussed in details to follow.

Mechanisms within the community are discussed, such as rational choices of the individual members which allow the professional structuring such participation process details to understanding what drives an individual within a community. The literature review gives a background of the originations of such theories such as *rational choice theory*.

Group dynamics allows the reader insight into functionality and drive of certain individuals and how such individual influence other group members.

Further to the above, technological transfer is discussed. This section provides the reader with insight to the most significant aspect of the participatory process for which one prepares the community to ensure the participation has a beneficial outcome. Examples to technological transfer action are discussed.

2.2. Introduction to Community Participation

For decades discussions regarding the literature on political theory about participatory and representative democracy as well as exploration of models and methods for community consultation and participation have triggered significant interests for academics, policy makers as well as other stakeholders. It was circumstantially necessary for stakeholders to concentrate on basic theoretical construction of the procedures.

A structure of theoretical functionality will be explored for understanding the conceptual foundation and the strategic suggestions for community participation. Particular aspects explored are functionality of official decision-making structures and at various tiers of the participation model. Questions such 'how is participation made possible?', 'who participates?' and 'what are the benefits and costs to participation?' are explored together with various externalities discussed in this chapter. (Wendy Sarkissian, 2002)

The various participatory approaches will now be discussed together with their functionality, purpose and implementation.

2.3. Participatory Approaches

Participatory approaches often act as lifelines for the authorities to gain inside data on the basis of lifestyle and the needs of the community. Participatory approaches act as tools to: obtain new information via previously established connections with data already identified, limit prejudice among the community members and the authorities regarding the needs of the community, establishing a vivid view of the situation within the community contradictory to the perceptions based on speculation, avoidance of standard action plan with no modification to suit the community needs, in-depth understanding of problem causes as well as felicitation of action that had broad ownership and accounts for numerous perspectives. (Mbilinyi and Rayani, 1999)

Participatory Rural Appraisal, Rapid Rural Appraisal as well as Practical Action are the chief elements of participatory process methodologies which will now be discussed in further detail.

2.3.1. Participatory Rural Appraisal

Robert Chambers established the term PRA, identifying the term as an approach to advancement planning and as a method of analysis of data that has evolved from numerous sources. Some of the sources can be adapted to be utilized in a participatory method, and the others were reviewed as they were used for investigation and planning. (Adebo, 2002)

PRA aids communities in mobilizing their human and natural resources**,** defining problems**,** identifying previous successes and failures**,** evaluating priorities and opportunities as well as in preparation of a methodical and site specific plan of action. (Adebo, 2002)

Past development plans focused on prospective area and capable community development. The function of development was to strengthen productivity on prospective areas with the introduction of new methods and expertise to focus efforts on limited segments and supply surplus to the markets. The experts seldom pay visits to prospective areas which are often

closer to the main road and urban locations, where contributions could be easily dispersed not clear what you are getting at. (Adebo, 2002)

It has been detected that the research and planning professionals often consult with men who are living in more improved conditions and do not consult women; they spend more time in discussions with more privileged groups as opposed to the poor. (Adebo, 2002)

PRA appreciates rural complexity and people heterogeneity. Farm structures comprise of several integrated components which are affected by seasons, for example for the duration of rainy season, the systems become productive and in the dry season crop cultivation is discontinue-the marginalized people that reply on meager resources and are neglected. PRA suggests that if opportunities presented then underprivileged communities can construct circumstance to transform their circumstances. External congregations should support them with their skills allowing the people to express their creativity. (Adebo, 2002:16)

Defects of Questionnaire Methods

Rural and urban conditions are examined by using questionnaires complied by experts. However the target population under analysis usually does not persuade survey procedures and is ignorant about what are the potential processes- this is due to the processes being controlled by professionals who are not incorporated with the community. The following are methods of integrated procedures for data collection. (Adebo, 2002:32)

Questionnaires Methods and PRA Methods

- Questionnaires prepared by researcher
- Checklist prepared by a team based on the questionnaire and requirements
- Enumerator conducts the interview - multidisciplinary team contribute and open discussion is held
- Closed questions are used and open ended themes followed by questions are discussed
- Fixed sample frame is identified for limited sampling
- Each informant is asked the same set of questions
- Guiding to discussion and visualization is set
- The same questions for all segments of population
- Triangulation is used to include all sources of information change such as men, women and others
- Researcher does not monitor the events
- Analysis is time consuming however it is it is on the spot investigation
- The process is unbiased allowing the informant to ask questions, have an open discussion in two way communication. (Adebo, 2002:32)

In the PRA system groups meet together and analyze the given situations. Discussion groups could be formed from intentionally elected individuals, or key informants of specialized groups in which case the congregation takes the lead in visualization and analysis of situations with limited interference and suggestions of experts. (Adebo, 2002:26)

2.3.2. Rapid Rural Appraisal

Rapid Rural Appraisal (RRA) is generally described as a methodical but semi-structured action in the field by a multidisciplinary team that is intended to acquire innovative data to prepare new hypotheses about rural life. A fundamental characteristic of RRA is that its research teams are multidisciplinary.

The difference between RRA and other research procedures depends upon its multidisciplinary approach and the meticulous amalgamation of tools that it utilizes. A foundation idea of RRA is that research should not be performed by individuals, but rather a team consisting of associates extracted from a diversity of suitable disciplines. Such teams are deliberately combined to include of members with technical backgrounds, social science skills, marketing research skills and other relevant contributors. This provides a multifaceted RRA research team where members provide expert opinion in various subjects of the project. The methods of RRA cater for but are not limited to the following:

- interview and question design techniques for individual, household and key informant interviews
- methods of cross-checking information from various sources, triangulation.
- sampling techniques that can be tailored to a specific purpose
- techniques of attaining quantitative data in a limited time frame
- group interview methods, including focus-group interviewing
- methods of direct observation at site level, and
- use of secondary data sources.

McCracken *et al* (1988) describe RRA as an approach for accomplishing action-oriented investigations in developing countries.

The function of RRA has been extensive with regard to rural development, such as in emergencies and disasters, non-formal education, health care, nutrition, agro forestry, natural resource evaluation, agricultural marketing as well as in sociology advancements. (Rapid Rural Appraisal, 2010)

2.3.3. Practical Action

Technological approach may consist of simple elements or more complex however the aid of the organization remains with provision of long-term improvement that is sustained in the hands of local communities: people who form technology and manage it for themselves. Practical Action currently implements over 100 projects worldwide. Furthermore the consultancy and educational efforts extend to reach the practical approach to tackling poverty. In 2006 to 2007, Practical Action helped over 664,000 people. (Practical Action, 2010)

The communities which are reached through this organization are dispersed internationally. It aims to demonstrate alternative methodologies to poverty alleviation, share knowledge and data of previous projects and influence change. The following are objectives of the Practical Action organization:

- To tackle the fundamental foundations of poverty by campaigning to influence policies, authorities and procedures. Through campaigning and encouragement, Practical Action aims to accomplish long-term impact from its work.
- The Technical Information Service and Practical Answers, aims to establish a method of accessing the knowledge of technical data possessed by Practical Action, this is accomplished through technical introductions or the resource centre.
- Lessons from Practical Action's grassroots expertise are also distributed and shared through consultancy services and publishing actions. (Practical Action, 2010)

Practical Action works directly in four regions of the developing world – Southern Africa, East Africa, Latin America, and South Asia, with particular concentration on Peru, Kenya, , Zimbabwe, Sudan, Bangladesh, Sri Lanka, and Nepal. In these countries, Practical Action works with poor communities to establish suitable technologies in food production, energy, transport, agro-processing, water and sanitation, shelter, climate change adaptation and disaster hazard assessments. (Practical Action, 2010)

PRA, Rapid Rural Appraisal and Practical Action all illustrate effective methodologies that reach out to the community's different needs and requirements as assessed. Engagement into close communication with the community allows the researcher to establish into the social structure and the informal relationships and influences amongst the community members as well as insight into the level of technological advancement the community is prepared for. It also allows the researcher to identify and assess problems and provide heterogeneous solutions to suit the consulted community.

2.4. Community Concept

To aid in completion of a successful and purposeful project in developing communities it is essential that community participants are incorporated into the project works and are given the opportunity to be empowered throughout the process. Development of a policy involving a community forces one to conceptualize 'the community' disregarding the heterogeneous characteristics which help one to identify with and communicate to the community requirements more personally to each individual within the community (Gregory A, 2003) 'The community' concept has developed into a challenge, as no community is one concurring and standardized set of people. Poor communities are generally more intricate and separated than rich communities. (Mohanty C, 2006)

A community of practice is not a simple network of associations between people. A community has a uniqueness defined by a mutual domain of interest. Association consequently entails a commitment to the domain, and therefore a mutual competence that differentiates members from other people. In pursuing community's interest in their domain, members peruse in common activities and discussions, and share data. Relationships are built that facilitate them in learning from each other. (Wenger, 2006)

Poorer communities often share numerous problems arising from the lack of basic necessities and resources to provide for such requirements. Such problems include the lack of infrastructure, health care, running water and sanitation, education and food. These are common problems in numerous underprivileged communities in various parts of the world. (Whiteis, 1992:409)

When reviewing health care in poorer communities one can point out common problems regarding financial assistance and education regarding preventing of diseases such as HIV. This indicates that although the members that make up the community are heterogeneous, on various instances they do have common problems such as HIV. The communities face challenges in terms of diminishing impact from the foundation of the problems initialized many years back. Although HIV is a disease of equality and effects humans' equality, whether you are rich or poor, the wealthier communities mitigate the spread of such disease via resources and education, (Gillespie,2008:1) although moderately rich and better educated men and women have higher rates of partner change because they have greater individual independence and spatial mobility. The wealthier and higher educated are likely to have better access to reproductive health care. (Gillespie,2008:2) Poverty and food uncertainty are a reflection of increasing sexual risk, predominantly amongst women who may engage in transactional sex to obtain food for them and their children. Women's financial reliance on their partners may also make it difficult for them to insist on safer sex (Gillespie,2008:2)

The common bond binding the community identified above in a mere example of the other problems experienced by the disadvantaged communities. This allows experts working within the community to identify the highest common problem within the community, identify the methodology needed to eradicate such problem.

This example clearly indicates the rift between the needs of the poorer communities and that of the wealthier ones. The requirement for needs and complexity of their structure varies vastly. While the poorer focus on basic needs the wealthier communities have more complex requirements pertaining to their wants rather then their needs. Luxuries vary enormously due to the tastes and requirements of wealthier individuals at a certain time. (Gillespie,2008:8)

The design of an integrated participatory approach for underprivileged local communities to conceptualize, plan, monitor and evaluate development should incorporate actions that involve in-depth community issues such as famine, healthcare facilities and other pressing factors. Such issues involve the character of communities and the significance of community segregation. This allows the researcher to filter out methodologies, communication methods and strategize towards a better participatory process. These issues influence associations the following:

- the framework of development involvement,
- and the value of participatory structure to establish a possibility of a diversified purpose and
- reproduction of participatory advancement, as well as,
- the directorial requirements to allow possibility of learning from participatory approaches. (Gregory A, 2008)

Through recognition the concept of community one gains insight into the integrated network of the community members and the underlying functions that form the basis of that community. It is imperative to identify and analyze the stakeholders prior to, or during, the participation procedure as the stakeholder is the key influence to the structure, direction and methods of participation.

2.5. Stakeholder Analysis

In a public administration framework, Enslin van Rooyen (2003:127) classifies a *stakeholder as*:

> *…a person or group of people, such as shareholders, employees, customers, creditors, suppliers, trade unions, government and the community, who have an interest in the operation and outcomes of the organization;."*

And further quotes Van der Walt and Knipe (1998:143) citing Paul (1987:2) in defining *community participation* as:

> *…an active process in which the clients, or those who will benefit, influence the direction and implementation of a development project aimed at improving the welfare of people in terms of income, personal growth, independence and other values regarded as valuable.*

Stakeholders are individuals or groups whose lives may be influenced by the actions implemented by an institute or an establishment. These individuals or communities may, via their actions, influence the plans and actions of such an establishment or institution and the realization of its objectives. The above definitions define stakeholders as essential participants who contribute to the realization of a specific set of objectives held by the community of which they are members. (Gregory A, 2003)

Consultation is an inherent political progression of the public claiming fundamental rights to manage the resources their lives depend on; predominantly, everyone should be involved. Managing the inherent complexity requires a process of comprehensive engagement and negotiation with a broad range of stakeholders and the conscious and strategic acknowledgement of their divergent values and interests, needs and expectations. (The Role of Stakeholders in Community Development, 2009)

A stakeholder is any individual, group or association that has an interest in an action, programme or project. This definition incorporates proposed beneficiaries and intermediaries, and individuals or association involved or excluded from decision-making processes; such as communities within a developing area, authorities, private businesses, researches and anyone directly or directly affected by the processes.

Stakeholders can be separated into two categories: those with an intermediary role referred to as secondary stakeholders; and those that are affected referred to as primary stakeholders, who anticipate to benefit from or be negatively affected by the aid provided.

The function of aid is to improve social and economic development and well-being of beneficiaries; meaning taking into account recipients' outlook on objectives and how they are best achieved. It is a matter both of principle and practice. The principle entails full involvement of the people in issues pertaining to them directly and the community in which they live. Sustainability and effectiveness strongly depend on the dedication of interested parties, namely the stakeholders. Thus participation is a central component in achieving project objectives. Participation contributes to the chances of the projects being more sustainable because:

- Involvement of broad range of interested parties, the prediction for a suitable project design and dedication to achieving objectives is maximized.
- People are more likely to be devoted to continuing the activity after project handover and are more able to do so provided that participation itself helps develop proficiency and self-confidence. (Social Development Department, 1995)

Valuation outcomes from the Institutional Strengthening and NGO Syntheses indicate that the most successful developments proved to be those where the project objectives were concurrent to the requirements of beneficiaries, and the beneficiaries were frequently involved in decision-making at all stages of the project cycle. Enhancing participation is a fundamental aspect of the project management cycle approach. (Social Development Department, 1995)

By focusing on stakeholder participation one aims to reinforce local ownership and aid in local activities such as technology adjustment programmes, teacher training projects or parastatal improvement, as much as community level projects. It also indicates helping institutional partners become more participatory and approachable to the other stakeholders, predominantly their clients. In such assistance one becomes more trustworthy and effective. (Social Development Department, 1995)

All areas of participation should aim to minimize the risk of project failure. However it is not assurance of project success. Achieving participation throughout the project is difficult. In any participatory activity there will be incompatible interests amongst the beneficiaries as well as amongst other stakeholders concerned with the project. Conflict may have significant costs in time implications. (Social Development Department, 1995)

The necessity for traditions of community participation and stakeholder negotiation to be reputable and institutionalized to the level where it will be observed not as an incident but a continuous progression in local government will now be discussed in conjunction with the structure of the community with regard to heterogeneous family framework and gender segregation. (Moser C, 1990)

It is questionable as to why stakeholder negotiation is accentuated where reference is exclusively made to community participation. Community is often seen as unit rather then individuals that make up the component. However importance of individuals is vital. Generally, the theory of community participation is used to describe an interactive advancement of reporting and consultation with communities. Yet, the direction to attaining true community participation is in the management of local government affairs and procedures of stakeholder negotiation, as opposed to mere reporting and consultation. Frequently, mediation needs to be entered into between various stakeholders to create appropriate policies and reach consensus. (Van Rooyen, 2003)

Communication with stakeholders is presently an action that is considered as crucial for the successful development projects in the South African private and public sectors. Currently most educational facilities that study entities' relationship with society, state that stakeholders act as important subject of analysis which can determine success of failure of the project. In accordance with Enslin van Rooyen 2003:129 stakeholders are characteristically defined as:

> *… individuals and groups that have an involvement or an investment in the company's decisions and in its social and economic exchanges.*

Public relations and development of communication systems in South Africa consider communities and stakeholders as main sources of communication and an essential factor in the contribution to the process of establishing successful long-term relationships, which leads to successful project outcome. Stakeholders should not simply settle for being inactive beneficiaries of information, it is imperative that interactive and appropriate discussion occurs.

Techniques for characterization and classification of stakeholders usually follow two broad approaches namely:

- top-down ‘‘systematic categorizations’’ and
- bottom-up ‘‘reconstructive methods’’ (Dryzek and Berejikian,1993)

The approaches aid in identification of the ‘usual suspects’ among the community; this may results in misrepresentation of various individuals in the community who are underestimated or overshadowed by the more dominant individuals. (Calton and Kurland, 1996; Grimble and Chan, 1995; Mac-Arthur, 1997). This directs concerns towards the vulnerable stakeholders being disregarded, such groups may form separate alliances to form considerable change when they oppose to an idea or feel defenseless against the conflicting views regarding the phenomenon under survey.

These systems are frequently used in the lack of direct stakeholder participation in the research and therefore may produce the prejudice views of the researchers opposed to the insight of the stakeholders themselves- this guides one to question the authenticity of these categorizations. Another approach known as ‘‘radical transactiveness’’ (Hart and Sharma, 2004) reverses this, focusing on initiating a two way discussion with stakeholders who would otherwise be referred to as peripheral. This characteristically includes participants who are inaccessible, underprivileged, fragile, secluded, uninterested, or non-legitimate, but whose views may be disruptive. (Mark S. Reed *et al*,2003:7)

Numerous projects focus on the *formal* stakeholders and relationships such as participation in community meetings, making community maps, contributing to the financial structure, construction of the intended project, etc. Frequently there is inadequate attention to the more essential *informal* procedures and relationships, including local power associations, patronage relationships between rich and poor, as well as petty fraud and discrimination. These issues should also be accounted for as various complications to participation continue to be concealed and disregarded. (Gregory A, 2003)

Often researches and authorities overlook the *informal* relationships and their potential contribution to the participatory processes. *Informal* relationships usually form stronger bonds based on trustworthy and personal experiences which support a more creditable reference as opposed to what the individuals are told from and unfamiliar source which they have to become accustomed to on a personal basis on fairly short notice. (Albert J Reiss Jr,1994:51)

Stakeholders are often synonymous with community participants as all the individuals within the participatory structure reply on certain beneficial result of the project. All parties utilize resources such as time and capital to progress in from the inception of the project objective to the desired milestone. All parties within the participatory process strive for a mutually beneficial usage of resources to elevate the communities’ aspect of living. However if one party does not perform to the level set to achieve in the standard of efficiency required in the project, the project outcome could be jeopardized. Stakeholders and community members are

dependent on each other throughout the project and it is important to maintain a good standing relationship.

It is important to understand the community structure to and define the community objective in order to achieve the desired result by professionals within the field.

2.6. Community Structure

Regardless of the purpose of participation, whether to accomplish project efficiency or empowerment, and regardless of the specific phase as which it is initiated, ultimately it is the subject of who is participating, and the ease of understanding of a project to the objective population which determines the degree to which 'participation' is really community participation. At the level policy, the inclination has been to conceptualize 'the community' in homogenous aspects, and to presume everybody is empowered, without explanation as to whether this refers to the particular or social assembly or characteristics of the local power structure. In urban areas where the community fluctuates in size from street block to neighborhood level depending on whether it is a 'bottom up' or 'top down' opinion of community this causes two specific problems.

Community participation is often more successful when it starts from the needs of the community, commencing from small locally situated groups who share the same needs.

A clear distribution of input is vital to minimize the risk of 'free riders' and clear individual benefits are essential, this encourages all individuals to participate putting forward suggestions and ideas. (Gregory A, 2003)

A main concern is representation in the framework of participation. All developments create systems of representation. Factors such as the whole community not being able to contribute throughout all stages of policy or project formulation, execution and valuation should be taken into account. In due course a community committee, platform or a forum begins to develop, following which the decision-makers initiate the key question with regard to representation and responsibility. (Gregory A, 2003)

Can the community representative be viewed as fully capable of representing the welfare of disadvantaged communities? Or should the NGOs function as representatives of the disadvantaged in a township in dealing with the locality administration? Concerns relate to the degree that community groups are democratic with just elections, and whether overriding interests can manifest themselves. (Gregory A, 2003)

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It is difficult to interpret community structure and the functionality of the community internally, it is usually misinterpreted due to time and budgetary constrains allocated to the preliminary study of possible participation techniques. Professionals, often due to time pressure review the community based on previous experiences, overlooking the heterogeneous qualities.

It is important to identify characteristics within the community from the inception of the project. Such characteristics may form the fundamental aspects of project success or failure. Various participants should not be overlooked and consulted during the project program.

2.7. Gender Analysis

Before starting a participatory program, it is imperative to be aware of the following:

- that the chief stakeholders are recognized, such as the wealthy and the underprivileged; explicit and buried factors with direct and indirect influence on the projects;
- stakeholder interests; and
- Ability of participants to influence the project agenda.

A stakeholder analysis is needed to identify such factors. A division is created between primary stakeholders, who are the targeted participants; secondary stakeholders, the intermediary participants; and the external stakeholders, people who are indirectly concerned but might impact or be impacted by an action. (Overseas Development Administration, 1995).

Although the division is often created between local leaders, neighborhood societies and political parties as the participants concerned in community participation, further disaggregation is less common. (Moser C,1990). Ideally, in conjunction with this, it is generally valuable to carry out a special gender analysis evaluating roles and needs, to assess the degree to which gender differentiation will influence the involvement of women, and thereafter to identify if additional consideration is necessary. (Gregory A, 2003)

Segregation may take place at the family level, which is sometimes used as a reference point when preparing a feasibility study for housing projects. These evaluations are commonly founded on the assumption that the male is the apex of the family in a typical domestic formation and the earnings of the male are relied on as main source of income, ignoring the escalating numbers of women headed families. (Moser C,1990)

It is important to ensure that the poor and marginalized: women; the elderly; the handicapped, are included in participatory procedure. Joop de Wit 2003, states that:

> *Southern Africa and South Asia have highly politicized local environments, frequently misunderstood as benign by many intervening agencies. Who is selected to participate*

> *in decision-making and what is deemed as important are political practices that create institutional 'glass walls' effectively excluding the poor from the decision process…*

Importance of community structure should not be overlooked prior to the participation process. Identification of key stakeholders on a personal level is vital to achieve successful communication and identification of needs. Experts dealing with communities should discard the typical family structure and adapt to aspects taking place within the community. Analysis of community structure aids one in project and budget planning and analysis, collection of data for future referencing and lessons learned and social development of the community. The governments involvement in this procedure is vital and requires professional resources and dedication of all stakeholders.

2.8. South African Legislation

Both the stakeholder negotiation process and and community participation process require extensive commitment, as opposing outlooks, requirements and expectations usually exist. As a result, it is imperative to appropriately identify legitimate stakeholders, to recognize the diverse variety of partnerships that form stakeholder elements within municipalities, and to determine where management liability and accountability are sited in local government interaction.

According to Enslin van Rooyen 2003 who quotes Spoelstra and Pienaar (1996), the theory of negotiation can be defined as:

> *…a process of interaction between parties directed towards reaching some form of agreement that will hold and which is based upon common interests, with the purpose of resolving conflict, despite widely dividing differences.*

Instead of seeking to aid disadvantaged communities to develop their social and environmental circumstances, the new community work activists urge that people take direct political action to demand changes and upgrading. (Moser C,1990)

In the South African Municipal Systems Act 32 of 2000, the word stakeholder is not used in relation to individuals or groups. The Systems Act simply uses the term community, and refers to community participation to summarize the engagement regarding individuals and groups within a community in association with local government and governance. (Municipal Systems Act, 2000)

Nevertheless, it is essential to recognize that simply activating superficial community participation may not initiate enough capacity for the accomplishment of developmental local government, particularly from a sustainability standpoint. Numerous community consultations also refer to the authoritarian procedures in developmental ventures which form an element of a bureaucratic configuration which can be viewed as obstructing elements in decision-making.

Historically, planning under the newly post-apartheid regime was a challenging and at times a despicable procedure. Attempting to benefit businesses by directing capital into paths where it was previously restricted is a difficult and time-consuming activity. The government was responsible for the infamous 'social engineering' along offensive boarders even when the procedures where viewed in rudimentary terms. A group of planning graduates from an Afrikaans medium programme would review the spatial proposal of the region; while others

qualified in English medium universities held posts at municipalities. Such aspects contributed to the current footprint of today's society. Modernism is an aspect which also contributed to today's functionality and structure of the authoritative system.

It is doubtful that we are currently undergoing a 'complete transformation of a country's planning system'. Initially political weakness resulted in planning difficulty and hindered the continuity of progression. Prior 1994 white authorities lacked powerful representation in the African National Congress (ANC). Ideas and notions had to be sold indirectly to politicians that were familiar with and more accustomed to international practice.

Politicians in the ANC became convinced that if they increase or decreased by a number of houses regardless of the condition or locality which they could provide free of charge adding to their planning component. Alternative planners leaned towards the notion of working in a democratic environment closely with communities. Community participation was challenging to sustain in the ANC governing territory.

The planners had to overcome the common perception against mass production social engineering through previous planning; revolution of apartheid policy took place from profiting of international planning trends, lessons learnt and implementation. Planners' hopes of the Reconstruction Development Programme (RDP) of 1994 initially were disregarded and overlooked. However later became the foundation of a powerful integrated planning policy. Their perseverance and professional credentials together with intensive research and adaptation from international sources became the basis of the principals for the potential policy formation.

The end result indicated that this procedure to legitimize the proceedings of any institution involved does not indicate the agreed interpretation of the joint venture and cooperation. (Ezinqoleni Community Participation Strategy, 2009:5*)*

Ezinqoleni Community Participation Strategy quotes Enslin van Rooyen 2003 who refers to the *Batho Pele*-principles as stated in the White Paper on Transforming Public Service Delivery (1997) which comprise the following:

"…consultation, access, information, redress, service standards, courtesy, openness and transparency and value for money…"

which imitate a paternalistic approach to development. To guarantee that the abovementioned aspects are complied with, communities are supposed to be rewarded with the prospect of expressing their outlook, which results in required intensive and thorough community participation in government affairs. (Van Rooyen, 2003)

Sustainable development through local government can only become a reality if amenities, capital and technological expertise are harnessed to ensure that all development is community focused. The development is given legitimacy because *It "…is about people participating in decision-making and implementation that will affect their position and their future…"* (Van Rooyen, 2003)

Co-operative negotiation is a style of engagement where winning or losing is immaterial. Opposing statements are discussed and transformed into mutual consensus. Continuous negotiation requires entering into a habitual connection between the parties. The relationship should be sustained throughout the negotiations and into the processes of the project and thereafter. (Van Rooyen, 2003)

South Africa has constitutional requirements and commitments towards its citizens. The government must provide amenities to communities in a sustainable way promote the involvement of communities and community organizations in matters of local government and encourage social and economic development. It also has the responsibility to fulfill the objectives stated in the preamble to the Constitution to "improve the quality if life of all citizens and free the potential of each person". Chiefly it must respect, promote and protect, fulfill the rights in the Bill of Rights. The most important of these rights for present purposes is the right to human dignity and the right to life; in light of the constitutional provisions, a municipality that expels people from their homes without first eloquently communicating with them conducts themselves in opposing to the principals and reasons of the constitutional requirements. (Royston and Tissington,2009:30)

The Constitution emphasizes the stage of involving communities in decision-making in Section 152, and the requirement for secure intergovernmental affairs and co-operative governance in local government. The Systems Act devotes Chapter 4 to community participation in local government. It affirms that local government should build up a tradition of community participation and metropolitan governance that balance official representative government and should promote and produce conditions for local communities to contribute to the relationships of the municipality with reference to the following:

(a) The groundwork, execution and evaluation of its integrated development plan,
(b) the organization, execution and evaluation of its performance management system,
(c) the preparation of its budget, as well as
(d) tactical assessments involving to the provision of municipal services. (Van Rooyen,2003)

The Systems Act identifies that instruments, procedures and developments for community participation should be established in every municipality. Provisions are specified in the Act concerning people who are not capable of proposing their explanation regarding any local government related matter as a consequence of their disability or disadvantaged disposition or if they are not able to write. Simultaneously with the above it is stated in section 22 that the Minister accountable for local government may control or propose strategies pertaining to community participation in municipal associations.(Van Rooyen,2003)

Municipal Managers are obligated in provisions of the Integrated Development Planning Guidelines proposed by the Department of Provincial and Local Government, to be influential in configuration of diverse community participation forums to aid in procedure of consultation for integrated development planning. (Van Rooyen,2003)

In the Integrated Development Planning procedure, a number of policy ethics on community participation are discussed. The IDP Guide Pack (Guide 1: 39) refers to the importance given to public participation by the White Paper on Local Government (1998). This Guide Pack states that the chief purpose of community participation is the promotion of local democracy. Local government is not only required to develop its own technique for the configuration of stakeholder participation as of the element that national or provincial policy. These policies

cannot stipulate facts of requirements for local specifics; it is projected to enthusiastically persuade and encourage participation, particularly in the case of disadvantaged groupings. (Van Rooyen,2003)

The White Paper on Local Government (1998) suggests dynamic community participation in local government by identifying the four levels via which the general public and community congregation may contribute to and influence municipal functioning:

- At the first level, voters are given the chance to contribute to a democratic progression by selecting nominees to represent them in local government associations. Voters must be guaranteed the maximum democratic responsibility of the elected political management for the procedures they are authorized to encourage.

- Thereafter, voters should have a chance to articulate, via different stakeholder relations and groupings, their outlook prior to, throughout and after process approval to guarantee that those procedures attend to community requirements as closely as achievable.

- At the third level, consumers and beneficiaries should be the receivers of value for money services.

- On the fourth level, community participants may contribute to local government associations as organized partners concerned in the recruitment of resources for progress via commercial firms, non-governmental organizations and community based associations.

To accomplish the aforementioned principles of community participation, both the IDP Guide Pack and the White Paper on Local Government (1998) call for widespread community participation procedures and arrangements in municipalities by advising on such aspects as organization of forums of planned formations mainly in the areas of forecasting and on specialized policies, with planned stakeholder participation in boards of council for committees to address spontaneous issues. Other aspects such as participatory process research focusing on specific groups and configuration of associations, chiefly for communities in marginalized areas, should be implemented. The above statements illustrate that participation should be a constant and controlled procedure and should focus on precise routes with specific results. (Van Rooyen,2003)

The choices regarding organization and supervision of the diverse mechanisms, development and procedures to reach efficient public participation are delegated to the individual municipalities. This allows for suitability to house local characteristics and avoids selection of isomorphic models of stakeholder participation. The fear sometimes exists that various municipalities may not be capable of employing an effective process of community participation. (Van Rooyen,2003)

During the period of November to December 2001, BCM selected ward committees combines of a Ward Councilor and ten members elected by the community. The function of the Ward Committees is to supply a link between Council and the community so as to increase community involvement in the governance procedures of the municipality. Ward Committees are qualified regarding matters such as understanding the ward and community, understanding local government and fundamental knowledge to facilitate participation and

meetings. Conversely, it has become evident that training about understanding municipal budgets and the budget process has been inadequate. It is difficult to evaluate the broad efficiency of Ward Committees as some of them perform exceptionally well while others participate only slightly. The wards that function well are likely to have a Ward Committee that is committed and diligent, however there are various cases where even if the Ward Committee is non operative, the community structures their own participatory procedures. The financial plan is presented to Ward Committees annually. It is simplified and translated into the local language; however it is still problematic to comprehend the technical terminology. Community participants still felt that they are not given the chance to provide a contribution towards the budget through the Ward Committee. The budget is reviewed at higher meetings such as the Budget Road Shows, however most of the contribution is from officials explaining the budget and the budget procedure opposed to getting actual participation from the community. Contribution that results from ward committees is usually mainly concerned with identifying needs and concerns that directly concerns a specific community opposed to questioning resource distribution per se. The municipality provides the community with an opportunity to state their concerns that notify the IDP which may have an influence on the budget; however it does not allow for efficient participation in potential resource allocation or profit generation assessments. (Yusuf, 2004)

Diverse democratic approaches with vastly divergent amalgamations of formal representative and participatory governance are instituted in various communities. In different municipalities different organization and methods acceptable by legislation, are in process. Community participation and stakeholder negotiations unavoidably vary in form and concentration between well-resourced metropolitan municipalities with a large group of experienced stakeholders and disadvantaged rural municipalities that are made up of a mainly unemployed and illiterate stakeholder group. In several cases participants were refused the right to partake in local government interaction as no minimum requirements were stipulated regarding this factor. Deficiency surfaces in policy information regarding community participation relating to procedure results which reflect uncertainty on behalf of most municipalities as they find it complex to establish appropriate procedures themselves. (Van Rooyen,2003)

The Policy Paper on Integrated Development Planning corresponds with the above view that a range of South African municipalities have encountered problems related to this in the past, but concern that policy documents stipulating meticulous systems in which stakeholder participation should be supervised, will not attend to these obstacles. Municipalities should rather be encourage to achieve compliance with the general principals laid down for community participation in the Systems Act but should *"…apply their own minds in developing contextually appropriate, and perhaps unique, ways of involving all segments of the municipality, and in building partnerships…"* (Van Rooyen,2003:30)

The Policy Paper (Van Rooyen,2003: 30) offers the following pointers towards efficient participation:

- Large meetings are not an efficient method of obtaining information from the community.

- Various creative techniques exist that may be valuable in achieving efficient community participation.

- Information technology can be utilized to network with communities and stakeholders. It is evident that access to these technologies is limited in areas with financial and literate constraints.

- Participation should be structured, as it may turn out to be prolonged and expensive. These cases can be observed in recently demarcated regions that are of large physical area or have a large and vastly diverse population. (Van Rooyen,2003: 30)

Municipalities should create traditions to institute practical working relationships with all stakeholders. These internal and external functioning relationships should maintain the following values:

- it should evolve outside of simple demands related to dispute politics and integrate a more concerned participatory role;

- it should account for special characteristics of local politics in South Africa; and

- it should be familiar with the fact that communities reveal distribution and opposing interests and not agreement and common purpose. (Van Rooyen,2003: 30)

Enslin van Rooyen quotes Coetzee, et al (2001: 479) in stating that authority arrangements and relationships are becoming progressively more significant in municipalities, however realizing absolute community participation is a complex procedure. Local stakeholders are usually inclined to control the power and are often averse to all-inclusive participation. Therefore it is essential that a meticulously brokered functioning relationship should be recognized between all stakeholders in local government.

South African legislation and practical approaches have flourished since the apartheid era. Revolutionary principals and planning methods derived from international procedures now form the foundation of all legislation which has been incorporated down to meticulous details into municipal procedures and everyday ethics. South Africa has broken out of the 'social engineering' procedures and into principals of sustainability. Appropriate legislation governs all aspect of community participation and is supported by IDP and Ward Committees within the municipalities to ensure guidelines are adhered to as closely as possible.

Although theoretically all aspects are covered, practice is far more difficult to achieve. Although numerous lessons have been learnt the following challenges remain: training and skill development in support of Ward Committees, social training in terms of dealing with diversity within the community, starting the budget drafting early enough to get meaningful participation, improving the monitoring and evaluation processes during activities, preventing people from using system for political gain as well as strengthening institutional capacity building.

Communication within the system allows for all subordinate systems of government to reach the community, establishment of wards opens channels of communication integration of ideas from the community to higher levels of authorities.

2.9. Framework and Institutional Capacity

Stabilizing institutional capacity is an essential factor in facilitation of development and encouragement of long term sustainability via empowerment through community participation.

Consultations with local organizations to provide recommendation and education on tactical planning, financial organization and progress reporting, board choice and maturity, institutional simplicity and responsibility, provides a collaboration model of practicable, qualified and clear organizations, and resources for other institutions. Local organizations embody welfare of their stakeholders more successfully, as a method of guaranteeing stabilization on national and regional policy; this builds institutional capacity which is supported through education and mentoring procedures. (Selective Adaptation and Institutional Capacity, 2006)

Benefactor supported participatory programs occur in the framework of projects or programs. However it would be more advantageous if local and national governments would develop institutionalized frameworks for participation. One needs to identify and prepare for the fact that projects and their expected benefits often develop into controversial subjects. Participants who are well allied, more influential and educated local stakeholders may profit more than others. For a notion to institutionalize education and a sustained optimistic approach there is a requirement for continuous supervision and assessment methods, to ensure that the procedures persist in providing what was initially anticipated, and that there is no prejudice or discrimination on who participates, such as the rich and literate only. This relates to current disputes involving impact possibility as well as rising indicators on participation and empowerment. External interference and interaction may interrupt community settlement when it translates into local perception and practice; the main issue being the distribution of benefits. (Gregory A, 2003)

As opposed to initiating a structure from a pre-given framework, it is more favorable to commence at a smaller scale, and expand the framework by learning through practical experiences of existing groups, and building on accomplishments and prospects. Participatory developments consider that the institutionalization of new government and municipal regulations and actions permit government officials to maintain them and to work towards sustainability. Continuation of consistent and conventional frameworks and legislation empowers the poor and social organizations to implement these structures. Community participation presently outlines a significant component of the South African government's policy on Integrated Development Planning (IDP) in local government. (Van Rooyen, 2003)

As municipal integrated development planning procedures are expanding and local economic advancement projects are in the course of being initiated, local communities should be given a possibility to contribute to the development and communicate their outlook and to prioritize their requests. A method of integrated communication with local stakeholders would result in discussions with conflicting attitudes, requirements and potential outcomes, and therefore negotiation should take place. Conversely in various cases negotiations may result in municipalities being ineffective due to their inability to plan effective meetings and setting of milestones ranging back to institutional capacity and lack of expertise in development planning procedures. However it is essential that communities are knowledgeable, aware and educated on the fundamentals of availability of resources that developmental local government could supply them with It must be noted that in reality resource limitations prevail and the majority of projects and resources available are approved on the base of precedence. (Van Rooyen, 2003)

Time, endurance, social proficiency and a listening stance from the technical staff and other facilitators of participatory community based advancement are mandatory. This associates to questions of capacity and the requirement for governmental progression, reorganization, human resource development and to the theory of the *'learning organization.'* It is questionable whether the collected feedback a sufficient source of guidance, and whether one acts on reports from programs and projects. It is stated that generally, the institutional reformation both within donors, governments and NGOs has the ability to accomplish such investigation. (Gregory A, 2003)

The importance of institutional capacity lies in the integration of professional contribution from different areas such as social, legal, technical and others to form the a corner stone of implementation of the participatory approach. Ability to administer projects and in procedures by measurements of milestones and achieving goals allows authorities to correctly allocate resources with minimum waste of funds and professional expertise. Creating a generic framework for participatory procedures would be ideal when using it as a work-breakdown structure as opposed to a solid path to obtain the objectives of the project.

Institutional capacity and framework structure together with collection of data for feedback aid in identification of areas that require attention as it is easy to identify in which areas are not performing to their required standard.

Based on the collection of facts, research and professional advice one can easily understand why various decisions are made at higher levels of authorities, however it is often difficult to rationalize an individual's behavior and reasoning for choice. The next section deals with psychological explanations for reasoning and choices made by individuals; this aids the reader in understanding community influences and importance of stakeholders.

2.10. Rational Choice Theory and Choices within Community Participation

Choice can be defined as the act or opportunity of selecting an option. An individual is accountable if they are open to thought and action to rational influence as well as honest correction; thus freedom and responsibility occur simultaneously. For freedom of choice to exist, alternatives should be present. Individuals and communities experience a sense of possession and responsibility towards the project freely selected (James III, 2000) Importance of understanding choice within community participation is vital. The potential of community choice determines project success or failure in the developing world. The attributes to this result lie in the consequences of community approval, support, mutual respect and consensus towards the chosen project. Together with the above-mentioned elements the community is reassured of various securities attained and displays precautions via provision of information that their choice is sustainable and achievable through their support. Community involvement allows development of skill for potential maintenance support. (James III, 2000)

Below the various choice theories will be explored in relation to community understanding and participation of reasoning behind choices made by individuals as well as the sources of sociology where such choices derived from.

An extensive portion of literature relates to in-depth examples concerning processes relating to community participation, meeting conduct and understanding what is required to reach progressive milestones within a given project. Majority of the literature published fails to address technological concerns as part of the psychological procedure relating to choice and

impacts in reception of technology within a developing community during and after the process. (Practical Action, 2010)

Practical Action works together with developing communities in countries such as East and South Africa, Latin America and South Asia, with particularly focusing on Bangladesh, Kenya, Nepal, Peru, Sri Lanka, Sudan and Zimbabwe; to aid creation of practical answers to poverty, by expanding on people's the technical skills and facilitate them in improving their quality of lives and that of future generations. (Practical Action, 2010)

Practical Action aspires to eliminate poverty in developing countries during the development and implementation of technology, by demonstrating outcomes, distributing understanding, knowledge and influencing others. The projects range on food processing and food production, shelter, small business development, transport, training, renewable energy, disaster management, communications technologies, water and sanitation, research and advocacy programmes. (Practical Action, 2010)

The Development Group for Alternative Policies's objective is to aid in the support of economic impartiality in the Third World countries, by aiding to take full advantage of control by poor communities and sectors over their own progression in the encounters of impositions from the North. It was established on the formation of sound development policies, programs and projects applicable to local requirements and environment. Development Group for Alternative Policies addresses policy implementation in Central Europe Latin America, the Caribbean, Africa, and Asia. (Development Gap, 2010)

The focus is on both: the active participation of structured civil society in economic training and on the responsibility of universal institutions which is predicated on the acknowledgment of existence of powerful interests that undermine local expansion development. The requirements of global corporations, foreign policy, and external proficiency have shaped objectives, trade, investment and debt policies, as well as economic-policy procedures agreed upon by the global financial institutions, that have principally ignored local-level needs, precedence and capability. (Development Gap, 2010)

2.10.1. Abraham Maslow

Abraham Maslow first introduced his concept of the "hierarchy of needs" in his 1943 in paper "*A Theory of Human Motivation",* which he consequently extended to incorporate his interpretation of humans' intrinsic inquisitiveness.

Maslow's Hierarchy of Needs

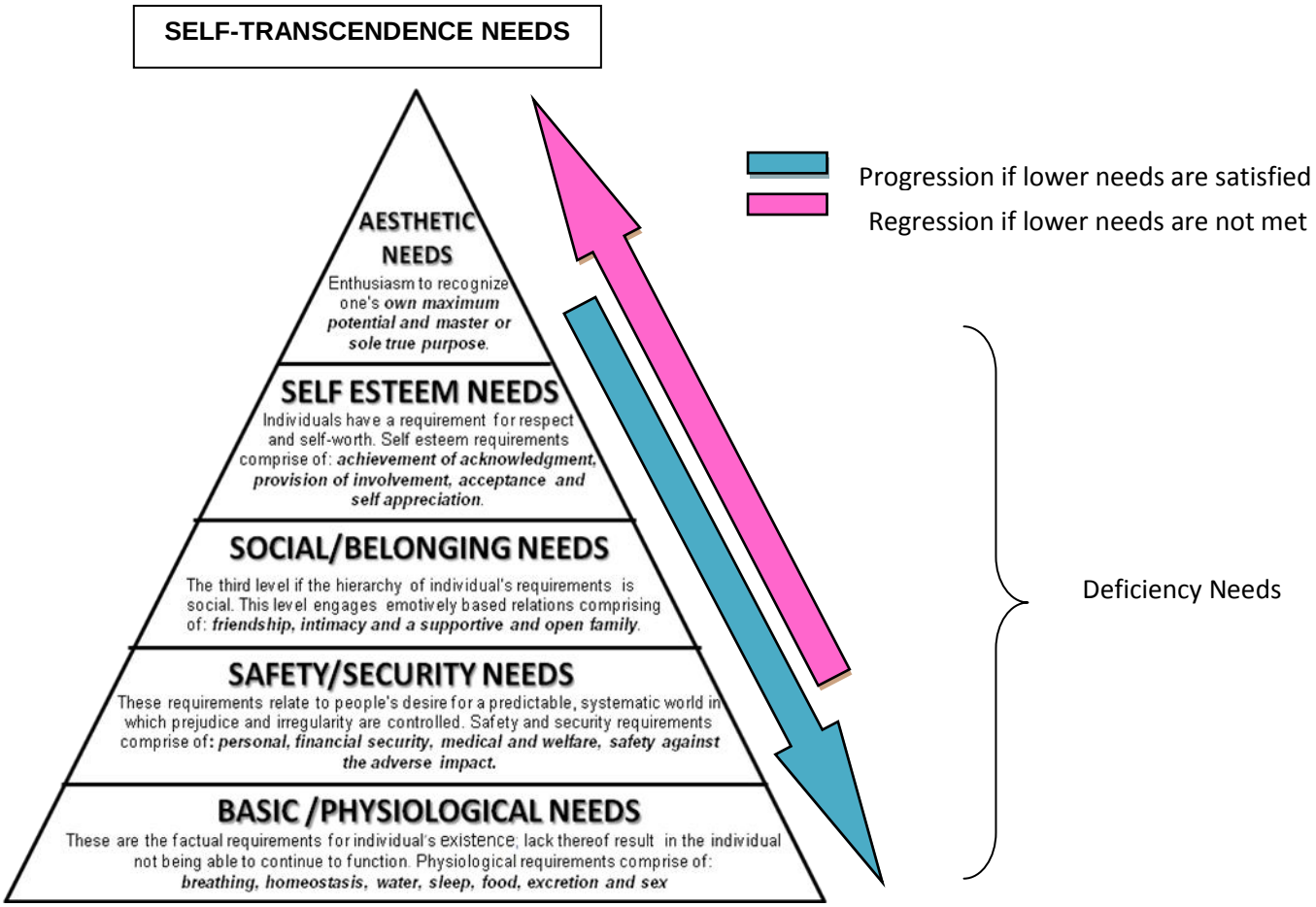
Maslow studied what he referred to as an ideal community comprising exemplary people such as Eleanor Roosevelt and Albert Einstein, as opposed to psychologically disturbed or neurotic people, quoting that:

> *…the study of crippled, stunted, immature, and unhealthy specimens can yield only a cripple psychology and a cripple philosophy.* (Passer, 2007:353)

Maslow's hierarchy of needs is determined in order of necessity of existence to the human race. It is commonly illustrated as a pyramid consisting of five levels: the lowest level is associated with physiological needs; the top levels are associated with psychological needs. Maslow believes that basic needs must be satisfied first. Once the basic needs are met, individuals search for to satisfaction of "acknowledgement needs" (Passer, 2007:353)

As a person escalates towards higher levels, needs in the lower levels no longer be prioritized. The individual momentarily re-prioritizes the lower needs by focusing his attention on the unfulfilled requirements; however not lastingly regressing to the lower level. (Passer, 2007:353)

Figure 2.1: Maslow's Hierarchy of Needs



Source: Author 2010

Deficiency needs

The bottom four layers of the pyramid are referred to by Maslow as *"deficiency needs"*. Excluding the physiological needs, if the deficiency needs are not reached, the individual reflects no physical sign but feels apprehensive and unsettled. These deficiency needs are: physiological, safety and security, love and belonging, and esteem. (Webspace, 2006)

Physiological Needs

Physiological requirements are evident. These are the physical requirements for individual's existence; lack of such requirements result in the individual not being able to continue to function. Physiological requirements comprise: breathing, homeostasis, water, sleep, food, excretion, sex.

Many developing communities lack the basic necessities that are required in everyday lives.

The choices of these necessities are obvious however the deliveries of such needs are questioned.

The difficulty of acquiring community trust and participation is achieved via the satisfaction of the security and reassurance requirements. (Webspace, 2006)

Safety Needs

Once individual's physical requirements are fulfilled, Maslow argues that the individual's security requirements occupy and govern their behavior. These requirements relate to people's desire for a predictable, systematic world in which prejudice and irregularity are controlled.

Physiological and safety requirements are substantially fulfilled in the first world countries, with understandable exceptions of people external to the majority, namely the poor and the disadvantaged. Aggravation occurs when people's progression towards the safety needs results in indifference. These communities are initially troubled with survival: attaining sufficient food, clothing, shelter, and searching for independence from the governing public association; in ways of voicing their opinions and accomplishing a sustainable existence within the community. Safety and security requirements comprise of: personal, financial security, medical and welfare, and safety. (Passer, 2007:354)

Social Needs

Following the fulfillment of physiological and safety needs, the third level if the hierarchy of individual's requirements is social. At this level, Maslow's hierarchy engages with emotively based relations comprising: friendship, intimacy and a supportive and open family relationships. Individuals want to experience a sense of belonging and recognition, the source of which may be a large social group, such as an association, religious assembly, professional organizations, or small social connections such as family members, mentors, close colleagues and confidants. In the absence of such elements, many people become inclined to solitude and social apprehension. (Passer, 2007:354)

Esteem Needs

All individuals have a need for respect and self-worth, and to respect others. Communities need to achieve acknowledgment and include activities that give those individuals a feeling of involvement, acceptance and self appreciation. Inequality at this level may result in low self-esteem or an inferiority complex. (Passer, 2007:354)

Abraham *et al*, 2002, refer to a cross-sectional analysis which observes the relationship between self-esteem and community participation, alleged stigma and social sustainability amongst a sample of residents. Results from such studies indicated that moderately high levels of community participation and self-esteem. Self-esteem was negatively correlated with stigma and a sub-group with high apprehension concerning meeting outsiders was recognized. High social support was identified for staff going out with respondents and practical assistance from liked people and friends -informal stakeholder relationships as previously discussed. (Abraham, 2002:430-443)

Self-esteem can be discovered in various forms from simple community participation and age differences found in underprivileged communities (Abraham, 2002:430-443) to aesthetic reasons.

A project called the "Community Closet" for donation work clothes to women was carried out in various areas of North America which established positive correlation regarding the women's

self esteems. All the women interviewed after the reception of their new work clothes believed that the clothes could be a path to a better job, a better standard of living and a better sense of self. Women's attitudes changed immediately. (Sampson, 2001)

Aesthetic Needs

Maslow believes that the enthusiasm to recognize one's own maximum potential is believed to be the master purpose to reaching one's fulfillment or the sole true purpose. In Maslow's hierarchy of needs, the requirement for self-actualization is the ultimate necessity that becomes important when lower level requirements are fulfilled. (Passer, 2007:354)

Self-transcendence

Towards the end of Maslow's life he discovered a point on the hierarchy that exceeded self-actualization: self-transcendence.

> *"[Transcenders] may be said to be much more often aware of the realm of Being (B-realm and B-cognition), to be living at the level of Being… to have unitized consciousness and "plateau experience" (serene and contemplative B-cognitions rather than climactic ones) … and to have or to have had peak experience (mystic, sacral, ecstatic) with illuminations or insights. Analysis of reality or cognitions which changed their view of the world and of themselves, perhaps occasionally, perhaps as a usual thing…."* (Rare Leadership, 2009)

It is essential that the professional project team assesses the level of the hierarchy the community participation of project is delivering at. Each level has different needs and therefore different approaches should be used by the professional team. Professionals need to understand at which level technological transfer takes place to aid in the process accordingly to community requirements and level of understanding. Technological transfer takes places in all of the above tiers of the model. Basic needs can be covered by supply of water and sanitation, leading to a better health care system and a better standard of living, allowing one to feel empowered by new technology, the aid in putting in learning to establish and maintain such technology can also lead to higher levels of the hierarchy where one could realize their potential of establishing their own business by aiding the authorities in giving more community members similar practical technological experiences.

2.10.2. Feyder Dostoyevsky

Dostoyevsky's theory vs. Maslow's beliefs

As discussed above, Maslow advised that an individual lacking food, love, and self esteem would most likely desire food most. Conversely, Dostoyevsky analyzed this subject in a completely different manner. He believed that without a solid idea of himself and without reasoning for one's existence, an individual cannot survive even if surrounded with bread.

Concurrent Views

Dostoyevsky highlights a valid aspect, that a good life is more attractive than just food. One cannot see themselves surrounded by bread with no potential insight as to how to proceed in next in life. Individuals experience insecurity and uncertainty and which results in psychological impacts if their paths are ambiguous and unstable. Developing communities require psychological security when choosing large improvement projects. They put their

hopes into a higher standard of living for themselves and their families and put their trust into authorities and professional to provide them with an opportunity of a secure future. The community places their trust in professional bodies that their basic needs will met, however their security and acknowledgement needs are satisfied first.

Both Maslow and Dostoyevsky, provide partial understanding of the nature of choice which we, as professionals, cannot impose on communities as a whole as different individuals comprise of different needs. Some may tend more to the Maslow model, while other communities or individuals within them may tend to the Dostoyevskian. Maslow's research is to be literally perceived: without the basic necessities man cannot survive.

Weber's outlook of modernity presumes a theoretical anthropology that originates from a German idealist custom. Apart from identifying human nature and incentive in terms of the hedonist materialist psychology of the functional custom, Weber states that humans have a "metaphysical need for a meaningful cosmos" (1946:281).

The necessity of meaning originates from the universal state of the understanding of senselessness. "All religions have demanded as a specific presupposition that the course of the world be somehow meaningful" (1946:353). Individuals should make sense of those incidents which illustrate to be profound; religion details theodicies and understandings of life which clarify the extraordinary and justify the routine orders of on a daily basis.

Modernity, Weber says, is characterized by the phenomenon of a religio-cosmological world vision by a secular one. The secular world vision is what Weber sometimes refers to as the "cosmos of natural causality" is adversative to the religious hypothesis of a meaningful cosmos. "In principle the empirical as well as the mathematically oriented view of the world develops refutations of every intellectual approach which in any way asks for a 'meaning' of inner, worldly occurrences" (1946:351). Since Weber interprets the experience of senselessness as an enduring existential predicament, the requirement for meaning perseveres in the modern world.

Therefore the question occurs: so far as science cannot communicate the requirements for a significant cosmos, and religion no longer possesses its cognitive domination, how does the individual pursue life with significance and purpose. Weber concludes that the modern individual encounters an existential predicament unknown in its concentration and clarity to previous era: the problem of meaning. (Seidman, 1983: 267)

Individuals' direction in life most important, striving for a better life rewards individuals and communities with sustainable development and potential growth in all areas of life.

Referencing Sverko and Vizek-Vidovis (1995:9), professional and managerial dedication also occurs as a consequence of the relationship between an employee and situational variables such as job descriptions pertinent to intrinsic motivation, social climate in ergonomics, participation in assessments and position in the organizational hierarchy.

A situational variable that controls organizational commitment and creates important work where people excel can be demonstrated as follows: if the social climate at work is subject to interpersonal conflicts, it may be result in difficulty for an individual employee to be dedicated to the organization. However if the work place is distinguished by good relationships between employees and management, this might result in more organizational commitment from

employees. It is clear that various factors can influence professional satisfaction in the working environment. Professionals move in the direction of Maslow's theory trying to achieve higher levels of hierarchy. (Webspace, 2006)

It is important to recognize the communities' needs and satisfy them with regards to self realization and encourage individuals to be directed towards a more fulfilling life. Once an individual in a community is exposed to options they have not been able to encounter previously, even if the options are not available at the time, the individual can propose the option to the community and authorities at later stages of that particular project or if the opportunity arises in another potential project. An example would be the option of photovoltaics being incorporated into RDP housing

Another important aspect to recognize when interacting with the community is the size of the group; the number of individuals involved in the participation procedure has a social and psychological impact on the individuals' interaction and will now be discussed further.

2.11. Choice Set Size

Choice size is the number of choices one has to choose from. Numerous of research studies in economic psychology have concentrated on how an individual's behaves when differs when the choice set size is low as opposed to when it is high. Specific interest was focused on whether individuals are more likely to purchase a product from a large as opposed to a small choice set. At present the outcome of choice set size on the probability of a purchase is unclear to researches. In various cases large choice set sizes discourages individuals from making a choice and in other cases it either encourages them or has no implication.

Unambiguous evidence exists that while larger choice sets have prospects to improve an individual's standard of living, there is such an aspect as too much choice. On the one hand one assumes that studying a greater number of choices results in a cognitive burden on the individual. The other one assumes that individuals will endure regret if they make a suboptimal choice, and sometimes avoid making a choice to avoid experiencing regret.

Individual's character has an important role in how individuals interpret large choice set sizes. Psychologists have developed a personality test that identifies where an individual lies on the satisficer-maximizer spectrum. A maximizer is an individual who always looks for the optimum option from a choice set, and may torment himself after the choice is made as to whether it was indeed the optimum choice. Satisficers set have high expectations but are satisfied with a good choice, and place less emphasis on making the best choice. (Arunachalam *et al*,2009)

Researchers have paid attention to how individual behavior varies when the choice set size is low as opposed to high. Community participants are more likely to select the most sustainable project from a big versus a little choice set. Wide choice set sizes may dishearten the community from making a choice and in other instances it may encourage them or have no effect. (Passer, 2007:480)

Unequivocal data exists that although wider choice has the potential to develop a person's welfare; a wider choice allows an individual to acquire knowledge of more options of availability and therefore acquire a wider education on the subject; there is an argument for too much choice. An effort to explain why choice can be a discouraging factor for a community focuses on two factors: that inspecting a larger number of choices require a cognitive burden on the individual and the community; while the other presumes that individuals and the

community can end up regretting their choice if they make it too suddenly, and at times evade making a choice to avoid regret. (Passer, 2007:480)

Within a community individual character plays an important role in how individuals react to large choice set sizes. Psychologists have developed a personality test that concludes where an individual character stands on the satisficer-maximizer spectrum. A maximizer is an individual that searches for the very best selection from a choice set, and may torment themselves after the selection was completed as to whether their choice was the best. Satisfiers place high values but are satisfied with a good choice, and set less precedence on making the best choice. (James III, 2000)

The importance of formulating a correct choice set results in community selection of projects within the given budgets and attainable outcomes established by the municipality. The selection and education of alternative choices results in community and individuals being able to indentify and communicate the unused choices to potential projects. The community in turn becomes accustomed to the available resources provided by the government within a given budget. (Passer, 2007:481)

The above theories act as a basis for the rational choice theory which was later developed. In this instance the *rational choice theory* is adapted to relate to community participative environment previously discussed in this chapter. (Browning, 2000)

Communities choices discussed are derived from the choices generated from options within the participatory processes narrowed down by the professionals' guidance through the study of such options; opposed to a wide range which the professionals are initially presented with.

2.12. Rational Choice Theory

It is widely accepted that economics is the most rational sector of the social sciences. The hypothesis that governments are motivated by establishing self sustained projects together with the possible prospects of making a profit, or in the case of developing communities a break-even, has permitted the discipline to create a formal, and frequently prognostic, models of human conduct. (Browning, 2000)

Community participation requires a skillful manner of conduct and understanding for such a process to achieve the best possible outcomes. The level of forecasting communities' behavior can aid in prediction of the outcome, simultaneously reducing risk and other potential problems of such participation. This procedure is recognized as *rational choice theory*, and its significance to community communication is illustrated in the form of *exchange theory*. (Browning, 2000)

2.13. Psychological Basis

The concept of *'rational action'* has been commonly understood to entail a conscious social factor which is incorporated into premeditated calculative tactics. Homans stated that human behavior resembles animal behavior, which is not liberal but can be forecasted. Behavior is produced by the remuneration and penalties encountered. Communities' actions strive towards rewards and circumvent actions that can be considered accountable for in terms of punishment. Strengthening of rules via rewards and punishments is officially termed *'conditioning'* and it is the formation dynamic in human behavior. This behavior can be observed in solely exterior and objective terms; it is not necessary to involve any internal psychological conditions. Individuals and communities learn from previous circumstances and encounters, from this knowledge their behaviors can be analyzed and explained. (Browning, 2000)

The behavior of the selected community may be predetermined by observing the rewards and

punishment that the communities may feel they will encounter on a specific project. The term 'punishment' should be defined as 'imposing of penalty' in the context of community participation. Communities impose their own punishment with regards to incorrect choices of the project as they will not be supplied with the correct resources to upgrade their standards of living and lifestyles. If incorrect resources are supplied, there could be loss of respect for the project and the benefactors that sponsor the project.

Scott (2000), stated that the popularity of Homans's psychology was in his defining of behaviorism, established from his study of pigeons and correlating it to human behavior. He argued that food is an essential purpose required by animals. Animal conduct could be controlled by the giving or withholding the basic necessity, food. Food is a remuneration that emphasizes specific inclinations regarding behavior. Although individuals are motivated by an extensive variety of goals, the theory applied can still be applied. Whilst pigeons will do anything for food, humans are more prone to search for appreciation, acknowledgment, love, and capital. Human perception and aptitude is identified as far as one allows the possibility to expand on these symbolic rewards. Homans did not distinguish this as concerning any elementary factors in the way that their behavior is to be explained. The quality of the rewards and punishments may vary, but the processes are equivalent. (Scott, 2000)

In social communication, individuals are concerned with reciprocal reinforcement. Every participant's behavior remunerates or penalizes other participants, and their combined behavior expands through this 'exchange' of remunerating or penalizing behaviors. All individuals within a community are interdependent and co-exist. (Scott, 2000)

Any behavior can, theoretically, support the behavior of another; Homans believed that *approval* is the most essential individual goal. Approval is a 'comprehensive reinforcement' that can support an extensive assortment of particular conduct. As a consequence of its widespread nature, Homans observed approval as directly corresponding to monetary values. Both money and approval are common modes of exchange in social relations, one in monetary exchange and the other in community exchange. (Scott, 2000)

Not all rational choice authors have observed behavioral psychology in such a manner. Many continue to express doubts regarding the critical determinants of human action. Subsequent to the examples of many economists, behavioral theorists began to construct of rationally coherent, predictive hypotheses of human action. Individuals operate *as if* they were fully rational and, therefore, reasonableness can be stated as an uncomplicated inception point. It is not necessary to investigate individual psychology further: whatever psychology may state regarding incentive, it does not influence the fact that social relations and exchange development can be understood as though all individuals were solely rational actors. This dispute is acceptable if an extreme positivist analysis of knowledge is implemented, and most realists would expect to find attention given to the psychological foundation of motivation and to challenges that test the competence of particular psychological assumptions. (Scott, 2000)

2.14. Social Interaction as Social Exchange

Subsequent to the economic model, rational choice theorists perceive social interaction as a method of social exchange. Exchange occurs between academics, government officials and the community and its individuals; such action entails exchange of ideas, techniques and methods. Economic action entails an exchange of goods or services; social relations entail the exchange of approval and certain other valued behaviors. To highlight the comparison with

economic action, rewards and punishments in social exchange have commonly been referred to as rewards and costs, with action being provoked by a search for a 'profitable' equilibrium of rewards over costs such that communities are willing to put the time and effort into projects via participation. A range of actions that an individual might do regarding their opportunities may differ in their costs, but they also differ in their rewards. There is usually a simultaneous combination of monetary and non-monetary rewards and costs. However it is difficult to realize opportunity costs that one might forego when participating in the project. A more detailed discussion takes place later in this chapter. (Scott, 2000)

The incentive received from government grants, might incorporate the intrinsic satisfactions that can be achieved from their utilization and the social appreciation that is obtained from their status. The same activity also incurs costs. Maintenance and deterioration of benefits previously obtained reinstate the disadvantaged community into their previous standard of living if no maintenance takes place. The power of reinforcement is calculated by its magnitude and its worth. The greater the amount of benefits one receives in monetary value, the more rewarded one is likely to feel. However an individual or a community receiving a project which did not involve their participation is less likely to have appreciation value. The magnitude and worth of social approval is not quantified as easily and is less likely to have monetary counterpart. (Scott, 2000)

It is often difficult if not impossible to assign a monetary value to certain benefits; however in some cases it is possible to quantify a benefit with a normal measurement unit such as statistics for crime rates, or awareness levels. Cost-effectiveness investigation entails calculating costs of generation units of benefit and various programmes which in turn be judged against another priority given to the alternative with the lowest cost per unit of outcome generated (Byford, McDaid and Sefton 2003, 12). Fields (1994, 112) states that "cost-effectiveness analysis, in other words, takes the objective as given, then costs out the various ways of attaining that objective". Byford, McDaid and Sefton (2003, 12) recapitulate the problems with cost effectiveness analysis: "Comparisons of cost-effectiveness using natural units can be made only between interventions whose outcomes can be measured on the same scale. Thus, CEA might be used to support funding decisions between two competing schemes for reducing, say, crime, but it cannot determine whether the same money would be better spent on a scheme to provide subsidized child care. Second, it is difficult to capture all possible effects of an intervention on a single outcome scale that measures change only in one area of an individual's life". (The True Costs of Public Participation, 2005:66-67)

Social exchange theories, regarding the above-mentioned issue exist merely because we have not yet established adequate methods for computing it. (Scott, 2000)

Many rational choice theorists do not consider the calculation as the problem, as it can be handled in a similar way as the intangible satisfactions that individuals obtain from the items that they purchase or sell with money, such as goodwill and consequential loss settlement. The value of reward is the 'utility' that it has for an individual. This personal utility differs significantly from one individual to another however; economists have some quite simple ways of attaching monetary equivalents to these as part of basic supply and demand theory. Community utility in developing areas usually results from satisfaction of the basic needs according to Maslow’s hierarchy previously discussed. However it is possible to assemble preference curves that compute the *relative* utility of one subject against another and in turn the likelihood that communities will select various objects. (Scott, 2000)

Rational choice theorists identify that a *threat* of punishment or a *promise* of a reward may encourage individuals as much as the punishment or the reward itself. The threat of punishment may determine suitable behavior from those who wish to avoid the punishment. This assumption permitted Homans to identify the encouraging accountability of threats and incentive in the charactering individual behavior. (Scott, 2000)

The profit that an individual obtains through interaction is calculated by the rewards received deducting the costs incurred. Scott (2000)adds that Homans believes that 'no exchange continues unless both parties are making a profit' (Homans 1961: 61) meaning that unless each contributor finds the interaction beneficial, the communication will not persist. Communities are discouraged, losing interest and focus in the participation procedure, when the process is lengthy and drawn out. The individuals experiencing 'losses' in interaction which outweighs the rewards will encounter an incentive to withdraw from the procedure of participation. A sustained social association resides upon equilibrium of mutual profitability. Participants in social relations connect in numerous rewards and costs procedures and the communication will persist in a stable manner only if all participants profit. Individuals experiencing a loss will depart and will seek alternative communications. Departing individuals will result in loss of cohesiveness in the community structure. The key stakeholders' departure from the community can be detrimental to the participation process. (Scott, 2000)

If communities are capable of obtaining a specific goal solely through an individual social relationship, they become vastly reliant on that specific relationship and in turn will have diminutive strength to manipulate the 'price'. Government projects can solely be influenced by communities as well as their method of implementation-such as enthusiasm form the community o participate physically in establishment of infrastructure in their area-but the choices of the projects lie in the hands of the community. This illustrates the reality that a monopoly in the form of the government provider is capable of exercising its market power to dominate the outcome of the decision. Social exchange systems resemble economic markets ranging from the abovementioned monopoly situation through diverse types of oligopoly and imperfect competition, to the fully competitive. Such relationships manifest themselves in all communities; the scale and power of manipulation however is heterogeneous. (Scott, 2000)

2.15. Social Exchange Disputes

Collective action, social norms, and social structure are the three inter-linked factors that have struggled to demonstrate theories of rational action as universal theories of social action. Problems resulting from the above mentioned concepts have given rise to the dispute about whether an appropriate solution exists to surpass the limitations the rational choice theory, or whether to discard it. (Scott, 2000)

The difficulty regarding social configuration lies in establishing the possibility for a distinctive theory to clarify and take proper account of the existence of larger structures. Particularly, it is questioned whether there are social configurations that cannot be simplified to actions of the specific individual and that, consequently, have to be explained in different terms. (Scott, 2000)

2.16. Group Dynamics

Much of human behavior occurs in groups. People often form groups to share interests and activities and to perform tasks and achieve goals that are too complex or demanding to be accomplished by one person. (Passer *et al,* 2005:631-634)

Social Loafing

Passer, 2005 reviews Ringelman (1913) who established the idea of "social loafing" presenting the theory that the tendency for people to expend less individual effort when working as a group as opposed to work being carried out individually, representing collective performance. Social loafing also occurs in cognitive tasks when a group of individuals are required to perform and evaluation or make a decision. (Passer *et al,* 2005:631-634)

Passer, 2005 states that the social loafing model is more likely to occur during the following instances:

- an individual believes that performance within a group is not being monitored,
- the goal or the groups has less value or meaning to the person,
- the individual displays low motivation and expects other to make all the effort

Social loafing also pertains to gender and culture. It often occurs in male dominated groups than in all female or mixed groups, usually because the women are more concerned with the outcome opposed to the men. Social loafing implies that factors influencing groups performance sometimes suggest that a whole is less then its parts, however this is not always the case. Social loafing may disappear or decrease when individuals within a group are monitored or members highly value their outcome or project objective. To achieve an extremely desired objective, individuals engage in social compensation, meaning they begin to work harder then their peers in order to compensate for lack of performance on their behalf. (Passer *et al,* 2005:631-634)

Such aspects should be considered by the professionals leading the participatory procedure. It is vital to present motivators that will minimize social loafing and encourage individuals to be interested in the participatory procedures, being motivated themselves and encouraging their peers. Such motivational techniques can be included in the project cycle as milestones outlining methodology of each element and how it is to be achieved.

Groupthink

Groupthink is a tendency of group members to suspend critical thinking because they are pressured to reach an agreement. This is likely to occur in the flowing situations:

- under high stress to reach a decision
- pressure applied from an outside input
- directive leader forcing a personal adgenda
- high cohesiveness, reflecting a spirit of the ability to work together and closeness within the group. (Passer *et al,* 2005:631-634)

in the financial sector, groupthink can result in fragmented management and decisions that negatively affect resource allocation and capital funds; this adversely effects the organization reputation and further projects. (Passer *et al,* 2005:631-634)

Individual group members who experience doubt are pressured to make up their minds and often prevent negative information from reaching the group, this in turn results in other members holding back their doubts as they come to a conclusion that everyone else seems to agree with the projected outcome. (Passer *et al,* 2005:631-634)

Janis, (1982), suggests that groupthink may be avoided if the individual leader remains impartial and encourages everyone to participate in decision making and putting forward suggestions, dividing larger groups into smaller groups where more personal contact and freedom can be expressed. Such theory is applicable to all participants in community driven projects. The authority of the group should plan and allow for time so that independent thinking to takes place within a group. However one must consider that although critical debates enhances the odds of proceeding with a good decision it does not act a guarantee of a positive outcome and in various cases may cause a group decision to become deadlocked.

The size of the community significantly affects the procedures that take place within it. Understanding its social formations and structures and interactions aids one in developing a functional participation model.

2.17. Understanding Collective Action

The problem associated with collective action questions the possibility for an explanation of the co-operation of individuals in groups or in communities. If individuals evaluate the private profit incurred from each action, why should one ever elect to do something that will benefit others more than themselves? The problem of social norms relates to the question of why people agree to and pursue norms of behavior that direct them to act in selfless ways or to feel a sense of commitment that supersedes their self-interest. Therefore if all individuals in a community proceeded to indulge in self interested activities no social order would be possible. (Scott, 2000)

Rational choice theorists have integrated collective action into theories by involving the actions of communities and organizations which are simplified to an aggregation of the actions of individuals. Actors in rational choice theories may comprise of political associations, trades unions, business ventures, and other establishments. (Scott, 2000)

The problem encountered in this theory is the minimum implication of the formation of such organizations in the initial phase.

> *It is possible to show that rational individuals would join organizations that are likely to bring them benefits that outweigh the costs of membership and involvement, but why should individuals join or support organizations that provide benefits that they will gain even if they do not join the organisation? Why, for example, should someone join a trades union if they will receive any negotiated wage increases in any case? Why will they join a professional association that works on behalf of all members of the profession, regardless of whether they are members of the association* (Scott, 2000)

This is the problem of the alleged *'free rider'*. (Gregory A, 2003) Rational actors possess no individual motivation to sustain collective action. They compute that the time expenditure of membership is high and in turn their participation can result in no considerable outcome on the organization's bargaining power, so the community concludes that they have nothing to gain from membership, in turn losing trust and faith in the outcome. This often occurs when the benefactors of the projects are procrastinating due to lack of plan finalization or fund allocation, thus, the project process becomes delayed and the community sees no action. Each potential member of a community would review the total size of its membership correlating to the necessary bargaining power; a situation in which an extra member will make no difference. This theory results in a contradiction: if each probable individual formulates this identical calculation, as expected by the rational choice theory, then *no one* would ever join the organization. The organization would have minor or no bargaining power. This theory should be accounted for when project planning is at commencement stage to avoid such outcomes and keep community motivated throughout the process. (Scott, 2000)

The reality that individuals *do* join organizations and *do* develop into dynamic members must suggest that something has been omitted from the simple rational action model. It is recommended (Scott, 2000) that collective action is continued through 'selective incentives'. Joining unions or communities allows one to utilize the rational choice of collective action. If more benefits increase for current members, further collective action will prevail. It can be concluded that organizations are formed in order to attract members, however the basis of the problem indicates that numerous organizations still manage to attract members although they fail to achieve their goals and act within their jurisdictions. (Scott, 2000)

2.18. Understanding Norms and Obligation

The allied question regards why individuals are obliged to feel any sense of responsibility to act in a selfless manner and why individuals should conform to norms that guide them to proceed in selfless habits. Individuals join communities, as they believe there is a requirement to do so or due to an ethical or ideological obligation to the organization. Rational choice theorists state that norms are plainly subjective choices. Individuals may be segregated due to their moral obligations and act rationally relative to them. If individuals derive satisfaction from helping others then being benevolent is an act of rational self-interest; however in the case of community participation it is apparent to members that a '*free-rider'* approach is acceptable and that community participation is unnecessary to receive the project outcome. (Scott, 2000)

Other rational choice theorists seek solutions through the concept of reciprocity. They dispute that where social exchanges are recurring, as opposed to sporadic, potential for collaboration to materialize as a rational strategy is possible. Communities quickly discover that collaboration leads towards a common advantage, even if it does not generate the maximum result for an individual participant. This leads to the conclusion that collaboration as opposed to pure self-interest is the best possible strategy. This can be viewed as an instinctive reaction as a genetically-programmed natural tendency for collaboration and reciprocity. The issue remains as to whether such an instinct exists and, if it does, whether it is influential and sufficient enough to produce the extensive variety of cooperative and unselfish behavior found in communities. (Scott, 2000)

It is, however, unclear whether rational choice theory can clarify why cooperative and selfless behavior is classified as a normative subject, and an issue of responsibility and obligation. Scott, quotes Durkheim (1893) who argues that:

> *...all rational economic actions arise within an institutional framework of norms that cannot itself be explained as the result of rational action alone. The norms of fair exchange and reciprocity, for example, cannot be explained in terms of specific contractual acts of exchange...* (Scott, 2000)

Scott (2000) further adds that Parsons (1937) stated that self-interested rational actors cannot produce a constant social structure on an economic, coercive or political foundation. Parsons explained that social order could be understood through the recognition that there is a normative, non-rational component in all individual agreements.

This predicament is described by observation that communities and individuals are prepared to sustain disproportionate costs in their exchange relations when they are structured into extended chain of events. In such situations, which are considered common in all societies, communities foresee that incurring loss can be counterbalanced by benefits in the future. Communities anticipate a long-standing reciprocity incorporating everybody's concerns; therefore a norm is established. This opposes Parson's theory which argues that rational individuals have no motivation to instill confidence in each other or the third party. He proposes that the framework of norms and assurances that prolong such trust relations cannot be clarified through rational action procedures. (Excess, 2000)

The continuation of trust cannot be clarified solely rational terms, however Scott (2000)attempts to resolve this issue by considering the materialization of trust in social interface as a rational attempt to create a syndicate. Scott indicates that norms of trust and integrity that individuals exercise in their dealings have an ethical background that is converse to solely rational reflection. Trust between benefactors and the community is an instinctive reciprocation and dedication to the project.

Elster (1989a: 119; and 1989b: 98) disputes that norms are not result orientated but are internalized and so obtain a neurotic quality that is inexplicable by rational provisions. He believes that norms materialize through shame and guilt as opposed to rewards and punishment; he goes on to state that rational choice theory offers no concrete statements. He believes that rational choice and normative commitment are corresponding procedures in the structure of social action. This hypothesis of influential rationality cannot provide an absolute rationalization of social order. A complete description must integrate the responsiveness of the component that is illustrated by social norms and emotional assurance in conjunction with the implementation of rational choice. (Excess, 2000) Although rational theories may give details as to why particular individuals establish and implement social norms, they cannot clarify how these norms come to be internalized:

> *The rational choice approach can only explain what people do. It can explain why people might institute a norm and might then enforce it, but it cannot explain why they should change their values - for this is what internalisation amounts to. Values … must always remain a "given" in the rational choice approach and to explain how they change we should have to introduce additional psychological mechanisms that have nothing to do with rationality.* (Scott, 2000)

2.19. Understanding Social Structure

The independence accepted by rational choice theorists states that all proclamations about social phenomena can be simplified to an account concerning individual action. A summation of meticulous individual-level procedures produces a rationalization of social facts that form collective action. (Scott, 2000)

Scott (2000) cites Hofman who alleges that the breakdown of the 'elementary social behavior' of personal encounters involves the 'sub-institutional' stage of social analysis on which all major social organization depend. The greater intricacy of the institutional level illustrates a more indirect characteristic of various exchange relations and the greater usage of such generalized reinforcements as money and social agreement.

The most successful efforts that provide information of the distinguishing structural features of social life have depicted them as the *unintended consequences* of individual action. It is the recurrence of unplanned consequences that results in social trends that individuals are partly responsive to and that they experience as restrictions. The traditional example of this is the procedure of market relations, illustrated in economic theory. (Scott, 2000)

> *Through the operations of the competitive market, it is argued, the supply and the demand for commodities is matched without the need for central planning and co-ordination. The matching of supply and demand is the unplanned and unanticipated consequence of many hundreds of separate individual actions. It must be said, however, that rational choice theorists do tend to deny any autonomy or constraining power for social structures.* (Scott, 2000)

This claim is not fundamental in rational choice theory but rather in the practice of individuality that is implemented as a foundation for the theory. With this the rational choice theory has complexity comparable to other social theories that have focused on action to the exclusion of social structure. (Scott, 2000)

Theories supporting human behavior provide an in-depth understanding of community action on a psychological and social basis while excluding their heterogeneous circumstances. Theories of persuasion of action allow the benefactors of the projects to deal with individuals or various cultures and backgrounds on the foundation of theories discussed above. (Scott, 2000)

Social exchange and interaction allows the benefactors to exercise formal and informal cohesiveness among members with allowance for influence of externalities. Social exchange allows the benefactors insight on self-interest factors which act as initiatives and repellants of individual actions and motivators. (Scott, 2000)

Understanding the social and community structure, functions within the community and community motivators allows the professional team leading the participatory process to plan a strategic methodology for the transfer of knowledge and technology to benifti the developling communities.

2.20. Technological Transfer

The role of community participation in technology transfer is vital. Community procedures, models, framework and legislative issues all correlate to the community participation procedure which revolves around the technological reception of advancing, innovative technology into developing and progressing communities.

This section of the Literature Review explores examples of technological transfer into the developing communities and their reception. The countries that were selected for this review parallel the South African environment, economic conditions or other circumstances that might be encountered.

2.20.1. Community Participation and Technology Transfer in Housing Design: Bangkok

Bangkok has several low-income illegal settlements; the one discussed below being a typical example of a settlement situated along the canals. The low-income development project is key to poverty mitigation policies formulated by national government, which ineffectively attempted to eliminate the problems of the past. Currently the core solution is to consult with the landholder, to negotiate that the community will get 'legal land right'; an important incentive, which significantly persuades the people in low-income community to develop their standard of living. (Usavagovitwong, 2003)

A set of valuable and efficient tools were mandatory as a way of addressing all community conditions that deal with housing design in low-income community The aim of this development not only targeted housing design, sustaining the financial and visual importance but also embraces a sense of community both physically and socially. The design development revolved around the community participation, where the fundamental information from the community was perceptive and responsive. (Usavagovitwong, 2003)

Transfer of design and development procedures are not a one-way communication as conventionally practiced, where architects and urban designers provide to the developing community and appraise the community as an object of study as previous practice in Thailand, but rather as an interactive procedure. Community development and planning can be separated to four areas, namely:

- Introduction and informing the community regarding the advantages of the project and encouraging their involvement;
- Preliminary facts gathering, combining physical and socio-economic information for designing, essentially working with community:
- Development of master plan scheme concerning community limitations and decisions; and
- Physical design involving community participants' capability to pay and community's sociological association via sociological and economical incorporated planning.

Planning and transfer of design theory has considerably altered, particularly in the community development field of study, from a homogeneous community previously perceived by authorities and researches to an object of study that is more complex and indicates subjective representation. Currently the role of architects and planners has been challenged and altered

from top-down planning to become more participatory and collaborative. (Usavagovitwong, 2003)

Therefore architects and urban designers creatively participate in facilitating roles as technical supporters, construction specialists, and cost engineers, as opposed to architectural design format determinists. Scholarly knowledge of physical development such as town planning, infrastructure schemes and vegetation should be shared in this context. Educational procedures are exchanged among designers and community facilitators: architects gain knowledge in a sociological and managerial perspective, while community participants learn more about physical design and technological advancement. (Usavagovitwong, 2003)

Usavagovitwong (2003) states that according to Abbott's (1996: 124) model of participation, the attribute of participation in the study region deals within the area of consensus, where associated stakeholder establishments are open, and which are founded on deep-rooted conflict resolution and consultation progression.

In the case study briefly discussed above, technology transfer to developing communities in Thailand incorporates aspects of design together with community education and participation with regard to physical upgrading as well as improvement in standard of living in conjunction with health and safety improvement.

2.20.2. Technology Transfer: Photovoltaic Lessons from Latin America

Latin America has implemented photovoltaic technologies for social and economic development. A number of the world's first photovoltaic systems for residential power, refrigeration, distance education and hybrid systems were developed in Latin America. (Foster, 2005:1-7)

The use of photovoltaic technology has grown significantly from preliminary ideas pioneered by a few visionaries over the last two decades to many thriving enterprises throughout the region. Photovoltaic are a feasible substitute to conventional large-scale grid systems in rural areas.

The introduction of photovoltaics as a reliable modern technology option together with private participation as well as further options made accessible to the general public. Photovoltaic technology has become a financially sound option all over Latin America with hundreds of thousands of domestic units became electrified via photovoltaic energy. (Foster, 2005:1-7)

Under-developed areas of Latin America have the characteristics of a "*natural*" market for photovoltaic technologies. (Foster, 2005:1-7)

In the early 1980s, solar energy leaders began to distribute photovoltaic technologies in Latin America as an answer for provision of crucial electricity services for non-electrified communities.

The initial pilot projects were embarked on by NGOs such Enersol Associates in the Dominican Republic since 1984. Progressively throughout Latin America, small solar companies began to surface in the late eighties as key element manufacturers at the time that company such as Solarex and Arco, required distributors for off-grid markets. Towards the mid-nineties these activities were subsidized by government agencies in Mexico, Brazil,

Colombia, Bolivia and Peru. Numerous large-scale government electrification endeavors encountered sustainability problems as planners were challenged to establish large scale solar electrification projects within communities that knew little about the technology. General problems encountered included the use of unsuitable battery technologies, substandard charge controllers, dishonest sales employees, and poor quality installations. Notwithstanding such difficulties, photovoltaic modules seldom failed and were usually the most reliable part of any installed system. (Foster, 2005:1-7)

The Fundación Solar and the Fundación para el Desarrollo Rural de Guatemala embarked on photovoltaic systems to bring education programs to inaccessible areas that were demolished by Hurricane Mitch in 2000. The photovoltaic system is utilized to power televisions, video recorders, and computers to renovate the educational system of children in disadvantaged communities. Mexico has over 500 photovoltaic powered schools, with some of the best examples being 54 photovoltaic telesecundaria schools in Chihuahua installed in November, 2002 by EDUSAT/State of Chihuahua for satellite education. MREP provided technical advice to avoid common errors. (Foster, 2005:1-7)

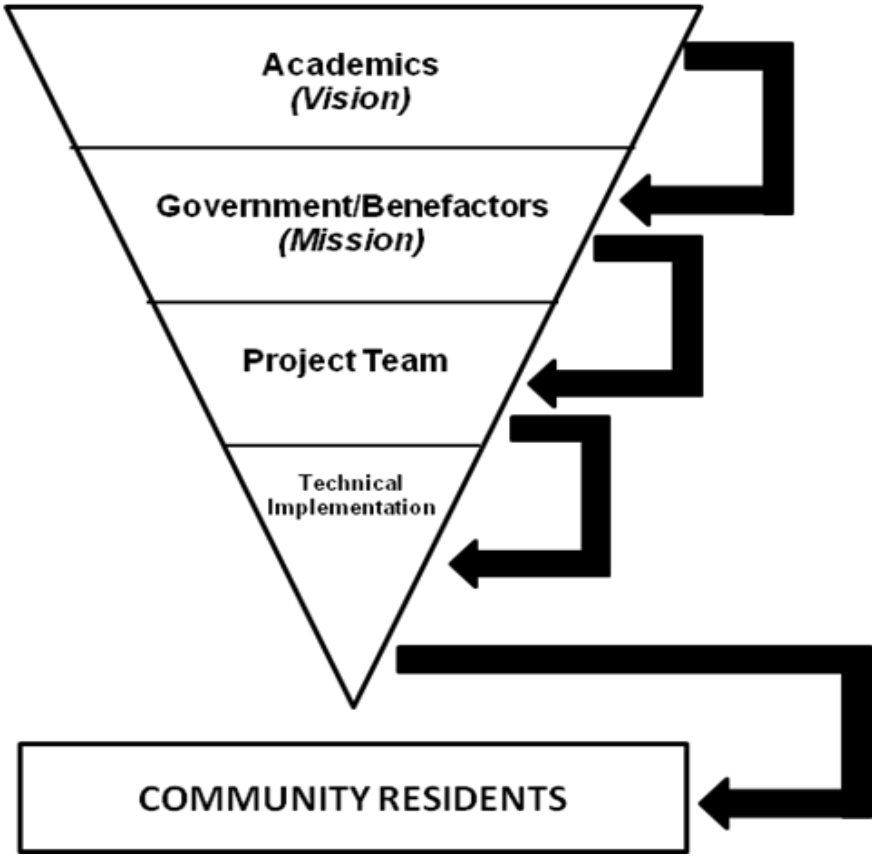
In the rural areas of Northeast Brazil, less than 20% of rural dwellings obtain grid electricity. Amongst the technologies that make use of renewable sources of energy, solar photovoltaic systems are among the highest contributors in cost-effective electrical energy. Lighting extends the hours of work and study; increasing opportunities for education with access to radio and television. The local community is familiarized with and incorporates photovoltaic technology into their daily lives which integrates well into the economy; simultaneously the community learns to operate, maintain and repair the equipment. (Management of Sustainable Photovoltaic Solar Energy in the Semi-arid Region of the State of Pernambuco Brazil, 2000)

CHAPTER THREE - METHODOLOGY

3.1 Community Participation in South Africa

The aim of this research is to establish technological transfer through community participation as well as problems relating to technological transfer; to provide possible solutions for the deficiencies found in policies and implementation techniques and to establish methods of integration of social, psychological and technical elements in the community participation procedure. The combination of such elements and objects leads the author of the examination of the standard participatory model.

Figure 3.1: Participatory Model



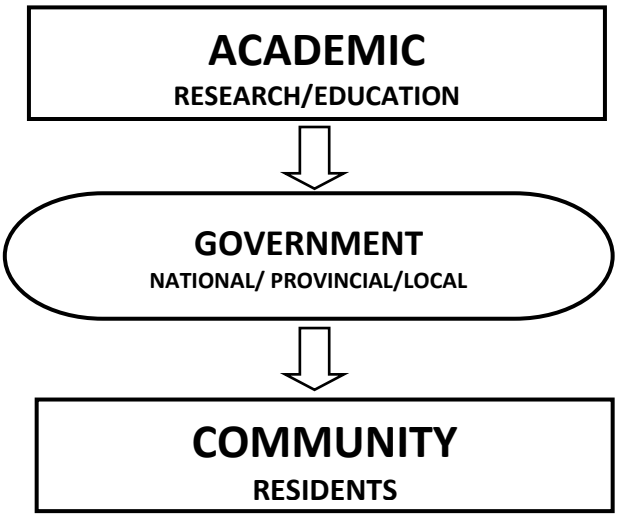
Source: Author 2010

The model combines relationships of academic bodies, government authorities, and the project structure filtering into technical components which are incorporated into the community sector. All of the elements combined in the participatory model display relationships to each other.

For the purpose of this research the model is reduced to a simplified version which illustrates the components in and their direct effect to each of the objectives of the research and due to the model displaying a cohesive relationship among the components their influence upon each

other is explored. The author further considers externalities which may have an influence in exploration of objectives of this research.

Figure 3.2: Simplified Participatory Model



Source: Author 2010

The participation model is used in practice in numerous Non-government Organizations such as the World Bank structure which serves as a prototype illustrating a distinction between policy makers, service suppliers, engineering consultants, consultants concerning the planning and delivery of complementary infrastructure services in difficult to reach low-income communities. This has also caught the attention of governments in other parts of the world, including in South Africa, Indonesia, Bolivia and the Philippines. (Bringing Water Supply and Sanitation to Brazil's Urban Poor, 2006:2)

The components are broken down into more specific aspects. This will allow analysis of each aspect individually, allowing for in-depth exploration of each component and its relationship to the main objective. The objectives and analytical techniques of the components are discussed in detail under section 3.2.

This chapter outlines the methodology necessary to be implemented in order to accumulate the potential results based on the objectives of various components of this research. The research methods applicable to this study are discussed as well as the tools and procedures needed to obtain the required data

This dissertation targets three groups of participants, namely academics, government employees, and community participants. The result aims to investigate in detail the perceptions that the target group reflects in their experiences throughout their careers or communal involvement in participatory projects. Technological transfer effects are explored in social, psychological and technical components and their implications on developing communities. The components for investigation will now be discussed in greater detail.

Community involvement and technological transfer will be studied to explore the technological advances via community participation and the progression of policy implementation in the process. It is important to classify each of these components as independent because they

may occur in no relation to each other. However for the purpose of this research the author reviews networking relationships and concurrent occurrence between the above-mentioned components as well as influences of externalities upon them.

A key of community science is to develop the standard of life in our communities by improving the quality of the practice of community dealings, health promotion, and education. Community science is an interdisciplinary practice, which develops and investigates community-centered models that facilitate communities to use evidence-based interventions more effectively and efficiently. (Wandersman, 2004: 227)

Technological transfer is a multidisciplinary subject that has escalated immense interest among academic researchers and policy-makers. The incorporation of technology transfer into policy has uncovered an important field for new research.

Focusing solely on the product is inadequate to the study of transfer and dispersion of technology; it is not just the commodity that is transferred; transfer is simultaneous with the knowledge of its use, function and maintenance. This advance resolves a key methodical dilemma: the distinction between technology and knowledge transfer.

An ideal technology policy model would feature a dynamic function for government actors and universities in technology advance and transfer. The government's function can be as a research actor, inclusive of provision of functional research and technology to industry, or as an agent, developing policies influencing and governing technology development and innovation. A comprehensive technology model is a combination representing a range of values underlining

The sub-objectives have been broken down into social, psychological as well as technical components with regards to community participation, technological transfer and policy implementation. These aspects will now be discussed with regard to their background structure as well as relationships with other components.

3.2. Research Components

3.2.1 Academic Component

The academic component consists of two elements namely: research and education.

Research: The areas of research discussed in this dissertation relate to research which aids the community participation process throughout the various stages of the project, and the transfer of technological advances into the developing communities. This allows the reader to use academic foundations to incorporate the practical aspects of policy implementation with regard to the developing communities. The role of the researcher within the context is purely academic, which is seldom part of the direct participatory process regarding education. Consultants often partake directly in the participatory process and are often seen as educators however they often do not build up a data base of literature. It is often they are educated through practical experience. It is important to incorporate the academic literature and theories as a fundamental principal on which you may base assumptions and recommendations for further literature development where loopholes exist.

Education: The education element which comprises the other area of the academic sector related to the community participation procedure which relates to the education that the

community received via the participation procedure together with technological advances and the choices communities make while incorporating such aspects into the process. The learning process allows the community to obtain skills for future development, and spread the knowledge throughout the community which aids in other aspects of participation. The role of educators may also be reviewed. It is often educators are not professional teachers rather professionals in technical, psychological and social areas.

After reviewing the academic component with incorporation of the theoretical aspects and ideas discussed in the previous chapter, the author reviews the transition of formalities from the academic to government sector as per the simplified participation model.

3.2.2 Government Component

The relationship between the academic, the government and the community is explored. The author seeks to understand the mechanisms and dynamics of the practical implementation of academic ideas into policy, as well as their implementation. The government sample population is requested to share their ideas of psychological aspects that they utilize to create trust within the community.

The government involvement is explored and their role in the participation procedure. The government legal aspects are infiltrated into the various tiers of government discussed in chapter 2, which is further infiltrated into the practical developments and the municipal daily running and dealings with the community. The ward system allows the government to remain close with the community theoretically however the results will be explored primarily in chapter 4.

All three levels of government, national, provincial and local government, establish policies and various levels of participation procedures. The functions of the various level of government are described in chapter 2.

In South Africa, local government engages in community participation by integrating it into projects at early stages via legislated procedures and through NGOs which structure the community enhancement procedure throughout the various stages of the project. These organizations may facilitate integration and collaboration in the planning, execution and handover of the chosen project.

3.2.3 Community Participants

Community Participation: is defined in the context of this research as a group of interacting individuals within a geographical area. The data collected for this study has been confined to Diepsloot, an informal settlement on the outskirts of Johannesburg. These individuals share common living conditions, resources, risks and other conditions that identify the degree of cohesiveness.

3.3 Research Methods Applied to this Study

The various research methods will now be discussed as applied to this research.

3.3.1 Qualitative Research

Leedy and Ormrod (2005) quoted Peshkin (1993) state that qualitative research serves descriptive, interpretation and evaluation purposes. Qualitative research methods will be used in order to obtain methods, perceptions and opinions as well as practical experiences of the study participants which show the nature of knowledge on the community participation throughout various levels of the research components.

Social Research Methods quote Creswell (1998) who defines qualitative study as:

> *Qualitative research is an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem. The researcher builds a complex, holistic picture, analyzes words, report detailed views of informants, and conducts the study in a natural setting.* (Creswell, 1998)

This study uses the descriptive/normative survey method. In a descriptive survey, data is collected from a population and used to describe certain conditions, characteristics, opinions, attitudes of members in a population. The descriptive research method combines *qualitative* and *quantitative* research methods to obtain data. (Kennedy, 2006).

A large component of the study will focus on qualitative research as the author requires a wide range of information and opinions from survey participants that have previously encountered and experienced working in the field of community participation in the developing regions. The author seeks insight into subjective outlooks, descriptive and practical experiences.

The following were considered in this research:

- The topic of '*Community Participation'* discussed in this research requires variables that cannot be simply identified and quantified without subjective matter. Experts interacting in the current participation procedures and policy implementation leading up to technological advances are to be consulted.
- Theories such as the '*Rational Choice Theory'* support such research in relation to explanations and behavior of experts, community participants or their population of study. The theory allows insight into the reasoning behind people's choices allows the author to interpret behavior and social stances more accurately.

- This research requires meticulous analysis of the topic, informed by subjective opinions and suggestions of the consultants at each level of the model. This is imperative in the research structure as general observation is not enough to illustrate answers to the problem.

- The research focuses on studying individuals in their home environment of Diepsloot, such that if participants are taken out from their natural surroundings it results in engineered conclusions that are out of perspective. The surrounding area should be an essential part of analysis process. If one over looks the are area the result may become subjective to the interpreter

3.3.2. Phenomenological Study

A phenomenological study depicts the significance of experiences for numerous individuals about a topic. Phenomenology investigates the composition of consciousness in individual's experiences. It depicts the outcomes following experiences which individuals encounter,

aspects of their lives affected by such experiences and the various interpretations and meaning constructed out of the experiences. (Social Research Methods, 1998)

This type of study is used in the present research in the ways as listed below. The contexts as the procedures involved in such process relate directly to the methodology applied by the author.

The following were incorporated into this research:

- The research questions are structured to investigate the significance of experiences for experts and community participants, and request that individuals elaborate and explain these occurrences.

- The author is to assemble information, via detailed questionnaires, from academics, government officials who have experienced the occurrences required for the study. Further information is to be supplied by the community participants. the data supplied reflects the meaning and outcomes that the individuals have constructed out of the experiences and how it has impacted on their daily work and lives.

3.3.3. Ethnography

Ethnography is a portrayal and interpretation of a cultural/social assembly or organization. In such research, the author observes the group's recognizable patterns of activities, traditions, and ways of life. The researcher takes the role of a community spectator, and is absorbed into the daily lives of the community through individual consultations with members of the community. The researcher emphasizes behavioral patterns, language, and relations of the culture-sharing community. (Social Research Methods, 1998)

Ethnography is applied on a minor basis in this study as the author familiarizes himself with the conditions of developing communities in South Africa and thus is able to observe and study the community from different aspects. The author reviews the community from previous experiences of professionals working within the community as a secondary source of research material. The following methodology will be incorporated into the research:

- The author observes the interaction of the population in common participation processes and structures a model to illustrate persistent of aspects of policy implementation, participation procedure and technological advancement.

- Such examination requires the author to study the field in which the community participation model is established, compile data via interpretations, interviews, and other supportive material in establishing a profile for the academics, government officials and the participants.

3.3.4. Triangulation Method

Triangulation is a method for data investigation that amalgamates information from multiple sources. Triangulation is used for searches in an examination of presented data to reinforce analysis founded on the existing validation. By investigating information collected by diverse methods such as questionnaires from the communities and interview questions from the academic and government sector, such as diverse groups and in diverse populations,

conclusions can be substantiated in a range of data sets, reducing the impact of potential prejudices that can exist in a single study. Triangulation unites data from quantitative and qualitative research, integrates and utilizes expert judgment. Triangulation can provide answers on risk groups, program effectiveness and policy. Triangulation methodology supplies a ruling method when a rapid answer is required, or when reliable data do not exist to answer a particular question. Triangulation can be utilized when the collection of new data is not feasible or cost-effective. The researcher utilizes such methodology as there are so few possible respondents in two of the study groups, preventing a statistical approach. (Social Research Methods, 1998)

The triangulation methodology is applicable to this study as the sourced of data information are derived from various groups experiencing different conditions; the academic field, the government sector and the community. The conditions and policy implementation at different levels allow the author to compile data which relates back to the objectives and the hypothesis of this research. The various sources provide views on related subjects within their field of expertise. (Social Research Methods, 1998)

3.4. Structure

The *empirical* research methodology structure shall be adopted in this study. This methodology structure highlights the hypothesis, outlines the research design, utilises sampling techniques and reliable measurement instruments such as consensus within the triangulation method in order to collect data which will be analysed (Higson-Smith *et. al*., 2000:38).

3.5. Population

A population, as defined in the present study, is a collective group of people under consideration for research purposes (Melville and Goddard, 1996:29). The population for this study shall be drawn from:

- Academic practitioners in the community participation field will be interviewed; concepts and techniques regarding participation will be discussed. Identifications of downfalls and recommendations for current community participation procedures will be highlighted. The academics selected are independent of a specific project to get a broader specification of answers to the proposed questions.

- Government officials form the second group of the population; input will be obtained on community participation procedures, implementation of policy and technological advancement. The different practical experiences differ from the theoretical and professionals implementing such procedures are consulted.

- Community participants are surveyed using the qualitative method. The community reveals the practical implementation and the downfalls of the policy procedures implemented by the government. The community illustrates the phenomenological procedure as to how the community participation projects reflect on the individuals emotionally, socially and the response they have towards technology.

3.6. Research Tools

Questionnaire

The main measurement instrument used in this study is a questionnaire consisting of open and closed questions. It is used to gather information from academics, government officials and the community directly affected by the projects implemented as a result of the policies and community participation initiatives.

Characteristics of the Questionnaire

Leedy (1974) explains that questionnaires are a commonly used instrument used to observe data; questionnaires often have standardized questions that make it simple to compile data for a large population however qualitatiove research focses on explanations and insights of the research as opposed to quantities of participants needed to establish a robust sample. He suggests two main guidelines that researchers ought to follow in setting up their questionnaires. The language should be clear and concise to obtain exactly the information the researchers are looking for. In addition, the questionnaires should be designed to fulfil a specific research objective, in this case, community participation. The questionnaires should be objective; questions should be relevant and suitable to the study. (Gatech, 2010)

Questionnaires may be perceived as leading. A leading question is one that forces or implie a specific kind of answer. It is simple to make this error not in the question, but in the choice of answers, specifically referring to multiple choice answers. A closed format question must supply answers that not only cover an entire possibility of responses, but that are also uniformly distributed throughout the range. (Gatech, 2010)

The author uses this guideline in all the group questionnaires sets; the answers may result in any possible outcome regarding the academic and the government sectors. One may refer to different projects and experiences to provide a wide spectrum of answers and insight. The questionnaire set up for the community reflects a choice of a wide range of possible answers, there is also a consistent option of adding to the set answers provided by the researcher, this allows more flexibility and an option to contribute to the range of researcher's answers.

Why the Questionnaire was Chosen

The questionnaire is a time-effective and yet efficient tool which enables the author to obtain the data required in order to make the relevant assessments.

The questionnaire allows the author to explore different opinions of experts and community residents and correlate them to form a coherent explanation of the results.

The questionnaire will be structured segregating various objectives into specific sections with questions relating to the specified subject. This allows the author to create a logical structure for analysis purposes.

3.7. Procedure for Data Collection and Analysis

The procedure for data collection will now be discussed pertaining to the objectives of this research.

The questions consist of interlinked subjects that combined ideas of the components interrelating to each other. Aspects such as: policy implementation contributions, research techniques, and community suggestions are discussed.

The objectives will now be restated in relation to the problem statement:

Objective:

- To establish technological transfer through community participation as well as problems relating to technological transfer.

Restatement of the Problem

Due to previous historical circumstances, South African communities in developing areas have not been exposed to development and an understanding of infrastructure such as housing requirements, roads, transport systems and the like; technological advancement through projects. (Adato *et al*, 2005). There is difficulty in the negotiation procedures and understanding of availability and feasibility of resources. The community is often left out of the project implementation procedure and the handover. (International Development Research Centre, 2010)

The objective aims to address the degree of understanding to which the technological transfer process infiltrates throughout the participatory model and how the participatory model components relate to the process of technological transfer. This aspect will indicate to the author if a structure in the participation model is present, the accountability points, as well as the overall functionality of the procedures currently in place.

Objective:

- To provide possible solutions for the deficiencies found in policies and implementation techniques.

Restatement of the Problem

Although South Africa has excelled in drafting documentation with regard to the matters previously discussed and policies have been established; there is however difficulty in policy implementation.

The South African government has gone through a major metamorphosis and currently has a multifaceted structure. However, South Africa still lacks institutional capacity to manage and streamline systems with regards to community participation and, there is a lack of professional involvement and the current systems are backed up by bureaucratic procedures.

Policy implementation is an integral aspect of project execution. Practical policy implementation is difficult to achieve throughout the project cycle. Implementing theoretical policies into practice incurs adverse time and cost implication as well as the community not attaining the full benefit from the policy principals.

Objective:

- To establish methods of integration of social, psychological and technical elements in the community participation procedure.

Restatement of the Problem

The negotiation system with developed communities is complex. Technological transfer, economic and education obstacles in understanding, questioning, implementation of the process and maintenance are present. The community is unaware as to what they should be asking regarding various stages of the project and the delivery of the final product.

Legal developments and procedures are time consuming. Although South Africa has excelled in drafting documentation with regard to the matters discussed above and policies have been established; there is however difficulty in policy implementation (due to lack of implementation and exposure to raw communities), the incorporation of changes and correction of inadequacies in procedures to make them more practical. (African Developments: Continental Integration In Africa, 2010)

The negotiation system with developed communities is complex. Technological transfer, economic and education obstacles in understanding, questioning, implementation of the process and maintenance are present. The community is unaware as to what they should be asking regarding various stages of the project and the delivery of the final product. (The Complex Relationship Driving Technology Transfer, 1996)

Looking at the objectives the author explores the cohesiveness of the three tiers of the participation model on social, psychological and technical levels. Community participation is a complex procedure and all three components are of equal importance; the difficultly lies in development of all levels in the policy implementation and technological transfer without any overlooking of all three components.

3.8. Data Interpretation

The data will be interpreted with the same principals for all areas of the questionnaire.

The information investigation requires horizontalization isolating statements from questionnaires. The relevant statements are then accumulated into clusters of significance with relevance to how each statement falls in a specific phenomenological category. To conclude, these statements are clustered together to create a general depiction of the occurrence; both the textural portrayal (of what was experienced) and the structural portrayal (of how it was experienced). The author may also integrate his/her personal significance of the incident here as per the literature review and personal experiences.

The author follows these procedures by a comprehensive explanation of the culture-sharing community, an analysis by components such and interpretations for meanings of social communication and generalizations.

The data will be interpreted by assessing the consistency of answers in relation to each other. This data will then be discussed and addressed in accordance to the category and the level of hierarchy as illustrated in figure 3.0.The results form the interviews will form a part of an overall discussion by the author in assessment of result in Chapter 4. Emphasis will be upon the overall structure and the functionality of the model.

The over all structure for interlinking questions in each section namely the academic, government and community sectors was structured in such a way that each question in that

section relates to a question in another sector, thus allowing the author to analyze the result accordingly. An example of such structure is as follows:

Table 3.1: Investigation of Consensus and Cohesiveness among Components of the Participation Model

INVESTIGATION OF CONSENSUS AND COHESIVENESS AMONG COMPONENTS OF THE PARTICIPATION MODEL		
Academic	**Government Sector**	**Community Participants**
What research have you completed that contributes to the community participation procedure?	What research have you received that contributes to the community participation procedure and how have you implemented that research?	What surveys have you participated in regarding the problems and projects that have been offered to you by government within your community?

Source: Author 2010

The incorporation of the above mentioned tools and methods will now be applied to analyzing the collected data as discussed.

CHAPTER 4 – ANALYSIS AND FINDINGS

4.1. Analysis of Research Objectives

In this chapter the author shall discuss the results obtained from the three questionnaires concerning the various allocated groups within the participation model. The three questionnaires were filled out separately the results acquired were segregated into sections will now be discussed pertaining to the objectives of the research.

Please note that reference made to 'participants' under the stated objective will be directly related to the heading under which the discussion is

4.2 Background of Participants for General Overview

The characteristics of participants in the various questionnaires will now be discussed for background understanding of further discussions and reasonable understanding on views classified below.

Table 4.1 Questionnaire Participant Background

Sector	Quantity Surveying	Engineering	Architecture	Other	Total
Academic	2	1	2	-	5
Government	-	2	-	2	4
Community Residents	-	-	-	8	8

Source: Author 2010

Ten questionnaires were distributed to participants from selected academic and government groups and community residents as per the participation model. Five questionnaires were returned from the academic field and four from the government sector. Eight questionnaires were filled out by community participants previously involved in community participation procedures.

Academic Participants

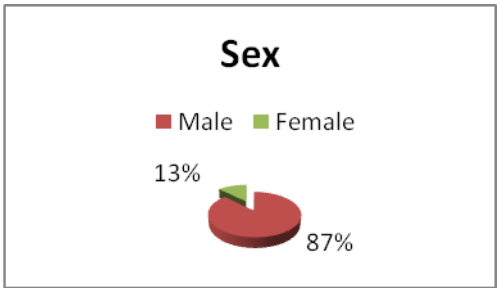
The five participants from the academic field consisted of two quantity surveyors previously involved in road and housing construction in developing areas, two architects specializing in urban design and renewal projects, and one electrical engineer involved research programmes examining delays of developing projects. The participants possessed from three up to ten years of expertise contributing to answering the given questionnaire.

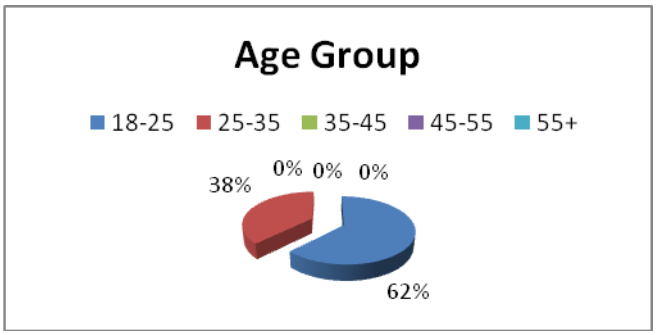
Government Participants

Four questionnaires were returned from the government sector holding positions such as economic analyst, two civil engineers, and a manager in a Non-Government Organization. The participants possessed from four to sixteen years of experience in their respective fields.

Community Participants

Figure 4.1 and 4.2: Population Sex and Population Age Group

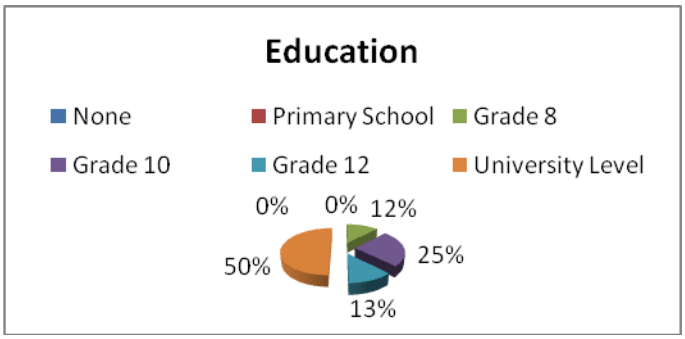




Source: Author 2010

The participants in the questionnaire consisted of 2 women and 7 men, between the ages of 18 and 25. The smaller ratio of women reverts back to chapter 2 where the role of women in the community is discussed. In accordance to previous community participation experiences the women are often overlooked or preoccupied in household functions to participate in such processes; this has various drawbacks for the overall community. This view was upheld by the academic and government participants in an informally recorded discussion, stating that due to the early sexual activity in such communities and lack of sexual education women conceive at an early age and bare the responsibility of their children forcing them to focus on family life therefore hindering their time allowances for such participation methods and contributions. However it was also stated that women sometime serve as primary candidates for the participation procedures involving housing development as they contribute most to household running and maintenance while the men act as breadwinners and have little knowledge as to what is needed to household running activities.

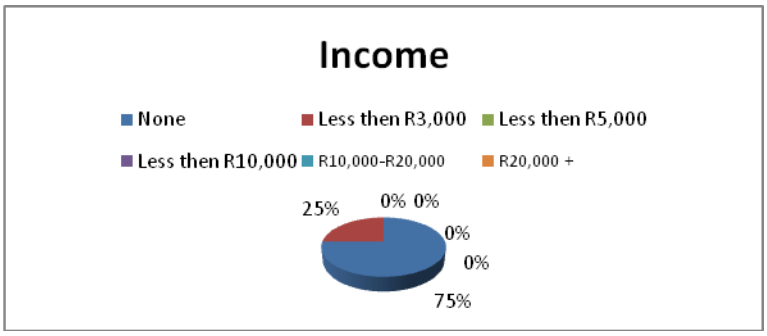
Figure 4.3: Education



Source: Author 2010

Figure 4.3 illustrates that half of the participants possessed degrees at university level. This demonstrates the extent of potential that community members have when dealing with professionals from other tiers of the participation model. Community participation is often lead internally by members of such communities where education and trustworthiness is important. The education of the community participants allows the author insight into the potential theoretical standard deviation of the answers provided by the community. The level of the questionnaire illustrated Grade 12 Education level, making it accessible to all participants.

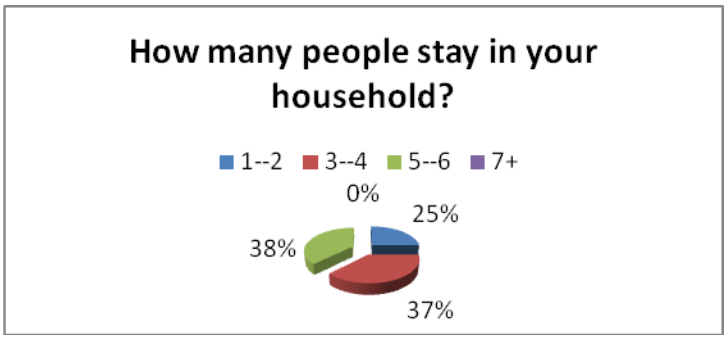
Figure 4.4: Income



Source: Author 2010

The disposable income figure illustrates the work opportunities in the community. Although 50% of the participants are certified with university level degrees as in figure 4.3 this does not reflect availability of work concurrent to their education level. This indicates that many participants are willing and able to learn about the functionality and procedures of community participation during the process in hope of being able to utilize their new-gained knowledge further by seeking employment thereafter. The usage of new technology allows the participants to expand their horizons beyond their current measures. The participation process ascends the moral and allows those who possess further education to gain more confidence and abilities to liaise with others in interviews and informal job-seeking agreements.

Figure 4.5: Household Residence



Source: Author 2010

Figure 4.5 indicates the standard living conditions among the participants. 38% of the participants are currently living in a household with 5 to 6 people and 37% with 3 to 4 people. This indicates that the community is densely populated within a small residential area. The living conditions allow governments to structure their participation methods accordingly to obtain the highest and best usage of their resources.

The background of the participants allows the author further insight into the more complex explanations from the questionnaires and their interpretation. The agreement and consistency of the participation model will now be discussed from the academic, government and community perspectives.

4.3. Investigation of Consensus and Cohesiveness among Components of the Participation Model

Academic Participants

The academic participants have explored various areas of research and gained practical experience in fields of locality mapping and zoning analysis through consultation of local stakeholders and residents for determination of problems, urban design and infrastructure development, financial consulting and material surveying in of RDP housing projects, feasibility and prefeasibility of developing projects in the Mpumalanga area. One participant researched effective modes of communication within developing communities.

All five participants indicated that they felt that their research has contributed to insights regarding policy implementation and techniques involving technological transfer within the developing communities. Locality zoning and mapping analysis highlighted the naturally established dispersion of the community members. This allows for the researcher to isolate focal points regarding meetings locations, allowing monitoring techniques of feedback and identification of community needs. Communities gather in various locations due to their ability to satisfy a common need, such as obtaining water from a river or a source as such. Identification of major problems via consultation of stakeholders allows the researcher insight into common practices in relation to the locality and thus a detailed identification in community participation commencement. The study of locality and mapping simultaneously with urban infrastructure and design aspects allows the researcher to illustrate trends which can be isolated and examined with possible solution allowed for the problems identified. Trends allow guidance into establishment of models to compare to unsuccessful prototypes enforced by government policies. Pre-feasibility and feasibility practical studies indicated that no inclusion

was made for community development and no budgets identified for training communities or involving them in decision making. However once the projects were initialed and commenced at planning stage communities began to be involved although no resources were allocated to this procedure. The programme of the project began to be extended and variation orders due to time extension began to increase the budgets reflecting on the time related preliminaries and general and additional specialist and engineers reduced other resources in the project and deducted from the quality and essentials provided. The analysis of RDP housing construction indicated unsatisfactory results from the community as all the houses were homogeneous and not adapted to the number of the family members, families were dissatisfied with layout and financial maintenance issues which further expanded into neglect and renting.

Further research from the academic participants stated to included budget analysis with inclusion of community participation procedures, together with pre-feasibility and feasibility study, study and mitigation of delays in construction projects in developing areas, post-implementation studies of existing social housing schemes to determine general attitude shifts to pre-conceived stigmas, as well as ascertaining cornerstones of successful installation and their functionality on micro and macro levels, introduction of sustainable energy into developing communities as well as establishment of boreholes, sustainable sanitation and drainage systems.

All five participants agreed that government institutions are vital for further advice on what areas of research should be undertaken by the academics. This allows the academics to research current problems encountered and in various cases have access to funding for approved pilot projects managed and analyzed by a profession at no additional fees to the government. The government institutions further assist with the framework that the academics may base their assumptions on while conducting their research; such as delivery of services, limited and realistic assumptions allow academic research to be more creditworthy and valuable to practical applications. All social housing projects are subsidized by government; lack of funds has been the shortfall of the housing demands and has increased continuously, these studies discuss alternate social housing models, which involve private sector investment to alleviate the financial load.

Four out of five participants stated that the government rarely requests the professional academics for suggestions regarding the updating and suggestions pertaining to the community participation procedure. It was further stated that effective urban renewal solutions which encourage long term economic growth, are almost always superseded by sterile developments which are quicker to implement however almost all short term solutions are and eventually become redundant schemes as a result. One of the participants opposed the above views and stated that the Council for Scientific and Industrial Research serves as effective library of information which government officials make use of frequently and communicate with on a continuous basis.

Government Participants

The participants were involved in various community participation projects such as household surveying to establish origin and destination of the communities, policy analysis, rural upliftment, RDP housing development, management of infrastructure implementation, assessment of the of community ideas regarding their development, sanitation repair projects, newspaper and radio establishment in the community. The projects were established in Diepsloot and Alexandra as well as other developing areas which were not disclosed in the

questionnaire. It was further stated that the Municipal Systems Act 32 of 2000 requires that the communities participate in all governance of their areas as far as the Integrated Development Process which includes project identification and their monitoring.

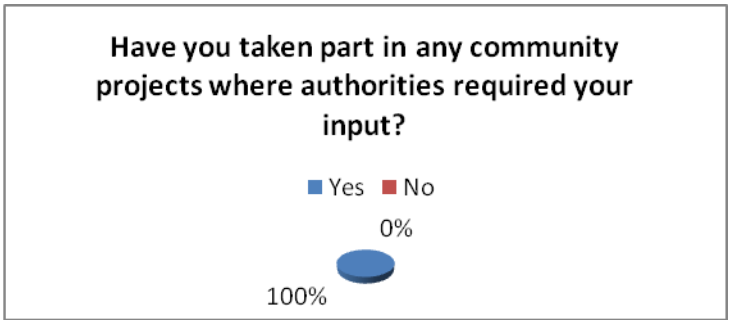
All four of the participants agreed that assistance from the academic field regarding what needs to be researched is of great importance in order to keep up with the latest topics of discussion and sustainable technological proposals which should be tested and implemented resulting in long-term cost savings and improved techniques. Theoretically functional ideas, this allow for the practical adaption to be more flexible due to the availability of possible solutions to various problems and outcomes. Participants previously requested assistance in framework development and implementation of such development in the Public Works Programme that maximizes usage of labour thereby incorporating the community in the process. It was stated that stakeholder analysis forms an important aspect of the overall project structure and consultation time and cost may result in potential cost saving in the project and avoid cost overruns. Consultations with various stakeholders via forums such as BRT, Gauteng Freight, Rail Steering committees and university professors form part the establishment of policy matters and techniques that contribute towards the development and expansion of the community database. One of the participants mentioned that funding is an area of research which needs further input form the academic community as many of the participation projects lack funding structure and management as a lack of expertise is illustrated and practiced in this field. Quantity surveyors and financial managers are seldom trained with aspects that regard the development of communities and working within the participation structure. The allocation of funds is thus often poorly managed and misdirected

Three of the participants concurred liaising with the community prior establishment of the community participation procedure is important however can be highly dependant on the nature of the project. Usually funding usually makes the procedure quick and ineffective; lack of time and resources result in fast-tracking technique which create more confusion as communities become unclear what is required of them and why. Two of the participants agreed that it is the nature and the funding available for the project that will allow them to establish the correct path towards the community and decide whether their input is necessary. One of the participants stated that the process as far as local government is outlined in the Municipal Systems Act 32 of 2000 in chapter 4 and therefore no community input in necessary. This results in an advantage that community participation is legally enforceable and therefore always present, however in many cases only the heads of the communities are heard.

All four of the participants where unsure of the duration throughout which procedures and suggestions, put forward by the academic sector, are incorporated into policy implementation and technological transfers that beneficially incorporate the community into such processes. One of the participants mentioned that although various suggestions are reviewed with policy implementations renewals they are not always successful as they do not fit the legal requirements and constraints provided by government. It was further stated that no amendments have been made or accepted to the Municipal Systems Act 32 of 2000.

Community Participants

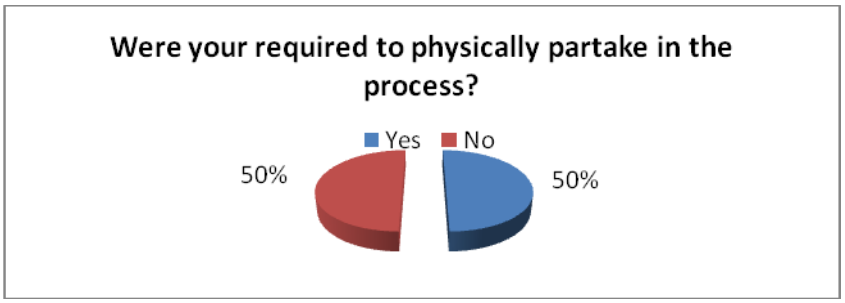
Figure 4.6: Project Participation Input



Source: Author 2010

The stochastically chosen participants of this process have all participated in the community driven projects. This indicates advanced government establishment programmes and awareness within the community of project establishment. However it was mentioned by the participants that news usually travels by word-of-mouth due to lack of ability of communication in the township, and positive news, such as new project developments, usually evolves much slower as opposed to negative news such as crime. The slow spread of project development is due to the fact that the community is aware of the time lags between the conception of the project and the implementation and handover to the community. There is always a fear that the community of the losing interest in participation due to time lags.

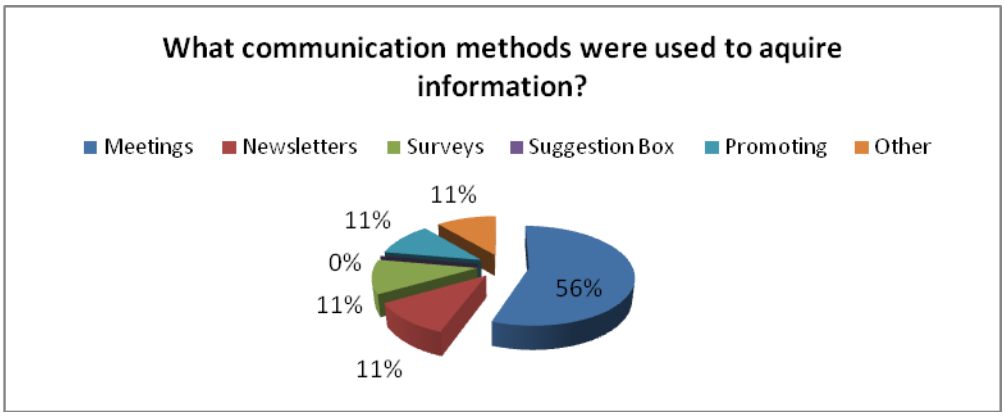
Figure 4.7: Participation Description



Source: Author 2010

The 50% split indicates the different participation procedures that the population has participated in. Some participants were required to do physical labour while others proposed their ideas and notions. The population participants all revealed a degree of basic construction knowledge and capabilities of manual labour as their homes were erected from wastage materials with no financial assistance.

Figure 4.8: Communication Methods



Source: Author 2010

Figure 4.10 displays numerous methods via which information may be extracted from the community participants. The participants were not required to isolate one correct answer but rather multiple answers as well as their own suggestions which they have experienced in the previous participation methods. In the developing communities the communication methods usually comprises of word-of-mouth whereby information filters through direct contact with members of the community. Meetings display an effective tool of communication ideas and spreading the word in the community. The awareness of meetings however is a limitation to the author's research and it is unknown to the author whether the majority of the general population is aware of the meetings taking place in the community. The participants of the questionnaire did mention that almost everyone in the community has a cellular phone and perhaps message communication could be of beneficial use to create awareness of participatory processes, meeting times etc. There is a possibility of the correlation between the satisfaction of organization of the participation procedure and methods of communication utilized to structure the participation process.

Conclusion for the Objective

All the academic and government participants contributing to the research have been involved in community driven projects in numerous overlapping criteria such as rural upliftment and infrastructure delivery. The community participants were fully aware of participation procedures conducted and have all been a part of such processes. The academics stated that further research will be conducted involving communities.

Consensus was fully reached on behalf of the academic participants regarding the reliance on government for consultation prior commencement of academic research in the community development area; 75% of the government participants agreed the academic field needs to be consulted. It is clear that a close relationship between the government sector and academia would result in innovative ideas and creditworthiness for all parties, expanded data base and other benefits for solidifying information channels and improving overall participation procedure.

80% of the academics stated that government rarely requests consistent updates regarding areas of advice and research projects to be undertaken. This was opposed by the government participants stating that they have a consistent relationship with the academic sector reviewing various ideas concerning the innovation. However when viewed in accordance with the

Municipal Systems Act 32 of 2000 no academic or community input is necessary to be requested as legislation enforces such participation regardless. No consensus was reached between the participants.

The academic and government participants reflected uncertainty pertaining to updating of policies with innovative ideas. However it was indicated that the Municipal Systems Act 32 of 2000 does not require further innovation regarding the principals governing such policy since the year 2000.

4.4. Establishment of Successful Methodologies of Technological Transfer in Community Participation Procedures

This sections aims to establish successful methodology of involving the community at various stages of the project, combining policy implementation and technological transfer.

Academic Participants

All of the academics agreed that community needs to be involved at the initial stages of the project as far as subject analysis, the subjects must be consulted from the inception and an on-going process must evolve from there on. it was stated that community participation can cause or avoid delay, and that such circumstances prevail strictly relating to the planning procedure and incorporation of the participation process into the project programme, the budget or bill of quantities.

The milestones of design freeze and brief freeze attempt to enforce parameters on the community participation procedure. The communities' needs are not usually addressed in time due to inadequate planning of the project programme and inexperience of project managers with regards to participation procedures. It is sometimes necessary to outsource the necessary skills to aid in the project management procedures which involve community participation and structure. The establishment of logical framework to reach the necessary milestones requires in-depth understanding of the community lifestyle and expertise in the field of project management. Extending the deadlines of the brief and design freeze functions initiates the resistance in the community to participate as they see no progress being made in the progression of their project and begin to view the procedure as redundant; this results in moral and eagerness of the community being destroyed. The cost affiliations of project exceed the budgeted amounts by extending the milestones, incurring more cost yet hindering progression; this scrutiny maybe illustrated via the Earned Value Analysis as well as the extension of time related overheads and preliminaries and general of the project budget.

It is important to remember that communities are heterogeneous and the study of their setting and environment is important for understanding and undertaking project within a South African environment. The participants elaborated on methods that aided them in choosing participation methods. It was stated that conferencing can be an effective tool with consideration of timing and location. Timing and location allows the researches access to the community for information and adaptation of new methods through study of psychology and networking among the members and their internal and external relationships. Stadium rallies that involve music attractions are extremely popular as a source of the majority congregation access. Leaders within the community that can aid in explanations in various languages that are applicable to the members. Other techniques reviewed stated that authorities should subsidize rentals which encourage the private sector to develop in the developing communities as part of their contribution to the municipal works and infrastructure. A policy should be established that monitors safety pertaining to such investments as opposed to

requests of constant monetary provisions from the government which does not meet the necessary requirements majority of the time.

Policy embodies theoretical aspects that are transformed via research and case studies into practical methods and detailed techniques. Policy implementation is a complex procedure to incorporate into practical procedures; methods of such implementation should be appropriate to needs and intended objectives of such participation. Psychological aspects of the community must be analyzed and the best approach needs to be adapted to suit such needs. Institutional capacity should be adapted to carry out such implementation to the scale of the resources available. Prioritizing projects should be examined and systematically chosen to direct resources as appropriately as possible. Policy should be implemented in accordance with the framework of the project structure with optimum usage of resources. There is a difficulty in identification of problems in the transition from practical to theoretical aspects however post-implementation reviews and recording of lessons learned throughout the project cycle allows the minimizing of the gap between the planned performance and the actual performance of the project. Records allow reviews of the financial structure and target reaching without delays and additional claims of monetary value. Policy implementation serves as an overall milestone in the quality aspect of the project involving communities, quality of the principals of implementation reflects on the overall project as well as in time and cost implications.

Technological transfer into the developing community is a challenging process. Technological hardware transfer always has an associated price-tag which is often intangible however the inception of such remains with education. The procedure involves planning, implementation and the process of education is vast. It is highly recommended by all the academic participants that communities are educated on an on-going basis as opposed to prior a project implementation. Access to computers is vital in more developed communities however numerous areas still require basic education of mathematic and language skills. On-going education allows the community to be prepared for the participation process socially and psychologically and allows them to feel comfortable enough to participate and provide creditable ideas towards the projects. Initial basic education allows one to grasp concepts and ideas and implement them in potential anticipated employment opportunities. It is vital to maintain a close relationship with the community after handover of the final product even if the community was partly or fully involved in the construction phases of the project. Follow up maintenance allows the authorities to alleviate potential problems which may occur following the technological transfer and provide possible solutions mitigating financial losses and minimizing extensive usage of resources for corrective action. The costs of follow up procedures should be included into the project cycle. Although the technical administration costs may result in the project taking place on a smaller scale it may alleviate wastage of resources and financial losses. Technology based workshops in these communities continue to permit the limits to which these communities may evolve or integrate into neighboring industries and economies. All the participants agree that there is no shortcut or simplification method that accelerates successful technological transfer techniques. The methods of such techniques should be meticulously planned and community must be prepared on all aspects to ensure successful technological transfer procedure.

Government Participants

The government participants all had opposing views as when the community should become involved in the participatory project. Two participants believed that the community should be involved and informed at all stages of the project. Involvement should take place prior

feasibility and feedback must be provided to all parties, the community and authorities. Project prioritization should involve the communities to ensure buy in. The difficulty in that process lay in the resources allowed for community participation to be effective as well as the time constrains pertaining to each sector of the project in relation to funding and quality. An opposing view to the previous statement indicated that the community should only be informed of the project inception once the funding is in place; this is to avoid disappointment within the community. The participants lack motivation for further input once lengthy consultations take and no further action is taken. It is stated that although the community need not be involved in the concept stages of the project it is important to establish the communities requirements and needs; during such consultations it should be vividly explained that the consultation is a mere request for input of ideas rather then a promised project in the future. One of the participants further stated that it would be ideal that community residents always have access to authorities and present ideas, problems and inputs on consistent and continuous basis; this allows for authorities to have constant community contact as opposed to initiating research at inception of a potential project.

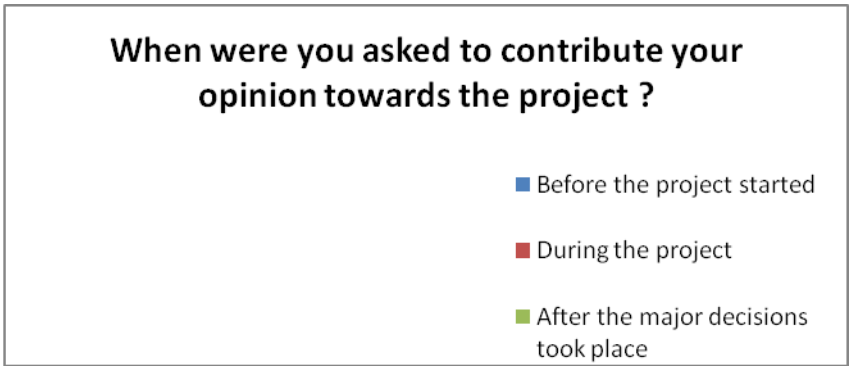
Reviewing the South African environment pertaining to community involvement and analyzing the methods that are best suited for implementation of projects and policies all four government participants agreed that labour intensive methodologies are best suited for communities as they alleviate levels of unemployment and provide skills for future usage of the residents. Capital intensive methods repel communities as little or no participation occurs due to the skilled labour needed to operate machinery. Two of participants elaborated further, stating that participation must be constant and clear communication in an environment where the residents feel comfortable must take place; allowing individuals to make their needs known and clarifying all issues the residents may have keeping in mind their background and education.

Policy implementation is a complex procedure to incorporate into practical techniques; however all of the participants had opposing views regarding that statement. It was stated that policy implementation was acceptable considering the amount of obstacles the government institutions have overcome in the last decade; adaptations to new methods of governance and lack of institutional capacity are aspects to be considered. Another participant had stated that institutions are coping with the implementations within the given time frames as well as the legal framework making policy implementation successful within budget and of the required standards. This implies that the policies created are practical and effective in the South African legislative structure and community environment. Another participant opposed this view completely stating that her experience in the field of community participation leads her to believe that no policy implementation exists during the participatory process.

Technological transfer is a complex procedure when referring to developing communities; the difficulty lies in understanding the process and the community's psychological, social and technical needs in relation to the procedure of technological handover. It is recommended that maximization in leadership programmes and practical training within the community allows community members to have in-depth understand of theoretical concepts presented to them, maximizing their education and general knowledge. Feedback should be presented on a consistent basis allowing the community insight into the procedures and the outcomes. One of the participants states that more organizations should be aware of community participation techniques and labor force available for leaning and training. Many companies and organization overlook the benefits and opportunities presented by community participation processes and employ their own staff to complete tasks within the developing settlement.

Community Participants

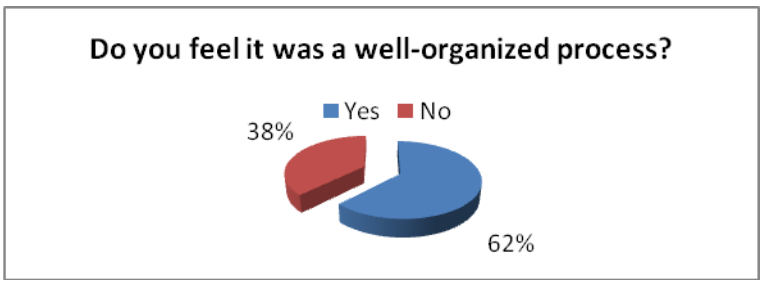
Figure 4.9: Commencement of Participation



Source: Author 2010

Figure 4.9 illustrates that 62% of the population stated that the project was already chosen by the authorities and they were asked for their input once the project was presented to them; this indicates that the choice of project is left to the authories with no input from the community. The communities needs are overlooked and best suitable project is introduced by authorities in accordance with their interpretations of the communities needs, the difficulty in this situations lies with the fact that if the community displays dissatisfaction the project has already been chosen and costs of fast track planning or conception planning will be incured. 25% of the population stated that they were consulted prior the start of the project and their opinion was taken into account regarding suggestions and concerns about the potential project. This implies difficulty in communication as well as avalibility of the participants at the time of conception of the project backtracking to results reviewed in figure 4.8. 13% of the population stated that they were consulted after the handover of the project. Indication the process can be viewed as an investigation of the communities' opinions of the reception of the project chosen by the authorities rather than a contribution towards the project itself.

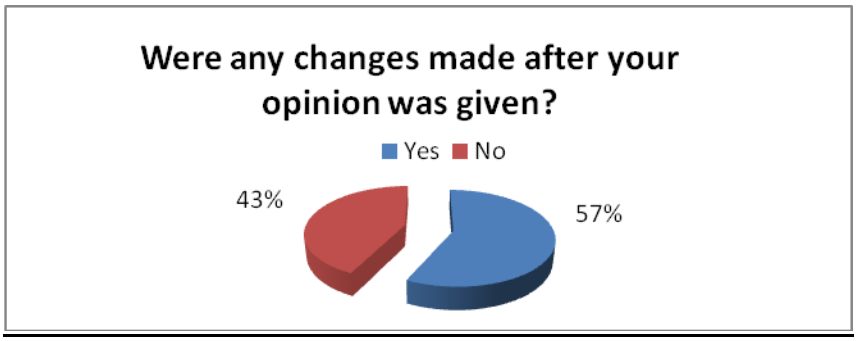
Figure 4.10: Process Review



Source: Author 2010

Although all of the participants have previously been involved in participatory projects only third of the sample population felt that the process was well organized and structured, indication that the government participation procedures were well prepared and controlled up to 60%, however there are numerous complexities that might have contributed to dissatisfaction of the 38% of the population these possible problems will be discussed.

Figure 4.11: Changes to Project



Source: Author 2010

Various changes were made on requests of the community regarding the project specifications, indication that the community's opinion is not overlooked. It should be taken into account that it is important to acknowledge once opinion even if it has no practical usage in the project. Acknowledgement of suggestion often results in encouragement amongst other community members and gives them the confidence to speak freely. This builds up their psychological and social self-confidence which is important in a psychologically volatile community, specifically one where no community participation has taken place before. Overlooking ones' opinion breakdowns ones' self-esteem and results in community members' feeling apathetic toward the community participation procedure.

Conclusion for the Objective

Partial consensus was reached reviewing community involvement in different stages of the project cycle. The academics all agreed on involvement of the community as early as conceptualization stages. The government sector partially agreed to this statement with 50% supporting the academic consensus however the other participants opposed this view stating that community involvement should be implemented when funding is secured.

Brief and design freeze functions were reviewed by the academics only. This indicated that no such milestones are implemented in government conducted projects that the government participants were aware of. No comparison of results can be made.

Methods of community participation reflected agreement from all of the model participants reviewing methodologies of labour intensive procedures as well as correlating community participation methods. Community further contributed reviews of participation methods which allied to the other model components. Education and psychological aspects were emphasized in all of the participants' contributions.

Transition between theoretical and practical processes of policy implementation and further suggestions and recommendations were reviewed. The academic and government sector were in consensus highlighting the main problems such as execution of projects and problems regarding funding, institutional capacity as well as time and cost implications. 63% of the community reviewed that the procedures that they partook in was well organized, the latter quantified opposed this statement.

Recommendations simplifying the technological transfer were reviewed by all of the model participants. The parties displayed agreement reviewing issues such as education within the developing communities, consistent feedback and on-going learning procedures.

4.5 Identification of Project Areas where Policy Implementation Requires Attention and Review

Academic Participants

The participants reviewed numerous problems during their research in relation to problems which have been studied in the South African context in case studies and as well as academic literature pertaining to community participation and technological advances. The participants outlined problems of education with specific reference to the apartheid era which prohibited education in the black majority causing severe impediments in the education system which still reflects setbacks. Setbacks occur to due to lack of funding available to correct the extent of the apartheid effect of the developing community in South Africa. Lack of funding simultaneously reflects of lack of resources available to provide educators in the system to be able revolutionize the education structure. Exclusion of women in the participation process was reflected to be a common problem faced in the academic literature; this problem was reviewed in participation processes worldwide in similar developing conditions to that of South Africa. Further issues stated difficulty in establishing community consensus due to the diverse culture in South Africa and the language barriers. Communities are often unprepared to communicate with authorities and unsure of their social position and the detailing of the project. It is difficult to conduct meetings with members who struggle to express their opinions and understand the requirements from them taking into consideration their previous and current disadvantages in society. One participant went on further to review literature regarding social housing expansion which stated that that a member of the community may only qualify for social housing once in a lifetime; these members become affluent at the occurrence of the transfer of property, however this poses the question for the developing community enquiring at what point does one no longer qualify for subsidies and can now be viewed as sustainable community?

It is difficult to establish the clear difference of theoretical policy implementation aspects to that of practical ones. Application of principals from policies can be structured into daily activities and programme progress over the project cycle to implement the planned progression and measure against the actual product; the feedback can illustrate the differences in policy undertaking of actual versus planned/theoretical. Financially one can measure the actual planned against the theoretical policy with regard to usage of resources and the timely progression of the project against the usage of resources. One can ask such questions as did the community benefit accordingly to the planned usage of resources within the principals provided via policy implementation? With that in mind is the project of target and reaching the specified milestones? It was further stated that theoretical policies are always defined by broader spectrums, while practical implementation is limited to the confined needs of the locality and resources available. It was also highlighted that academics often do not participate in practical policy implementation but rather remain educators in the theoretical fields therefore it is difficult for them to compare such aspects unless they are working professionals in the field.

Suggestions were requested with regard to strengthening practical community participation procedures. Two of the participants agreed that flexibility and adaptability to change in accordance with the evolving environment and the forecasting of potential problems would

benefit the participation procedure. Risk assessment and mitigation should be taken into account when planning is conducted and reviewed this would minimize loss of resources. One of the participants stated that meetings and consultations should be planned and achieve targets within timely constraints. No consultation time should be wasted with no outcome. The government must acquire strength in their institutional capacity which ensures more experienced professionals are executing successful projects. One of the participants argued that government policies should be changed from what they perceive to be the ideal solution to incorporate and array of solutions to satisfy the immediate needs of the growing population. There are many loopholes in the current organization which aims to reach an ideal community participation procedure, however the main underlying factor remains with the lack funding available in the fiscal policy to upgrade the overall system.

60% of the participants have not been involved in the technological transfer procedure during their years of designation, of which one of the participants elaborated that decisions were governed by authorities whose main concern was to outlay a generic service package as quickly and as cheaply as possible neglecting long term effects on the community and their growth. Another stated that participation was almost purposefully avoided to save cost regarding the time related preliminaries and generals, and specialized overheads on the project; with the client being a government party stating that the project objectives remains to be cost effective and to be completed within the time constraint provided. The funding relates to the overall structure of organizations and availability of professional services being provided. It is also evident that the projects where no participation took place were incorrectly budgeted for and should not have been executed under the given circumstances. The other 40% of the participants stated that their involvement was within the Gauteng region, namely Germiston and Alexandra where relocation and RDP housing projects took place respectively. Both of the projects were stated to be successful with participation taking place in the initial stages of the project. The greater percentage of participants being advised against the participation procedure by the client indicates the lack of policy implementation and institutional capacity necessary to execute the projects of such nature.

Preparation of communities of technological transfer is crucial, without preparation one will neglect the maximum usage of the innovation provided in the community which will result in wasted resources for all the stakeholders involved. The participants were requested to provide suggestions for preparation of such process. It was concurred by three of the participants that usage of diagrams and pictures featuring benefits and information illustrated by the new technology is functional tool to relate community participants. Diagrams relate to participants that struggle with language barriers and allows them contribute to potential problems and input suggestions via their congregation leaders. Demonstration of technological advances with simplified yet detailed information is necessary. Further explanations should include what is required of the community prior, during and after handover of the project. It is necessary to identify roles of the community members and other stakeholders as points of responsibility. It is beneficial to illustrate histogram of responsibility and make it available for the public to view on a community notice board to indicate points of accountability and to whom the questions may be directed and ideas put forward. It was further stated by the other participants that one must simplify the process and integrate the community into a learning process preferably spilt up in phases correlating to the project cycle to ensure that progress can me measure and evaluated at the end of each phase. Further adjustments can be made to the planning of technological transfer processes. Teaching the community skills to empower themselves on a basic level appropriate to their surrounding circumstances on a continuous basis.

As only 40% of the participants stated that they were involved in the participation procedure; only 40% reviewed the problems they had experienced stating the major contributors to problems was the lack of funding form the authorities and education among community members. It is evident that in most building projects involving community participation the cash flow and budget do not accurately provide for successful technological transfer to take place; lacking professional expertise in the field reverts back to lacking institutional capacity in the municipal departments and government institutions.

Government Participants

Authorities often encounter problems associated with processes within the community participation procedure. It is vital to identify such problems and research theoretical and practical solutions. The participants elaborated on the main problems presented by them which will now be discussed. Lack of consensus within the community creates a hostile working atmosphere, dissatisfied members no longer wish to attend further meeting and create problems for further community participation processes; they discourage others from participation stating that their needs were not met and they were disregarded. Often the communities needs differ from the needs of the proposals put forward by the authorities; this often creates a clash of ideas and leads to valuable time and resources being misused to solve and validate arguments which are unproductive yet on-going. Other problems mentioned reviewed the running of meetings; as meetings in developing communities are often called for the masses and large numbers or the population are present it is often seen that one person dominates, this results in the masses not voicing their opinions and suggestions. It is also difficult to pin-point whether the community's suggestions are taking into account during the implementation of the works, construction or technological processes. It is difficult to measure the effectiveness of the participation process while it is in progress. Constant feedback requires capital and resources which are often not budgeted for in the forecast of project cost and cash flow structure.

All the government participants felt unsure about how policy implementation differs from the envisioned aspects as an authority, however one of the participants observed that while imperatives are implemented and objective are achieved it is done at a fairly slow rate and government does not often have specific milestones against which it measures community participation aspects. It can be observed that the participants that were unaware of such progresses and procedures have not explored. Such aspects in their previous participation encounters have not analyzed and no method of quantification has been established. It is imperative for participation procedures to have measurement of success within the project. Effectiveness of procedures and participation methods need to be quantified on an n-going basis to establish success of failures of the techniques implemented in the community.

It is critical to apply empowering or corrective action to strengthen the structure of the practical participation. It was suggested that this is achieved by diversifying the communication procedure to small congregations or individual interviews specifically prior the design phase as final input is always considered. Distribution of information via local media and other local methodologies supports local focal points of the community and encourages further innovation. It was further stated that empowerment and corrective action highly depends on the feedback the authorities receive, suggestions such as public surveys and other suggested forms of measurement pertaining to the participation process implemented are highly regarded.

Half of the government participants have not been involved in technological transfer in their designations over the years. This indicated that authorities are not implementing innovative technologies and technological processes are slow. However with the current construction taking place in the developing areas across South Africa it is reassuring that more of the industry employed professionals will be involved in community participatory processes. The other two participants stated that their involvement was in training communities with usage of new technologies such as computers and GPS in the Diepsloot area and implementation of Expanded Public Works Programme via Johannesburg and Middleburg municipalities.

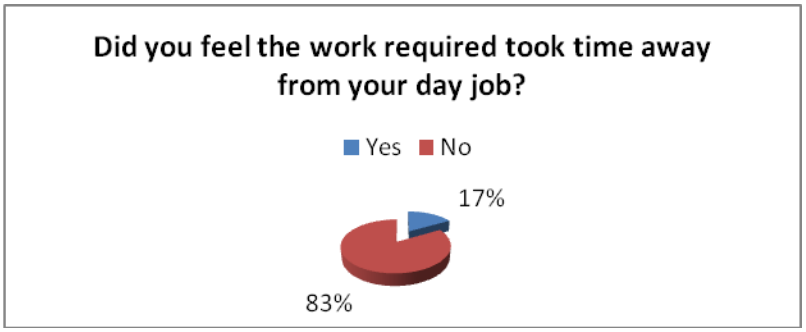
The outcome of the Diepsloot project resulted in training taking place on site as well as presentation of the pilot projects, however no actual implementation of resources or further progress occurred. The EPWP projects resulted in 2 year training courses of unemployed individuals in the community where after two years they were trained further in as emerging contractors who could implement labour intensive projects. This clearly indicated the potential of the technological transfer process together with policy implementation initiatives creates altering opportunities for the developing sector in South Africa.

Intense preparation for the community's reception of technological advances is vital if it is to result in successful action, greater opportunities and higher standard of living. The participants believed that efficiency of technologies need to be easily conveyed and the training assistance needs to be on-going even after the transfer has taken place. This will result in reinforcement of knowledge and allow it to filter through the community by community residents being able to assist each other rather then reliance on professional aid. One of the participants stated that internet access is vital for communities to review availability of resources and opportunities to learn about various technological innovations. The lack of monetary resources results in difficulty to uphold such sessions in the developing areas. One of the participants elaborated further and stated that adult education is vital to enhance understanding of basic construction methods as well as basic calculations necessary to quantify resources and make necessary deduction which in time maybe expanded into cost control techniques.

Technological transfer results in numerous problems during take-over and establishment processes. It was stated that no major problems have been encountered by one of the participants with an opposing view from the other, stating that the community is focused on poverty alleviation as see commodities given to them with monetary value rather then an educational facility to secure their future. It has been observed that objects subsidized by government and free issued to the community are often sold at a lesser value in order for the community to make an income and satisfy their basic necessity such as hunger and thirst. Government authorities fail to explain the long term goals for creation of sustainable communities that have the basic education which allows them to satisfy their basic needs financially. However this system reviews various omissions such as heterogeneous ages, sex and ability to gain and implement such knowledge. It is often overlooked that elderly, disabled, and many other classes of people within the community cannot be trained to work and yet still lack the necessary income to provide to their fundamental needs.

Community Participants

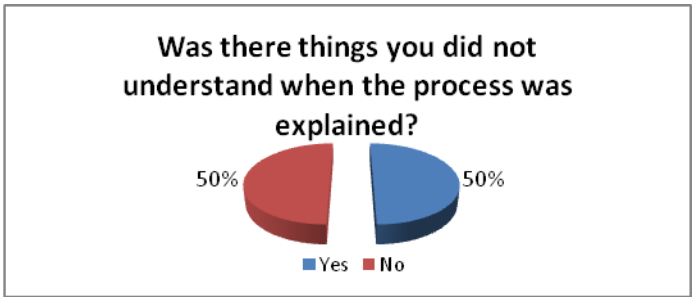
Figure 4.12: Participation Requirements

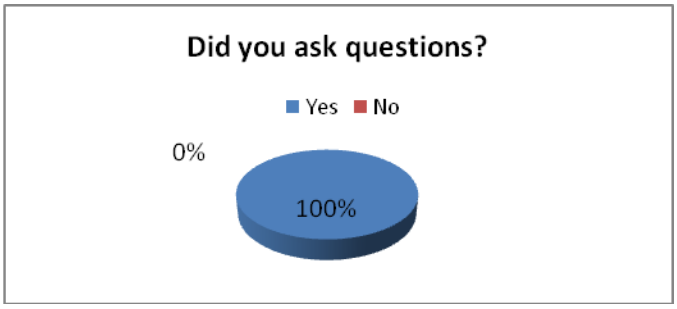


Source: Author 2010

Figure 4.12 illustrates that 17% of the population felt that the participatory procedures took time away from their daily employment; indicating that 17% out of 25% of employed population was unsatisfied with the time and efforts required to participate in the procedures requested of them as per figure 4.4. This results in 68% dissatisfaction displayed in the labour force. The author suggests that this area should be explored further to implement government procedures that allow accommodation the working class of the area.

Figure 4.13 and 4.14: Understanding of the Participation Processes



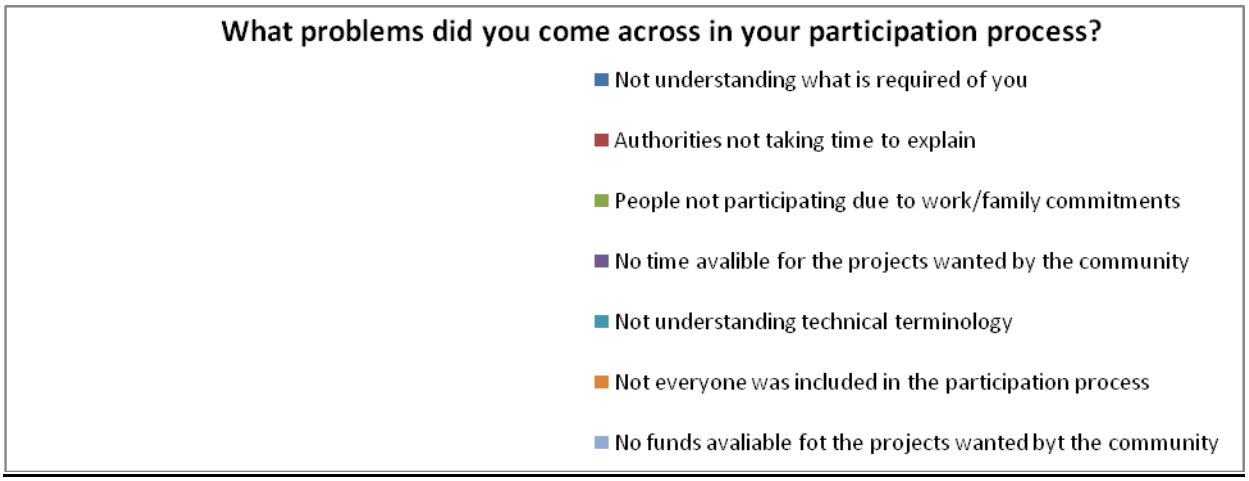


Source: Author 2010

The 50% split indicates that the explanations government's procedures, goals and processes need a more detailed meticulous approach for the entire community to understand what is required of them and how the project is going to proceed. However the entire population felt

the need to gain more clarity and understanding on the participation methodology towards the project and enquired further explanations. This specifies that an encouraging atmosphere is created throughout the participation process and the community members feel comfortable to ask questions when further input was needed. Although 100% of the population asked questions the author gained insight from the population that sometimes the questions were not answered properly and created more confusion rather the clarification. This might be due to language barriers and lack of education as illustrated in figure 4.3. This indicates that the government authority representatives were unprepared for the possible questions and enquiries prior the communication with the community participant. In-depth preparation is needed prior contact with the community. The authorities should prepare for possible questions and explanations that the community might have as well as solutions to the queries.

Figure 4.15: Problems Encountered During the Participation Process



Source: Author 2010

There is an obvious correlation between the three tiers of the participation procedure structure with regard to the problems experiences within the discussed framework for this research. The community was presented with numerous choices for the problems they have previously encountered during the participation procedure, the participants were not required to chose one specific option but rather numerous option they felt were applicable as well as their own input.

The largest contributors to problems quantified to 38% and 31% stating that availability of funding hindered the development process as well the community were unable to participate due to other commitments respectively. This correlates with previous the statements reviewed where cash flow was the dominant factor hindering further development as well as civil clashes occur within the community among the community and authority members.

A significant statistic of 15% reveled that the participants stated that they lacked understanding of the technological terminology during their participation process. This reverts back to basic training and education necessary to establish fundamental understanding which allows the members of the community to structure their questions in a way which enables them to understand and articulate their needs.

Conclusion for the Objective

Corresponding questions were asked with associated theoretical and practical factors elaborating on problems in the participation procedure. Both aspects reviewed by the academic and government respectively correlated the problems experienced within participatory environment. Main problems reviewed consisted of funding, education, language barriers and clashes of opinion within the community. The community's views correspond with the academic and the government sectors highlighting the main problems listing over: funding, education and language barriers.

The government sector was requested to review the differentiation of processes between the planned and actual results within the policy participation procedure, where all of the participants were unclear on the result. The academic evaluation of practical and theoretical aspects revealed that in order to quantify differences one must set milestones in the programme progress which was clearly lacking in the government reviews.

Suggestions were put forward by the government and academic sectors regarding processes that solidify participation procedures. Suggestions proposed by the sectors allied in ideas put forward emphasizing aspects such as measurement of milestones, flexibility and structure of processes, increase in institutional capacity and other comparative factors.

50% and 60% of the academic and government sectors respectively have not been directly involved in technological transfer, the reasons correlated significantly. The academics stated that decisions were governed by authorities who were interested in cost and time savings and the government concurred stating that lack of funding prohibited such improvements. 80% of the respective academic participants believed that the technological transfer procedures they participated in were successful. This was closely linked to the 100% of the government participants that stated that their involvement displayed a successful outcome.

Suggestions were put forward reviewing proposals for improvement of technological advances. The academic and the government participants identified similar ideas that will aid improvement reviewing aspects such as education, aid in language barriers with usage of diagrams and the like.

Problems relating to execution of technological transfer were reviewed. Interrelated aspects were emphasized in both parties' responses; once again the main contributors were funding and education.

4.6 Establishment of Methods of Integrating Social, Psychological and Technical Elements

The participatory process integrates various factors for the stakeholders in the procedure. The author requested recommendations to achieve a balance of social, psychological and technical elements in the participatory process.

Academic Participants

The academic participants stated the various factors that contribute to creating a balance amongst the social, psychological and technical elements in the community participation procedure. Identification of stakeholders within the project cycle and their social relationship to each other aids in understanding and undertaking various approaches towards the community benefactors. Community members have suffered from suppression for many years during the

apartheid era and require building of moral and confidence in stating their views during the participation procedure; this incorporates psychological aspects that determine their choice of projects and further empowerment in the community. Social, psychological and technical aspects are incorporated into ownership of the technology provided for in the participation procedure. Ownership is associated with status and pride. Community participants are further encouraged to develop skills and expand their education via the knowledge gained through the project cycle. Various project cycle phases reflect different growth points for the community it is important to maintain equilibrium among the above factors.

To ensure that a balance between the above elements in maintained a detailed breakdown of management functions should be implemented. Ensuring that professionals are well informed on their subjects and community participation procedure together with risk assessment allows the optimum usage or resources focusing on achieving the objectives to inform, educate and empower the community through the balance of elements described above. It should be in the interest of the project manager to generate a cohesive structure that creates equilibrium amongst all various elements which is able to adapt to flexibility and change in community requirements. These views were opposed by one of the participants stating that these aspects should not be the focus of the project but rather should be a natural progression within the participation procedure. Although the focus should be on education the social and psychological networking procedures need not take priority or use up time and resources specifically to focus on such aspects.

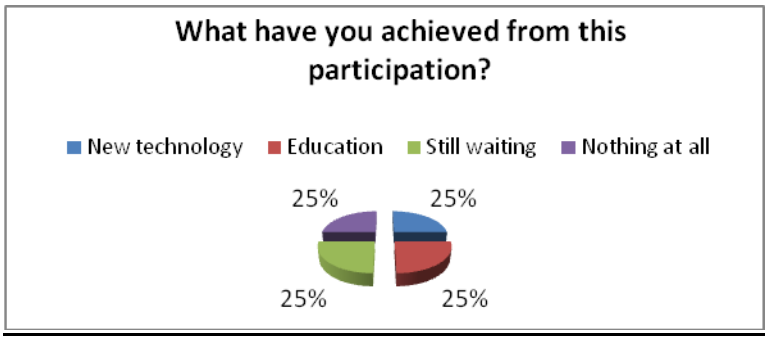
Government Participants

Difficulty exists in maintaining a balance among the social, psychological and technical components during the duration of the participation procedure throughout the project. Recommendations enhancing the equilibrium of such elements can be achieved by ensuring that specialists are retained in all areas of work to ensure the needs of the community are met. Involvement of community leaders enforces the project team to retain close contact with the community at all times. If the community is heard and their needs are known limitations and errors can be mitigated and corrected. Community involvement in the project evaluation is vital provided the community members can voice their critiques constructively and their opinions are recorded in a non-prejudice manner. To ensure equilibrium is met involvement of women should be prioritized; discrimination of women can hinder social developments of the community and impact psychological aspects of the participants. Women's involvement in the technological transfer is vital as previously discussed in the literature review and now reinforced by government authorities.

To ensure that the balance of the elements discussed above is met via the communication process one needs to implement the usage of local languages and incorporate the respect for usage of local structures, religious and political aspects of the particular community. Timing of meetings or other participation procedures need to be taken into account specifically to accommodate women and employed individuals. Young individuals within the community should be able to participate in the meeting as messages of the meeting agendas will be conveyed to their families if other family members are not able to attend.

Community Participants

Figure 4.16: Outcome of Participation



Source: Author 2010

The community participants felt that various outcomes were achieved out the overall procedure. Half of the participation procedure reflected positive results indicating that various projects were successful in their objectives in achieving new technological advances and expanding community education. The other half of the participants produced negative results and felt that nothing was achieved and they are still waiting promised results. This indicated that projects were poorly structured and a quarter failure rates is an unacceptable waste of capital and resources on the given project.

Conclusion for the Objective

Incorporation of social, psychological and technical elements was discussed. Although the contributions towards such aspects displayed various ideas it was evident that the notions were moving towards the same objective. Aspects such as stakeholder identification, women involvement, education and empowerment were discussed.

To maintain the above mentioned elements correlating ideas were proposed by the academic and the government sectors reviewing institutional capacity, increase of community participant attendance, feedback and improvement communication networks were mentioned.

CHAPTER FIVE – CONCLUSION

5.1. Conclusion

After reviewing the results of the research in Chapter 4 it is clear the various gaps exist in the community participatory procedures, policy implementation and technological transfer processes. The research objectives were broken down into workable packages and results analyzed pertaining thereto.

The objectives of the research were met through qualitative questionnaires and the following outcomes were established:

The interviewees in several instances highlighted the fact that lack of funding was the foundation of the lack of success in several projects due to misallocation of funding and their overall shortage on the budget. Funding was an aspect considered by both the academic and government field believed to be a main contributor to project delivery. The financial component can be viewed as the governing body of the inception of problem areas as the lack of education, professional expertise and provision of technological advances into developing areas are all governed by capital within a project.

Although the financial aspects is a chief contributing factor to developing projects and technological transfer, the author focuses this dissertation of social factor, technical advancement in light thereof and psychological contributors.

Focusing on the financial aspects diverts the research questions and would overshadow the other contributing factors that are currently subjects for further research. The research creates a basis for analytical understanding and rationalization of factors from aspect to which financial allocation can be made and analyzed in accordance with social, technical and psychological contributors from various tiers of the participation model.

Participatory processes require vast financial planning that can be researched and developed into a regulated financial budget or a bill of quantities adjusted for variation orders and financial reporting and feedback on such procedures.

The participants from the academic and government component stated that the all the projects were conducted with lack of funding available for them to liaise and spend time with the communities. No time was allocated and no goals were set measuring contribution toward community improvement. However majority confirmed that they felt that any technical contribution in the developing community was viewed as improvement to their current lifestyle and therefore reviewed as success within the project.

It was highlighted that maintenance after project handover is an important factor contributing to the development of the community. The education throughout community involvement in technological transfer contributes to the empowerment of the community and allows the community members to gain various skills which will be profitable and/or beneficial for them in the future.

The literature review depicts understanding of technological transfer as well as transfer of knowledge among individuals. The author thus has insight as to how to use such relationships and previous studies discussed in the literature review to structure better process of technological advancement within developing communities and preparation of the individual

members to have successful responses, maintenance and prospective empowerment of the community.

The author believes that technological transfer is an empowerment tool in developing communities; it enhances the community members' lifestyle as well as creates a contribution to their education and therefore employment prospective. The transfer of knowledge need not to be once of factor that is distributed from the professionals involved in the procedure of introductory and further technological education but can be further developed through informal relationships and practical experiences within the community. An important factor that should be highly stressed in the participatory procedure of technological transfer is whether the community able to sustain such technological advancement after the establishment. The maintenance of the technological advancement is vital for the consistency in the improvement of the standard of living; one cannot provide a technology into the developing community which is no longer useful or can be sustained by the community themselves, unless maintenance is planning forms part of the budget. Professionals in government and public works should structure the process in such a way that the community knows how to maintain the product; this allows them to teach each other and aid each other in potential problems. Technological transfer procedures require more professional input and review in terms of preparation needed to understand such process and ensure a successful outcome- social background and understanding is essential.

The participants agreed that education was believed to a major setback in ability to communicate and understand the processes proposed by the authorities, social interaction as well as understanding aspects of technology suffered due to inability of the community to understand what was required of them and how their contribution can be made. Another aspect contributing to the miscommunication among the ties precisely the between the government authorities and the community would be the language barriers which hinder the technological advancement and explanatory process.

The professionals felt that there is difficulty in communicating with the previously disadvantaged communities without prior understanding their needs and social conditions. Previously disadvantaged communities experience lack of self esteem and social dynamics in engagement with those who are foreign to their culture and community. The community is often afraid to ask questions, give their opinions and is often dominated by stronger individual characters among them. Informal relationships were stated to be important and their contributions should not be underestimated.

Women within the developing communities were highlighted by the academics and government participants; their role was viewed as important role which was previously overlooked and hindered the development of the projects as well as social standards within the community.

The literature review supported the opinions of the professionals from academic field as well as the government authorities, reviewing group dynamics and the various suggestions to reasoning and in-depth understanding of group decisions and motivation of individuals to behave assertively, passively or remain neutral when it comes to decision making and contribution of opinions in group situations. Women are highly valued in the community and do not usually carry the hypothetical role in the family. Some women are the head of the family and should not be disregarded within community participation as previously practiced. Factors affecting choice are discussed allowing the author to understand the motivators within a

community and the ability to potentially structure more functional and monitored participation procedures suited to specific communities. The understanding of such social dynamics also contributes to methodologies and principals enforced in policy implementation.

The author believes that it is vital to understand social behavior and conduct as well as in the South African the diverse cultural factors that contribute to community functions and mannerisms. The basis of all procedures should be established on the values, understanding and social interaction within the certain community.

Once the community is studied in depth on a social level the participatory approach chosen by professionals will be better detailed and tailored to construct a functional measurable procedure which will allow for milestone measurement in terms of knowledge distribution, technical learning, understanding and operations as well as empowerment of the community.

The empowerment of the community members through knowledge allows individuals and groups to construct and realize individual goal and motivation to learn practical and theoretical aspects of technology advancement as well as social conduct. Individuals incur self confidence and security in their own personal capacity allowing them to strive for higher achievements as discussed in the literature review. The individuals become stronger and their self-esteem is elevated with every session of interaction and learning from professionals. They develop a sense of self worth and begin to realize their importance and potential contribution to society and project particulars.

Social acceptance forms the basis of the participatory approach and development of successful procedures, once the community is comfortable and accepting of the changes the authorities are willing to provide them with based on their needs, ability to understand, accept and maintain their new standard of living results in professionals being able to direct their resources with minimum wastage ensuring a productive out come. Legislature and political principals governing such procedures allow professionals to deliver them to the developing communities.

Consensus was reached between the academic and the government sector regarding the difficulty in administering the theoretical aspects of policies. It was further stated that to administer such principals the institutional capacity needs to reflect a specific standard and be staffed with the appropriate personnel trained in specialized areas. These areas involve a combination of technical and social skills. Government participants believed that they liaise with the academics often to establish innovative methodologies for implementing community participation to constantly improve their procedures. However the academic sector opposed such views stating that government rarely consults the universities and the academic community for policy improvement and advice.

Academics suggested that in order to monitor and ensure that principals of policies are adhered to it is vital to incorporated them into project activities and schedules in the programme. Feedback is an integral part of project and policy implementation evaluation. However it was highlighted by the government participants that feedback is an expensive procedure and resources for the project are usually exhausted on other vital activities. It was pointed out by the academics that principals should be adjusted to suit the needs of particular communities, also concurred by the government authorities that communities are complex and require specific care and needs.

The literature review outlined the specific characteristics in the various community sectors; it was reviewed that a community should be carefully studied on a psychological, social and technological level to establish the best approaches regarding political advances. Procedures regarding the various approaches were discussed and detailed in terms of the research components. Institutional capacity, legislation and framework structure were reviewed to indicate the state of the progression in South Africa since 1994.

Growth of government institutions in relation to execution of participatory projects has vastly increased since the apartheid ending, however lack of professional experts working in government project is still lacking. This brings about the problem of project management in consensus with policy procedures. The legal administrative aspects require further improvements too and this aspect is aligned with the problems discussed by both the academic and government participants.

The author believes that improvement of the policy administrative procedures lies in the ability to adjust theoretical aspects into practical executions. It is vital to understand the requirements of specific communities needs on various levels however the execution of a specific project lies not only in ones understanding but the ability to make adjustments to the project programme to the needs of the community as they become apparent. It is often that a project manager identifies specific needs within the community and does not make adjustment to project plans, procedures and programmes even though they are necessary.

Consultants are usually overlooked when a budget of the project is prepared. It is often seen as a vast expense to incorporate services of a legal administrator or project manager familiar with policy execution in developing areas. However a consultant would be an ideal way to follow through a project to the best of its ability regarding budgetary control, project adjustments and policy implementation.

The research provides analysis for understanding community participatory projects on various levels such that technological transfer is achieved to the most beneficial ability for the benefactor and the beneficiary, illustrating an improvement in standard of living, education and empowerment of the community.

Further the research illustrates understanding of irregularities found in policy implementation with that of practical execution together with suggestions from the academic, government and implied principals from the community participants. Suggestions were put forward and possible improvements were discussed.

The research analyses aspects of psychological structure that allows the reader to understand the community and the individuals' behavior which provides a basis for various approaches regarding procedures and personal conduct and mannerisms.

Further research and recommendation will now be discussed

5.2 Recommendations for Further Study

The recommendations that the author proposes to further this study are as follows:

Technological transfer procedures should be examined in programme process of the project. Each sector of the programme process should be reviewed separately and suggestions and recommendations provided to each of the stages.

The technological transfer procedure should also be studied meticulously regarding the maintenance process after the transfer has taken place. Problems within the community should be documented on a practical level with practical suggestions being put forward. They should be implemented further in the same of similar conditions for reviewing of the results.

Earned Value Analysis (EVA) should be researched with regards to integration of community participation procedure as part of analytical cost measurement technique in the project. The analysis will allow the users to incorporate the cost and time of community participation throughout the project and in turn analyse its impact the community component in the feasibility estimate, budget, cash flow and other cost components.

Feasibility study procedure of calculating cost of community participation and the principles that are associated with such costs should be explored. Feasibility would allow for proper planning of costs and resources as well as the scale of project in accordance to the budget.

Community participation can be incorporated throughout the project cycle; aspects in each of the project stage can be analysed separately or in relation to each other. Community participation varies throughout the project cycle in terms of the time contributed, the skills and other contributions which maybe physical or intellectual.

The project programme should reflect a detailed outline of the milestones pertaining to community participation objectives in terms of the community empowerment, education and skill development. A method statement should be drawn up to incorporate the community into the process of daily activities illustrated in the method statement. The method statement forms the basis of the pricing and resource allocation to the project.

A risk profile of a participatory project should be examined. The setting up of such procedures would allow the final users to illustrate risk that can be encountered. Risk would be quantified in accordance to cost and procedures to mitigate such risks should be established. It is important that the risk profile allows for flexibility of alternate methodologies and processes. Quantification of alternative methods of achieving project goals would allow the project manager and cost controller to remain within budget. Escalation of the cost of community participation should be integrated into the feasibility and cash flow analysis. Contingencies of such costs should be calculated and a breakdown of cost components offered.

Participatory projects often reflect failure in budget and cost planning. Procedure for incorporation of the community into the bill of quantities or a rates schedule should be tested and established. The prices should be illustrated in relation to the time related preliminaries and general in relation to the professional services rendered by the government sector. The rates would be flexible in terms of time spent on a particular process and quantification and incorporation into the project budget.

Problems and solutions should be studied and community participation implemented in a pilot project on a smaller scale and thus making recommendations for further progression. Project failures that overlook community participation should be explored; solutions should be meticulously structured into the components of the project cycle keeping in mind that all projects are heterogeneous.

Logical Framework Analysis (LFA) can be established for the community participation procedure throughout the project cycle, the LFA should be based on principals instead and practical techniques that can be incorporated into the project cycle, the author herewith should advise n variations and assumptions.

A database foundation could potentially be beneficial as basis for information contributed by the academic community for usage for methodology improvements and constant updates that may serve of purpose to the government sector.

The above mentioned procedures reflect the overall scope of the research problems extracted from the answers proposed by the professionals and the community members within the industry. Implementation and research of the above would secure a financially sound project. A financially secure project would reflect greater productivity and milestones would be reached progressing with minimum wastage of resources.